

THE TEACHER'S GUIDE TO

TECH 2023



JENNIFER GONZALEZ



CULT OF PEDAGOGY



The Teacher's Guide to Tech

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AT FIRST GLANCE IT MAY APPEAR TOO HARD.

LOOK AGAIN.

ALWAYS LOOK AGAIN.

MARY ANNE RADMACHER

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INTRODUCTION

How This Guide Works 11

When it comes to technology, the one complaint we hear most often is that people have trouble keeping up with it. Not that it's too hard, not that it's too "technical," but that keeping track of it all is simply impossible.

How We Choose the Tools 14

To try to capture all existing tech tools would mean this book would never be done. When choosing what to include, we keep these questions in mind.

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When we update this guide each year, our team checks every page to make sure the links still work, the videos and screenshots still represent each tool accurately, and the information on features is still correct.

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It takes a lot of brain power, teaching experience, and time with tools to pull this off. Meet the people who put together this year's guide.



How This Guide Works

When it comes to technology, the one complaint we hear most often is that people have trouble keeping up with it. Not that it's too hard, not that it's too "technical," but that keeping track of it all is simply impossible.

If that sounds like you, then this book will be a game-changer, a filter that lets you sort through the wild mess of tech tools and quickly determine which ones are worth your time, which ones might be nice to learn later, and

which ones you can ignore for now. We have gathered up hundreds of tech tools, sorted them into categories, provided a simple description of what the tools in each category do, and collected ideas for how each one can be used in your teaching.

If you're a **tech novice**, this guide will answer the questions you may have been too shy to ask. When someone uses a term or talks about a program they're using, you can come here and look it up. On every page you'll find explanations in plain, simple language—it will be like having a patient, tech-savvy friend sitting beside your computer, your phone, or your tablet.

If you're **tech-intermediate**, this book will help you up your game. You're probably pretty comfortable with a good handful of tools, but there may be whole categories of terms and tools you've never had the chance to explore. This book is your shortcut, saving you the time it would take to research new technologies and allowing you to decide quickly if a tool is worth learning, or if it's just something you can introduce to an inspired student.

If you're a **tech junkie**, this book will enrich your work in two ways: First, it will introduce you to a few tools you may not have heard of, feeding your insatiable hunger for more tech as it further solidifies your status as a technology expert. And second, it can serve as a teaching tool, something you can use to guide others if they come to you for help.

KEY FEATURES

This guide is published exclusively as a PDF, rather than in an e-reader or a print format, so it could be interactive, like a complete website you can put in your pocket. If you understand how to use its key features, you'll get more out of it.

Here's how the book is organized:

INTRODUCTION

A quick overview of the guide and how to use it.

THE TIPS

This is the "reading" part of the book, with articles and Q&A about the thoughtful use of technology.

THE TOOLS

This section gathers hundreds of popular tech

tools and groups them into categories. Each category starts with an explanation of what that “type” of tool does and how you and your students can use it. Then we take a closer look at a few popular tools in that category, with a brief description of what each tool or site is about, a link to the tool’s main website, a link to a video demonstrating the tool’s features (if one is available), a screenshot of the website or the tool in action, plus links to related outside resources (see diagram on following page).

THE TERMS

This glossary of tech-related terms sometimes includes pictures or icons related to the terms.

INDEX

The index includes every term and tool described in this book, and every item is hyperlinked, allowing you to click the page numbers and go straight to the pages where the terms appear. For tools, we will choose the main page where that tool is featured, rather than list every single page where it appears; this is because some tools are mentioned in many places, and we want to give you the quickest path toward learning what the tool does.

NAVIGATION BAR

The bar across the top of this page is a clickable navigation bar. If you click on “Menu,” you’ll be taken straight there. If you want to check the index, just click “Index” and presto—right to the index. A sub-menu of the topics or tools within each section has also been included underneath the top navigation bar, so you can easily click back and forth between items in an individual section.

DIGITAL VS. PAPER

This book was designed on an 8.5 x 11” template to allow you to print it. A paper version might come in handy at times when you don’t have access to a computer or other device. However, if you want to take advantage of all the time-saving links, you’ll get the most out of it by using it electronically.

Keep copies of this guide on your work computer, your home computer, and your mobile devices, so the information will be available no matter where you are. You can also keep copies on your classroom computers for student access.

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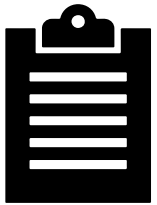
Throughout this guide, you’ll find boxes offering lists of cool things to check out: TED Talks, Google Add-ons, classroom technology equipment, and other things we think you should know about. To find them, look at the end of the [Menu](#).

The screenshot shows the 'The Tools' page from 'The Teacher's Guide to Tech 2023'. The page features a navigation menu at the top with 'Introduction' underlined. Below the menu is a 'Curation' section with three tool cards: Flipboard, LiveBinders, and Pinterest. Callout boxes point to various elements:

- A box on the left points to the top navigation menu, stating: 'Links to the Menu, other major book sections, and the Index'.
- A box at the top right points to the 'Curation' header, stating: 'Link to the category page describing this collection of tools'.
- A box on the right points to the tool links in the header, stating: 'Links to the other tools in this category'.
- A box on the right points to a video player for Pinterest, stating: 'Link to a video that demonstrates the tool in use'.
- A box on the right points to the 'Similar' links below the Pinterest card, stating: 'Link to the tool's main website'.

WHERE IS THE BACK BUTTON?

Although this guide allows you to easily jump from place to place, one thing that's missing is a Back button for getting to the last page you viewed. But if you view the guide in Acrobat Reader, which you can download free [here](#), you can add one: Just go to View → Show/Hide → Toolbar Items → Show Page Navigation Tools → Show All Page Navigation Tools. The Back and Next buttons will appear in your toolbar (they will look like left and right arrows).



How We Choose the Tools

To try to capture all existing tech tools would mean this book would never be done. When choosing what to include, we keep these questions in mind:

Is it widely used? If a tool is popular, well-established, or widely used compared to others in its field, we're more likely to list it.

Is it affordable? Whenever possible, we look for tools that have a good free option. When we feature a paid tool, we do so because it's the only thing out there that does what it does, or it's so popular we think it's worth mentioning.

Is it educationally relevant? Anything could be considered educational in some way. But to keep this book manageable, we cut out tools that didn't have a pretty clear connection to education. Some tools, like [Snapchat](#), are here because they are so popular with students, we think teachers should be familiar with them.

Is it something a regular teacher would use?

There are so many expensive, whole-school solutions that perform all sorts of functions, but these are not the kinds of tools individual teachers have much say about. For that reason, these systems are not included here, keeping the guide dense with tools teachers can reasonably access and implement on their own. Generally, if a website says "request a demo," that tool is probably too big for this guide.

Along those same lines, we have also chosen not to feature sites whose primary offering

is exercises and videos of curriculum-based content, with the exception of the tools in the [Content Libraries](#) section, which were selected because they are not designed to replace whole curricula and because each one offers something unique.

One more thing: Inclusion in this guide does NOT constitute a recommendation. Our goal is to keep you informed about the tools that are out there and what they do. Always evaluate tools carefully before using them with students, and check with your IT department to make sure the tool falls within your school's policies for privacy and age restrictions.

To suggest a tool for a future guide, email support@cultofpedagogy.com.



New in 2023

When we update this guide each year, our team checks every page to make sure the links still work, the videos and screenshots still represent each tool accurately, and the information on features is still correct. Outdated links are fixed and information has been brought up to date as much as possible. Along with those updates, here are the bigger changes we made in this year's guide.

NEW WEBSITES, TOOLS, AND TERMS

Over 120 new listings have been added to this year's guide, bringing the grand total to 683 tools plus over 265 other alternatives listed as "similar." Most of the new listings are not actually brand-new tools, but this is the first time they are appearing in the guide.

NEW AND EXPANDED CATEGORIES

This year's four new categories are **Artificial Intelligence**, **Drama & Theater Arts**, **Early Learners**, and **Literacy**.

Inside **Flipped & Blended Learning** we've added a new feature on [microlearning](#), in **Language Study** there's a page of resources for teachers of [English learners](#), and in **Writing** there's a new section on [publication](#).

Finally, we've sprinkled a few **Lists of Ten** throughout the guide. These are curated lists of teaching-related resources that didn't quite fit in any category. The end of the table of contents has a list of these.

REORGANIZED TIPS

The [Tips](#) section has grown every year, and it was getting a bit jumbled, so we reorganized its contents into three subsections. First there's [Explore](#), with articles intended to stretch your thinking about how we use tech. Next is [Fine-Tune](#), where we look at guidelines for the ethical and effective use of tech. And [Troubleshoot](#) helps you solve tech-related problems.

REMOVED TOOLS

These tools have been removed because they have changed:

- **Bit.ai** in Curation has been removed. It seems more geared toward business users.
- **Google Duo** in Video Conferencing is no longer separate from Meet, so it is not listed separately.
- **Hippo Video** in Video Screencasting is directed more at business than education.
- **Peergrade** in Feedback is no longer a stand-alone tool. It is now part of Eduflow, which is in Flipped & Blended Learning.
- **Script** was listed as a payment processing tool in Fundraising, but it does not seem to support payment collection at this time.
- **Verso** in Teacher PD seems to be shifting toward student reflection. The site is hard to understand, so we're removing it for now.
- **Writing Sparks**, in Writing, now directs to a site called [Night Zookeeper](#), which seems to have a different focus.

These tools have been removed because they appear to have been shut down or their sites no longer seem active or well-supported:

- **Backchannel Chat**, Audience Response
- **Coach's Eye**, Physical Education
- **Doceri**, Presentation and Video Screencasting
- **Edmodo**, LMS
- **Explee**, Video Animation & Production
- **Freshgrade**, Digital Portfolios and Parent Engagement
- **Glogster**, Interactive Posters
- **Help a Teacher**, Fundraising
- **Makerspace for Education** and **Worlds of Learning**, Makerspaces
- **Seek** and **Tokotoko**, Virtual & Augmented Reality
- **Sqworl**, Curation
- **Synth**, Speaking & Discussion

MOVED AND RENAMED TOOLS

- **Adobe Captivate** was in the Video Screencasting section, but because it is more of a course management platform that happens to have a screencasting tool, we've moved it to Flipped & Blended Learning.
- **Adobe Creative Cloud Express**, in Art and Video Animation & Production, has shortened its name to **Adobe Express**.
- **Amira Reading** and **Readlee** have moved from Assessment to Literacy.
- **Big History Project** had its own listing in the History & Social Studies section, but this year it is part of **OER Project**, which includes Big History Project along with other history resources.
- **Clash**, in Video Live Streaming & Short Form, is now called **Huddles**.
- **Flipgrid** has shortened its name to **Flip**.
- **Flipsnack** was in Presentation but has been moved to Book Publishing because it's a better fit.
- **GradeCam**, in Assessment, has changed the name of its primary offering to **Gradient**. The company is still called GradeCam, but the tool is now Gradient.
- **Microsoft Office Lens**, in Special Ed/UDL, is now just **Microsoft Lens**.
- **Peergrade** is now a built-in part of **Eduflow**.
- **Reading Difficulty Power Tools** has been moved from Writing to Literacy.
- **Sown to Grow** has been moved from Assessment to Social & Emotional Learning.
- **Super Code Strike**, one of the coding sites listed in Makerspaces, has changed its name to **SCS**.
- **Virtual Job Shadow**, in Career Exploration, has now been absorbed into the larger platform **Pathful**.



Meet Our Team

Since 2015, I have been writing and updating this guide by myself. I got help here and there, mostly with individual sections that covered topics that were way out of my wheelhouse, but the task of checking every website, updating links, adding new tools, and pulling the whole thing together every year was on me. It got to be pretty overwhelming, taking nearly three months at the end of every year.

Finally, in the spring of 2021, I put out the call for help, seeking educators who not only knew

tech well, but also deeply understood teaching, learning, and how tech could enhance both. Over 100 exceptionally qualified people applied, and after much deliberation, I narrowed the field down to the four women you'll meet on the following pages.

Each person brings her own unique blend of tech expertise, pedagogical knowledge, and personality to this process. I have been out of the classroom for quite a while now, and much of the information I've brought to past editions of this guide has come from watching YouTube videos, reading tech companies' websites, and asking teachers about their experiences. Now I have the support of a team of people who work actively in schools, who have used many of these tools, have seen real teachers use them with their students, and will continue to hear about other tools every day as a normal part of their work.

As we move forward with future editions of the guide, I am excited to hand more responsibility for its development over to this team. I can say with confidence that you're in good hands.

Jennifer Gonzalez



Marnie Diem

Coordinator of
Technological
Adventures
Farmington Hills, MI
[@getteachingtech](#)

As a former classroom teacher, Marnie's 3rd and 4th grade classes were technology infused before technology was infusable. Her passion for teaching and technology led her to her current role at Hillel Day School, a pre-K-8th grade Jewish day school in Metro Detroit where she finds the magic places where technology and learning collide. A regular presenter at ed tech conferences, a MACUL Board Member, and certified and ambassadorized in a dozen ed tech tools, Marnie's ultimate goal is using tech to make curriculum come to life.

When she isn't tech-ing at school, she loves snuggling with her rescue pup, reading, and giggling with her nieces. She is currently on the quest for *good* gluten-free bread and a functioning time-turner.

Current Favorite Tech Tool: [Seesaw](#)



Brandie Wright

STEM Educator
Norfolk, VA
[@liveandmove](#)

Who would leave their thriving district career to become a classroom teacher? Someone with a passion for learning and a natural risk-taking mindset. Brandie Wright is that person. As an inquisitive, persistent, and innovative educator, Brandie brings experience plus her knowledge, wisdom, and authenticity to every classroom, meeting, training, and presentation.

When Brandie is not at school she loves teaching Christian dance fitness classes, music, cooking, watching movies, and trying new things. Thanks to her students she has expanded her playlist to include lo-fi, anime, and instrumental hip hop. She is known for asking lots of questions and provoking deep conversations. Brandie is also a proud mother of two college students.

Current Favorite Tech Tool: [Canva](#)



Kim Darche

Adjunct Professor
& 3rd Grade Teacher
New Lenox, IL
[@kimdarche](#)

Kim discovered her passion for supporting adult learners when she volunteered to teach computer classes for senior citizens in her parish circa Windows 95. Since then, she has not stopped. Kim's deep appreciation of questioning, researched-based instruction, and digital learning is what she brings to educators both in the hallways and the virtual spaces. She has been featured on podcasts and at conferences, written guest blog posts and chapters in books, but nothing is more fulfilling than a teacher reaching out years later to say "Remember when..." because it means she made a difference.

If Kim had a tagline like a Real Housewife, it might be: "My advice: Keep telling them you are funny, and one day they might believe you!"

Current Favorite Tech Tool: [TikTok](#)



Lucia Hassell

Director of Technology
Integration
Bethesda, MD
[@edtechdmv](#)

As an ambassador of meaningful technology integration, Lucia is passionate about using Google apps to improve workflows, encourage collaboration, and bridge the education equity gap. At Holton-Arms School, she teaches Design Tech Studio, a STEAM class where students learn to embrace the maker spirit.

Outside of the classroom, Lucia serves as an Affinity Group Facilitator with Holton's BIPOC students and is working with a group of teachers to develop curriculum for the 1619 Project Education Network. She is also the founder of the Howard University Quad Step Team, which has allowed her to mentor numerous college students since 2003 and leave a lasting imprint on her alma mater.

Current Favorite Tech Tool:

[1619 Project Pulitzer Center Resources](#)

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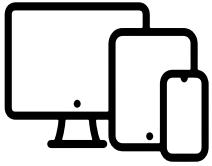
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EXPLORE

BIG THOUGHTS AND LITTLE QUESTIONS



Next-Level Ed Tech

WHERE ARE WE NOW?

WHERE ARE WE HEADED?

Technology has been with us for decades now. We've passed the point of trying to convince each other that using tech in schools can be beneficial. And we've made some good progress so far:

- We've figured out how to use tech to do things with more **ease** and **efficiency**.
- We continue to refine [norms and best practices](#) to ensure that our use of tech is responsible, ethical, and safe.
- We continue to seek ways to make tech more **accessible** and **equitable**, and use tech to make the world more accessible and equitable.

- And we consistently lean into the idea of **deepening** our use of tech — to have our students collaborate, innovate, and think critically with it, rather than simply replicating old modes of learning.

All of these are vitally important, and each one takes consistent practice, revisiting, and fine-tuning to get right and keep getting it right.

Now it's time to move beyond that. But to where? What new thing could be said about the intersection of tech and learning that hasn't already been said? What kind of call to action makes sense right now, at a time when technology is more amazing than ever, but the world feels so different than it did just a few years ago, a time when many schools report that student engagement and teacher satisfaction are at an all-time low, and some days it feels like everything we've come to know and trust is collapsing all around us?

A NEW METRIC: IMPACT

Perhaps the next thing we need to be thinking about is **impact**. What is all this work FOR? How can we take the things we create, the products

of our collaboration and critical thinking and creativity, the outputs of our innovation, and make an impact on the world around us?

The answer to that question can take a lot of different shapes; impact can be made with technology in so many ways. We'll look at just a few here.

1. STORYTELLING

We can use stories to raise awareness of important issues, to build bridges between communities that are divided, and to make people who often feel forgotten feel seen. Stories can be told through video, podcasts, blogs, digital books, even through interactive platforms like [Sutori](#).

Example: One group of students recorded interviews with older members of their families in a similar style to NPR's *StoryCorps* series. They then gave these recordings as gifts to their families. One former student contacted his teacher years later to say his family played the recorded interview of his grandmother at her Celebration of Life after she passed. Storytelling

projects can have incredible impact, and letting our students experience this will last well beyond the time they spend in our classrooms.

2. TEACHING

Tech can be used to teach others all kinds of things, and this can be accomplished through screencast or other videos, how-to guides, and attaching QR codes to physical objects that lead to digital instructions or other information.

Example: In a school that had a significant international population, students used [Screencastify](#) to create tutorial videos in Spanish, Romanian, Urdu, and Mandarin to help parents navigate the district’s website to find student report cards.

3. MAKING

With the help of 3D printing, coding, and augmented reality, we can create actual physical products that solve problems.

Example: When middle school students in a maker challenge learned that their teacher and her wheelchair-bound husband were expecting a baby, they [designed an attachment](#) that



would allow her husband to safely take the baby on walks (photo above). The design was then made available online for anyone who wanted to print it for their own use.

4. INFORMATION GATHERING

A tool as simple as a Google Form offers so many uses for information gathering, from collecting data in order to learn more about public opinion, better understand a particular issue, or offer channels for people seeking help.

Example: When students in an innovation course were tasked with finding ways to improve their community, some decided to tackle the problem of bullying and harassment that targeted LGBTQIA students. They are currently working on a reporting system where anyone

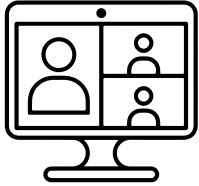
can report incidents through a Google Form and those reports will then be followed up on by the school administration.

5. MARKETING

Another way to make an impact with technology is by raising public awareness of special projects, initiatives, or problems through graphic design, video production, and social media.

Example: When elementary students learned that their local animal shelter was having trouble placing animals in good homes, they used their graphic design skills to create animal trading cards, which the shelter then used on its social media and on the animals’ crates to help “advertise” the pets that were ready for adoption.

Most teachers and students don’t have the time or resources to actually execute ideas like this on a regular basis. But what we *can* do, what requires almost no time or resources at all, is to make it a habit to *think* about impact as a next step, to consider how the things we learn in school don’t have to end there, and to figure out how tech can help us go further.



Virtual & Asynchronous Learning: Moving Forward

At the time of this publication, it's been nearly three years since COVID-19 sent us all inside our homes, and since then schools have had to bounce between different combinations of remote, in-person, or hybrid learning modes. Many more schools are currently back to full-time, in-person instruction, and although that shift hasn't been universal or consistent, it's probably safe to say we are no longer in

emergency mode. That gives us time and space to reflect on what we've learned and move forward armed with new tools and new wisdom.

Those new tools give us two modes of teaching that have not always been around: they let us do more teaching **virtually**, meaning we're not physically together in the same room, but interacting through videoconferencing and other kinds of software. This means we're no longer limited to one physical space. They also enable **asynchronous** learning, so we no longer have to be present at the same time in order to share a learning experience, but can participate at a time that works best for us.

Both of these modes offer advantages that can broaden our opportunities for teaching and learning; they also pose some potential problems if we aren't thoughtful about how we apply them. To that end, we offer six guidelines for virtual and asynchronous learning, followed by a list of the tools in this guide that are especially helpful when teaching virtually or asynchronously.

SIX GUIDELINES FOR VIRTUAL AND ASYNCHRONOUS LEARNING

These guidelines are not official; they have been gathered informally from Twitter, one-on-one conversations, and various articles online. They are simply our curation of some of the more frequent and enduring principles that have come from practicing teachers, experienced experts, and students themselves.

1. Relationships need extra attention.

Building relationships with and between our students has always been a cornerstone of good teaching. In traditional school settings, everyone is in the same building together, so personal connections and relationships are made organically. This is not the case when our interactions happen through video conferencing or on asynchronous platforms; many of us can end up feeling isolated and disconnected. When we are teaching virtually or asynchronously, it's vital that we take deliberate steps to build and maintain relationships.

WE ARE NO LONGER IN EMERGENCY MODE. THAT GIVES US TIME AND SPACE TO REFLECT ON WHAT WE'VE LEARNED AND MOVE FORWARD ARMED WITH NEW TOOLS AND NEW WISDOM.

For building your own relationships with students, read [Creating Moments of Genuine Connection Online](#). And to foster better relationships between students, read [Connecting Students in a Disconnected World](#).

2. Set high standards for video.

Because so much instruction has to be delivered through video, it's essential that we follow best practices for video creation. Find specific advice on these best practices in Kareem Farah's post, [Everything You Need to Know About Building a Great Screencast Video](#).

3. Less is more.

Remote and hybrid present their own time-consuming challenges, so we have to go for quality over quantity. The amount of work we assign, the number of communication platforms for parents, even the length of time spent on-camera should all be streamlined for best results. In [9 Ways Online Teaching Should be Different from Face-to-Face](#), blended learning coach Melanie Kitchen explains why.

4. Make face-to-face worth it.

Whether it's in a synchronous video conference or in a physical classroom, the time you spend face-to-face with students should be used for the kinds of activities that require that type of interaction, like discussion, games, active processing of the material, even socializing — not just more direct instruction and worksheets that could easily be done asynchronously.

5. Put students in cohorts.

In researching for the post [How to Teach When Everyone Is Scattered](#), the most frequent recommendation from teachers was to put

students into cohorts; in other words, assign them to groups that can work and consult with one another regularly. Doing this allows them to feel more connected and gives them support at times when you may not be available.

6. Pay attention to SEL.

If we learned anything from pandemic teaching, it's that mental health matters, both for our students and ourselves. So when you're planning lessons, be sure to build in regular time to check in with students and develop social-emotional skills. [This article](#) from Wendy Turner is a good place to start.

USING SWIVL FOR CONCURRENT SESSIONS

If you are teaching students at home and in-person simultaneously, you can set up a [Swivl](#) camera to follow you while you present, broadcasting the content that's on your computer in a separate screen. [Learn more here](#) about how this works.

TEACHING TOOLS FOR VIRTUAL AND ASYNCHRONOUS LEARNING

Since the height of the pandemic, most tools and platforms have made themselves more adaptable to virtual learning; if you have a tool you once loved face-to-face, chances are it now has an option for remote teaching as well. And while just about every tool in this guide can also be used for virtual learning, certain categories have proven to be especially helpful:

ASSESSMENT

When we can't assess students on paper or in person, these tools let us do it from afar. Setting up a self-scoring quiz on **Google Forms** is an incredibly fast way to gauge where students are.

AUDIENCE RESPONSE & BACKCHANNELS

These can add a lot more interactivity to video conferences. Set up a quick poll in **Slido** and add instant interest to any class meeting.

CONTENT LIBRARIES

These sites offer fantastic collections of curated texts, images, podcasts, and videos that can

easily be plugged into asynchronous lessons. For some really interesting reading, check out the articles on **Wonderopolis**.

FEEDBACK

The tools in this collection give us ways to offer written, voice, and video feedback to students. **WeVu** has an especially unique approach.

FLIPPED & BLENDED LEARNING

This section is custom-made for virtual and asynchronous teaching. **Mindstamp** offers creative ways to make videos more interactive.

GAMES

These offer a way to make class meetings (in person or through video conferencing) more fun and interactive. **Gimkit** has been a popular option in recent years.

PRESENTATION

Direct instruction is an essential part of virtual and asynchronous learning, and the tools in this section help you do it with style. For synchronous lessons, **Nearpod** and **Pear Deck** add interactive features to typical slideshows.

SCREENCASTING

If you're going to make videos out of any of those presentations, you need screencasting software to do it. **Loom** and **iorad** are two options you may not have tried.

SPEAKING & DISCUSSION

Even if face-to-face speaking is restricted, these tools give you and your students ways to have interesting conversations anyway. **Parlay** has a rich suite of tools for setting up and tracking the participation in a discussion.

VIDEO CONFERENCING

Without these tools, teaching virtually would be so different! A new collection of tools like **Frame** and **SoWork** have combined video conferencing with virtual reality to make participants feel more like they are interacting in a real physical space.



What Tool Should I Use?

My students really need to learn how to get organized and manage their time more effectively. Are there any tools that can help?

If you use Google Classroom, which many schools do, take a look at [Today](#), which works with Google Classroom to help students plan when they are going to do their assignments, estimate how long they will take, and track their progress. Classroom also integrates with Google Calendar: Students can click on the “to do” button in the top left corner of their main Google Classroom page and it will list all upcoming assignments and tasks.

I teach students for whom English is not their first language. Is there any way to convert a webpage to their native language?

Yes! Microsoft’s Immersive Reader makes this possible, either through the [Edge](#) browser or by using [this Chrome extension](#). Just right-click on the text and click “Read to Me.” Then in the settings, you can change the language that is being read to one of dozens of languages.

Our school is starting to focus a lot more on students’ emotional well-being. Are there any tech tools that could help us keep a closer eye on students emotionally?

Our [Social & Emotional Learning](#) section is full of tools that can help in this way; for checking in with students, take a look at [Along and Sown to Grow](#).

Do you know of any tools to help me increase student participation?

Yep. [Equity Maps](#) is designed to help you get a better sense of which students are participating in a discussion. ClassDojo, Class Charts, and Classcraft (all in the [Classroom Management](#) section) help you recognize positive behavior,

which could include participation. And all the [audience response systems](#) in this guide allow every student to participate at once.

My students and I need images for all kinds of projects. Where can we get them?

If you want to make your own, try an [art](#) tool or an [infographic](#) maker. To take photos on your own, try one of the [photo editing](#) tools to enhance it. And to find photos or other images created by others, check out our [Images & Icons](#) section.

When using images created by others, it’s important to understand copyright and licensing issues: Even though most of the work you and your students do will remain in school, understanding the law is smart in the long run. [This article](#) explains how to teach students to legally use images online.

A few years ago, my students and I were really into Kahoot!, but the thrill has kind of worn off. Can you suggest an alternative?

Absolutely! Explore the [Games](#) section to see all the fun games you could try.

I'm constantly typing on my computer or thumbing away on my phone. Are there any tools that let me use voice or video instead?

Yes! [Voxer](#), an incredibly easy voice messaging system, is a great substitute for emails. It allows you to chat with up to 15 people at a time and would work for conferencing with students, parents, or colleagues. [Kaizena](#) and [Mote](#) both let you give voice feedback on written work, instead of having to write it all out. If you use Google Docs or Slides, try using [voice typing](#) within those platforms.

I want to meet other educators who share my interests. What tools will help me do that?

[Twitter](#) is a great way to find other people who share your interests, especially if you participate in Twitter chats that focus on topics you care about. Learn more in the article, [So You Have a Twitter Account. Now What?](#) You might also check out two of the sites in our Teacher Professional Development section, [Fishbowl](#) and [Participate](#), both of which offer online communities of teachers where you can discuss specific issues, areas of interests, and even big concerns.

How do I get pictures or images to NOT have those white squares around them?

Use a website like [remove.bg](#) and upload your picture to make the background transparent.

I can't keep track of anything! My to-do lists are all over the place, and I have files and bookmarks on different computers. What can help me pull it all together?

[Evernote](#) is one of several tools designed to solve this problem. It gives you a cloud-based place to create and store notes, files, images, even websites. You can also create “checkable” to-do lists and scan receipts and other documents right into your notebooks. Two simpler options designed purely for to-do lists are [Google Keep](#) and [Microsoft To Do](#).

I want to be respectful of people's evenings and weekends, but I'm most productive at night. Is there any way I can delay my emails so they can be sent during work hours?

Try [Boomerang](#). It not only lets you delay your outgoing emails, but you can set specific hours for receiving them as well!

Remember chat rooms? I would love to be able to create private, online rooms where my students could have “chats” about class content. Does anything like that still exist?

Take a look at [YoTeach!](#), a free backchannel tool that sets up a web-based discussion in real time. You can also set something like this up in [Google Classroom](#).

Organizing class parties and parent conferences is so time-consuming! Is there anything out there that can make these processes easier?

Read about [ClassTag](#) and [SignUp.com](#) and this problem will be handled.

My students are so easily swayed by what they read online. Is there anything out there that can tell them if they are on an unreliable website?

Not exactly, but there are some great sites in our [Media & News Literacy](#) section that can help. Take a look at AllSides and ProCon.org, both of which offer reading material that represents a range of political biases for each topic.

Some of my students are showing a lot of aptitude for technology in general. How do I challenge them?

- For students who are detail-oriented and curious about how things work, suggest that they try some programming lessons on one of the [coding instruction](#) sites.
- Students who are confident speakers might enjoy learning how to [podcast](#).
- Students with skills in visual art, writing, or graphic design might like the challenge of building a website in [WordPress](#) or using [iMovie](#) to produce a movie.
- Finally, students who know certain tools very well can create video tutorials for the class using [screencasting](#) tools.

Sometimes I'll have a file, like a PDF, but I need it to be a different kind of file, like a Word doc. Do any tools do that?

Yes! Check out [Zamzar](#), a free site that can convert just about anything into just about anything, or [Media.io](#), which is specifically for audio and video files.

For my students who are hard of hearing or deaf, YouTube videos usually have good subtitles, but is there anything I can do to add close captioning to my teaching?

You can turn on live, auto-generated closed captions that work while you present in [Google Slides](#) and [PowerPoint](#). You can also generate captions to any live speaking presentation using [Web Captioner](#). Also, check out our writeup on Teach2Connect in the [Special Ed](#) section; they are all about working with deaf and hard of hearing students.

I teach pretty young kids. Are any of these tools appropriate for them?

Yes! We now have an entire section devoted to grades pre-K-3. Head over to [Early Learners](#) to explore these tools.

When I come across a great site, I sometimes wonder if there are other sites just like it. Is there any way to quickly find these?

If you're using the Chrome browser, you can try adding the [Google Similar Pages](#) extension. One click on this in your browser will give you a list of other sites similar to the one you're on.

Some of my students' parents don't speak English. Are there any tools that can help me communicate with them?

[TalkingPoints](#) is a parent communication app that can translate your messages into over 100 languages. For face-to-face communication, check out the instant translation offered by [Microsoft Translator](#).

I really miss assignment notebooks! What tool can my students use to create these digitally?

Try using [Google Keep](#). Students can make each note a different color for different subjects. With tools like voice recording, reminders and the capacity to add pictures to notes, it can help students get started on their work at home. For struggling students, they can add teachers as collaborators for check-ins.

Sometimes I want to give someone a link to a website, but it's too long to remember; is there any way to make this process easier?

You need a link shortener. We discuss these in the [QR Codes](#) section and the [Presentation](#) section.



Wonderings

I keep hearing about this new app that will write my students' papers for them. What's the deal?

[ChatGPT](#) has definitely gotten a lot of attention lately, and for good reason. We're still learning a lot about it ourselves. Head over to our [Artificial Intelligence](#) section to learn more.

More often lately, I hear and see people online say a link is "in their bio." Why is this?

Unlike Facebook and Twitter, where users can share links in every post, other platforms like Instagram and TikTok don't allow it. Users are only allowed to share one link one time: the link that's in their profile bio. Enter the *link-in-bio* tool, a website where you have one URL that goes to a page of lots of other links. [Linktree](#)

is one popular tool like this. If someone you're following is talking about something interesting and they say the link is in their bio, just go to their profile on that platform, click the one hyperlink that's there, and it will take you to a page of links. From there you should be able to find the thing you're looking for.

What exactly do people mean when they say they are social media "influencers"?

An influencer normally has a large group of followers on a social media platform so that when they recommend a product or idea they have the power to affect the purchasing decisions of others.

What the heck is an NFT?

It is a *non-fungible token*. "Non-fungible" more or less means that it's unique. Have you ever had a digital concert ticket? Then you have owned an NFT, because that image was unique. Artists are selling NFTs because they are unique digital art creations. But NFT doesn't end there. A bitcoin is an NFT. A special item won in Fortnite is an NFT. The first tweet ever made is an NFT, in fact, it sold for \$2.9 million! Learn more in [this video](#).

Why does every website ask me about cookies?

In May 2018, a law was put into effect in Europe called the General Data Protection Regulation (GDPR). This law is meant to give internet users more control over how their data is used. When the law went into effect, it impacted most of the internet, because even if a website isn't created in Europe, they all reach European citizens. GDPR required most websites to get users' consent for things like storing cookies, small text files that tell a website about you so they can tailor your viewing experience. Having to click that "accept" button everywhere you go is a pain, but ultimately it just means the website you're visiting is trying to obey the law. [Learn more about GDPR here.](#)

Some links look really different from what I'm used to; they start with bit.ly or ow.ly instead of www. Why?

Those are created with *link shorteners* like [Bitly](#), which are websites whose only job is to take your long URLs and shorten them into something that's easier to remember. These are especially useful in situations like conferences, when a speaker wants to give out a URL on a

slide, or on an advertisement, where the URL can't be clicked on. Using something short and simple makes it easier for people to find it.

I keep hearing different things about TikTok. I thought it was just for kids to make dancing videos, but some adults I know say they are addicted to it. What is that about?

It's definitely more than dancing videos now. With over a billion monthly active users, TikTok has become one of the most popular social media platforms out there. The biggest age group is 18- to 24-year-olds, but [11 percent of users are people over 50!](#) Learn more about why TikTok is so popular in [this article](#).

To use a new tool, I have to set up an account. Won't this generate a lot of unwanted emails or threaten my privacy?

Having multiple accounts is one inconvenient aspect of exploring technology, but you can take some steps to minimize the impact:

- Many platforms let you sign in using a Google or Facebook account; this cuts down on the passwords and usernames you have to remember.

- Create a separate email just for your tech accounts. Except for tools that require a school-based email for educator discounts, a separate account keeps your work inbox from getting cluttered with mailings from tech companies. Then unsubscribe from any emails you don't want to receive.

What does it mean to subscribe to someone's Substack?

[Substack](#) is a publishing platform where people create content, like blog posts, podcasts, and videos, but they are only available to paid monthly email subscribers. [This video](#) explains how it works.

When I click a link, sometimes I'm sent to a new tab, but other times the new page replaces the one I'm on. How can I get control of this?

Good news: *You* can force a link to open in a new tab or window. If you're on a PC, just right-click on your mouse when you hover over the link (use command-click on a Mac) and you'll get a pop-up menu of options. This will allow you to open the link in a new tab or window. On a smartphone, you may also be able to do this by holding down the link and waiting for this option to come up.

Where do people get those cartoon images of themselves?

Those are called *Bitmoji*, and people create them with an app by the same name. Once you have yours created, you can use it in emails, in texts, and on various social media platforms. Go to [bitmoji.com](#), download the app, then follow the steps in [this video](#).

What is blue light and why should I be concerned about it?

Blue light is a type of light emitted by computers and mobile devices. Too much exposure to it [can cause problems](#) with eye health and sleep. Fortunately, many tech companies have added mechanisms to turn off blue light on devices. [Learn more here](#).

What are Open Educational Resources?

These are teaching and learning resources, available online, that can be used or modified for free. In 2015, the U.S. Department of Education launched the #GoOpen movement to encourage schools to adopt these resources. Learn more about OERs in [this article](#).

I've heard Facebook has changed its name to Meta, but my account still says Facebook. Is it going to change?

The parent company changed its name to Meta, but as of right now, they say the app will keep its name. Learn more about the reason behind the name change [here](#).

Where do people get those cool fonts?

You can download free fonts from sites like [dafont.com](#) and [1001 Free Fonts](#). After downloading, you just install the font on your computer, and then it will appear in most of your programs. Follow these [instructions](#) for installing on a Mac or a PC. Be aware that free fonts are often only free for personal use. To use a font for a product you're going to sell, you usually [need to purchase a license](#). One option for free fonts, even for commercial products, is [Google Fonts](#).

How do I learn to use all these tools? Do I have to enroll in some sort of class?

Nope. That's the most wonderful thing about technology: You can teach yourself almost anything tech-related just by finding free video tutorials. Start by going to the tool's website

and look for a section called *Help*, *Support*, *Learn*, or *Knowledge Base*. These sections often have tutorials. If they don't have much, go straight to YouTube and start searching for “___ for beginners” or “Intro to ___.” If you find a good video, go to the video creator's channel and see if they have more.

For a more structured approach, consider [JumpStart](#), our hands-on technology course for teachers.

How DO people make those video tutorials?

They use screencasting tools. These tools record whatever is on your screen. Go [here](#) to read more about them.

Where do people get music for videos and podcasts?

That's a good question; using copyrighted music for these things is a big problem. If a person is following the rules, they will use royalty-free music. Head over to the [Podcasting](#) section for a full explanation.

Where do people get memes?

First of all, if you don't know what a meme is, [read this](#). So where do people get these? Some

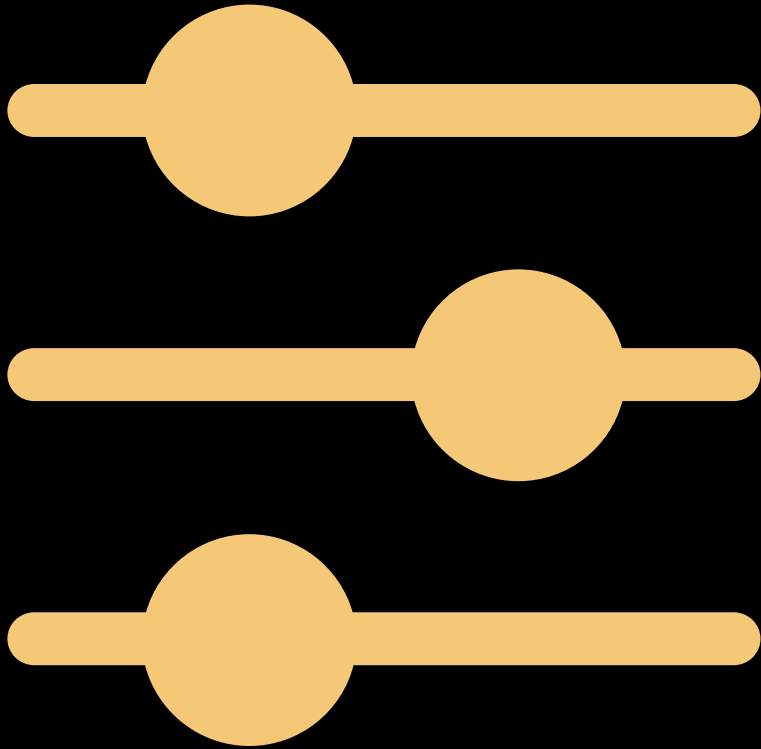
social media platforms now have built-in search engines for memes and GIFs. Otherwise, people either make their own or share them from meme-generating websites, like the ones listed in [this article](#).

I see people use abbreviations like AF, SMH and IRL and I can figure out some of them, but not all. Is there some kind of dictionary for these abbreviations?

Yes! One of the best resources for “real talk” definitions of terms people use is [Urban Dictionary](#), but be prepared for some very adult language and topics on this site. Another place to look for answers is this [text abbreviation list](#) that is regularly updated by Webopedia.

What is BeReal?

[BeReal](#) became a very popular social media app in 2022. The basic idea is that once a day, at random times, the app prompts all of its users to take a photo of whatever they happen to be doing at that exact moment. You have to use the camera — no uploading photos, no filters, no editing. It's supposed to be “real.” Users can only see their friends' BeReals if they post their own first.



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Know Your Legal Stuff 39

Using tech with students has its own set of rules.

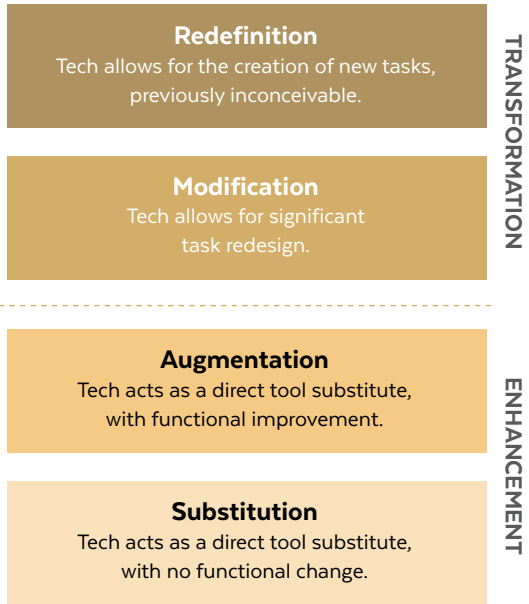
FINE-TUNE

ARE WE DOING THIS RIGHT?



Tech Standards: The “Big Four”

Not all tech use is created equal. In some classrooms, the technology is a distraction from the learning; in other rooms, it merely makes things faster or more efficient. And in others, it gives students experiences they would likely never have if it weren’t for the technology.



SAMR MODEL

In an effort to support educators in their quest for meaningful and impactful technology integration, experts have developed educational technology standards for teachers to use as a guide for their digital learning implementation. Let’s explore four of the most well-established standards — what we’re calling the Big Four.

SAMR

The **SAMR model** is a framework for technology integration developed by educator Dr. Ruben Puentedura. The model lays out four different levels of using technology for instructional purposes: **Substitution**, **Augmentation**, **Modification**, and **Redefinition**.

At the **Substitution** level, the tech takes the place of some tool we are already using.

Within the **Augmentation** level, the tech still acts as a substitution for a tool, but now it adds functional improvement.

Modification is the level where you are starting to actually change the learning task for students.

At the **Redefinition** level, students are performing a new task with the tech, something that would not be conceivable without the tool.

While SAMR has four levels, it is important to not think of it as a ladder to climb but rather as an ebb and flow, moving through each of the levels based on your instructional needs.

THE 4CS OF DIGITAL LEARNING

The 4Cs, part of the [P21 Framework for 21st Century Learning](#), began as a study to understand what skills would be most valuable to students while in school and beyond. What were companies and organizations seeking in their new hires? What was uncovered were 4Cs: **Critical Thinking**, **Communication**, **Collaboration**, and **Creativity**.



FRAMEWORK FOR 21ST CENTURY LEARNING

Critical thinking is the capacity to look at a problem or situation, analyze it, better understand it and possibly offer solutions.

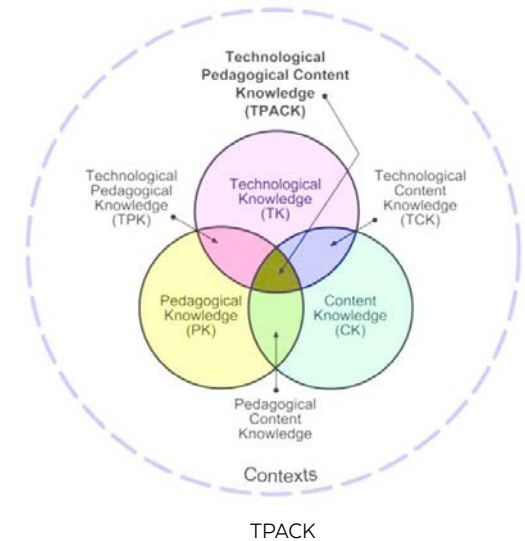
The skill of **communication** is more than just teaching students how to be active listeners or

participate in group discussions, it also seeks to support students with presenting information, composing emails, and even writing instant messages.

Collaboration moves beyond understanding group work for students. It focuses on the idea that working together produces an outcome that is greater than something one person can create individually. Building collaboration among students focuses on fostering questioning skills and understanding how to honor everyone’s thoughts instead of just one idea being “the best.”

The beauty of **creativity** is that it allows for the discovery of possibilities, and the opportunity to think beyond what is acceptable or traditional. However, it is not always a natural occurrence for students, or they may think “I can’t draw so I am not creative.” So similar to the other 4Cs skills, creativity has to be taught.

We cannot just expect students to be innately good at these skills. We must teach them. One way to support this growth is to build a classroom culture that embraces failure and reflection.



TPACK

TPACK is a technology integration framework that identifies three types of knowledge: **technological**, **pedagogical**, and **content**. This framework promotes the understanding that if a teacher intersects all three knowledge types, students will have optimal learning.

TPACK strives to help teachers not use technology for the sake of it being something cool in their classrooms. Rather this structure aims to illustrate the relationship between

blending technology with a firm understanding of a concept and best teaching practices.

For example, a well-practiced teaching strategy is a Socratic Seminar, when a small inner circle speaks while an outer circle listens in on the conversation. Educators could enhance this practice by using a backchannel discussion board like [YoTeach!](#) so the outside circle could have a silent conversation about the discussion and the teacher can monitor both chats checking for engagement and prompt questions to both groups in order to check for understanding.

ISTE STANDARDS

In 1998, the original ISTE Standards were written by the International Society for Technology in Education as a way to guide the education of students through technology.

Since the beginning, the standards have gone through many iterations and have developed into [multiple strands](#) including standards for students, teachers, education leaders, coaches, and most recently, Computational Thinking



ISTE STANDARDS FOR STUDENTS

Competencies. Each of these frameworks provides a roadmap for effectively leveraging technology in education.

Each strand of standards is broken down into components focusing on a variety of skills for their intended audience such as global leadership, collaboration, empowered learners, and analytics skills. According to ISTE, these standards are meant to ensure that learning experiences are “high-impact, sustainable, scalable and equitable” for all learners.

APPLYING THE STANDARDS IN YOUR OWN WORK

The scope of these standards can be quite overwhelming — attempting to align *all* of your tech-related planning with *all* of them would be difficult at best, and this may be something you simply don’t have time for. That doesn’t mean you’re failing! Instead, try treating the standards as refinement tools, ideals that you can reach for when you’re looking for ways to take your instruction to the next level.

So if you have a unit of instruction that hasn’t worked as well as you would have liked, consider whether something in one of these frameworks offers a way to make changes that will increase student engagement or improve learning outcomes. Or if you’re at the very early stages of planning a new unit, choose one of the big four to use as a guide as you think about how you might use technology in the lessons.

Finally, know that all of this is still evolving — what we prioritize in 10 years might be very different from what we do now. And that’s a good thing.



Quality-Check Your Tech: 6 Strategies

In schools, we use more tech tools every year. We also have very little time to vet them for quality. Do the math and you have a formula for some tech choices that may not be serving our students as well, or as equitably, as they should be served.

It’s easy to dismiss this as no big deal. So what if we occasionally adopt something that isn’t the very best choice? The answer depends on a few factors: Are we spending a lot of money

on the tool? Is it going to replace other learning experiences? Will it be time-consuming to adopt? Are we expecting it to close gaps and provide remediation? If the answer to any of these is yes, then it would definitely be a big deal if our chosen tool didn’t actually do what we thought it did. It would be an even bigger deal if that tool ended up widening the very gaps we were trying to close.

This is not to say that schools are just going about their tech decisions willy-nilly. Surely everyone is acting in good faith. But when all the tools seem ideal, when they all promise to solve our most persistent problems, it’s hard to figure out which one to pick. What we need is a framework for making these decisions, a set of practices that can help us determine which tool is really going to deliver on its promises.

Rupa Chandra Gupta, founder and CEO of [Sown to Grow](#), is hoping to contribute something to that framework. As a former school administrator and the head of an ed tech company, Gupta has been both a consumer and a producer; this has raised her awareness of the interplay between equity and technology.

Now she wants to hold herself and her peers to a higher standard when it comes to designing tools that meet the needs of more students.

Although Gupta is a believer in technology’s potential to boost learning, she has learned that it can also accelerate our mistakes. “Technology amplifies whatever is happening,” she says. “If we’re widening a gap, it can be amplified by technology, and it happens faster, and it happens sometimes under the radar, because teachers and students might not be having every interaction in person anymore.”

WHEN TECH FALLS SHORT

The earliest seeds of this idea were planted when Gupta was working for a middle school that was undergoing a lot of significant change. As part of their transformation, the school adopted a comprehensive, personalized learning platform.

At first, things seemed to be going fine, with students improving on benchmark assessments from fall to winter. “When we first pulled the numbers, if you looked at the average scores,

we saw pretty significant growth of students overall. Great, right? Everyone’s excited.”

But a closer look at the numbers uncovered a different story. “I disaggregated the data,” Gupta explains, “and what we found was our students entering sixth grade on or above grade level were soaring. They were doing incredibly well in that self-directed learning environment. But our students who were coming in behind grade level were actually falling further behind. Not just moving forward at a slower pace or even staying flat; they were falling further behind.”

Despite their investment of time and money into the platform, Gupta and her colleagues decided to stop using it. “There might have been some room to tweak and kind of modify,” Gupta says, “but the disparity was so wide that it was clear that we had to just stop.”

Obviously, this decision was inconvenient, and it left Gupta feeling that there had to be a better way, a more deliberate, systematic approach to evaluating tech before diving in. The following six strategies are what she suggests.

SIX STRATEGIES FOR DEEPLY ASSESSING TECH

Whether you’re considering a new tool or wondering whether a current one is really effective, these six strategies can help you make more informed decisions.

1. USE IT LIKE A STUDENT

Sign in as a student and go through all the core elements of a tool. Put yourself in the shoes of one of your higher performing students and one of your lower performing students. How does the tool respond when students make mistakes? Where are the challenges? How can you solve them?

2. LAUNCH A PILOT GROUP

Although using a tool “as” a student can uncover problems, nothing works better than putting it in the hands of real students. Instead of launching a platform school-wide, take the time to pilot it first with students.

Gather a diverse group for this — both high achievers and students who are likely to struggle, native English speakers and English learners, and students who come from varied

cultural and socioeconomic backgrounds — then pay attention to differences in how they are using, enjoying, and experiencing a product. Do they understand how to navigate inside the platform? Is the language used by the tool accessible to them? These kinds of questions should be considered before launching any kind of school-wide implementation.

Technology amplifies whatever is happening. If we’re widening a gap, technology will make it wider.

3. LOOK CLOSELY AT DATA

Although a tool might be giving you good results on the surface, your numbers could look different from another angle, so be sure to look closely.

“If you do get data from any tools that you’re using yourself or from other benchmark assessments,” Gupta says, “break down the results by different student populations. Look for unintentional widening of equity gaps.”

This scrutiny should also be applied to tools that might not be purely academic, like apps meant to increase parent involvement.

“I’ve seen digital portfolio apps that are beautiful and easy for kids to take pictures of their work and send home to parents and all of that,” Gupta says. “But I wonder: Is this a way for parents who are already engaged to get more engaged? Or is it really speaking to parents who we’ve been trying to bring into the fold? If parents don’t have smartphones and computers at home, can they access this stuff? If there is a subset of folks who aren’t able to engage or access, it’s probably folks who we want to make sure we’re not leaving behind, right?”

4. THINK ABOUT WHY

Ask yourself critical questions about how and why something works to improve student learning.

“How is this tool fundamentally changing something about teaching and learning?” Gupta says. “What is it about this that’s innovative or different? I think when you ask yourself those

questions, you can think about how that’ll play out for different groups of students. Is this tool truly changing learning experiences, or is it just a worksheet in an online format?”

Is this tool truly changing learning experiences, or is it just a worksheet in an online format?

5. ASK ABOUT IMPACT

If you spend a few minutes on an ed tech company’s website, you’re likely to find statistics about the tool’s effectiveness. Gupta has noticed that these numbers are rarely disaggregated by different levels of learners.

“There’s not nearly enough transparent information about this,” she says. “So I would put the burden on people like me who are building tools. Ask them about evidence of impact in working with different types of learners. Like, ‘tell me what the difference is between these different types of students I serve.’ And if you don’t know, how are you going to find out?”

6. FOLLOW YOUR GUT

“Experienced educators have such an amazing sense for what’s going to work well for their students in their context,” Gupta says. “So trust your gut.” Listening to your gut can prompt you to take a closer look and follow through with the other steps listed above.

Does this mean you have to stop using a favorite tool? Not necessarily. “None of this is intended to suggest that teachers stop using things they like,” Gupta says. “It’s more like okay, this is making me nervous about X, Y, and Z. What scaffolds am I going to put into place? It’s meant to make sure that this thinking is a part of the protocol when you are testing new tools and ideas. Because if we can elevate it in conversation, then I think it’s more likely that the whole system will adjust to make sure it’s elevated in importance, right?”

This article originally appeared on Cult of Pedagogy along with a podcast interview with Rupa Chandra Gupta. To access both, [click here](#).



Know Your Legal Stuff

Knowing the tools is one thing. Knowing the laws that surround those tools is something else entirely. There is a heightened awareness around student data privacy and if we will be using these tools in our teaching and learning, we need to know what the law requires of us.

In this section, we will review the major tech-related laws and what they mean for you and your students. Keep in mind that this is just an overview. The internet is constantly changing, and so are the laws associated with its use. For more complete information on each of the laws, please check the links provided or talk with the student privacy expert at your school.

CIPA

Children’s Internet Protection Act

The Children’s Internet Protection Act, a federal law enacted in 2005, affects schools and libraries that receive e-rate discounts for internet access or internal connections. Schools and libraries must adopt internet policies to protect minors from obscene or harmful content while accessing the internet.

Schools and libraries must adopt policies of protection by providing a blocking or filtering of internet access to pictures that are obscene, contain child pornography, or may be harmful to minors. Schools need at least one public meeting about their policy, must certify that those policies monitor minors’ online activities, and must include lessons to minors in appropriate online behavior. This would include lessons that teach such things as interacting with others on social networking websites, email, and chat rooms; hacking or unauthorized access by minors; protection of personal information; and cyberbullying awareness and response.

PTAC: AN ONLINE HUB FOR STUDENT PRIVACY INFORMATION

The Privacy Technical Assistance Center ([PTAC](#)) was created by the U.S. Department of Education as a “one-stop” resource for education stakeholders to learn about data privacy, confidentiality, and other practices related to student privacy online. PTAC offers free training materials and other resources, like this [video](#) on cybersecurity best practices for schools and districts.

CIPA compliance is not only required for telecommunications service. Filtering or blocking protections can be disabled for adult access for research or other lawful purposes. The internet use by minors or adults need NOT be tracked.

For teachers, this means that when using internet tools in the classroom, use tools and websites whose content is appropriate for

minors, include internet safety and anti-bullying lessons and expectations, and follow your school’s Internet Protection Policy.

Learn More About CIPA:

- [FCC Consumer Guide to CIPA](#)
- [Common Sense E-rate Toolkit for Administrators and Teachers](#)
- FCC Administration of E-rate is through [Universal Service Administrative Company](#)

COPPA

Children’s Online Privacy Protection Act

[COPPA](#) regulates what websites, online services, mobile apps, and extensions or plug-ins can collect from children under the age of 13. This includes sites for children and those for general audiences. Its purpose is to put parents in control of what information is gathered about their children. Sites or apps that allow users under age 13 must not collect any personal information without verifiable parental consent. “Personal information” includes full name,

address, email or other online identifier, or photos, videos, or audio with a child’s image or voice, among other things.

COPPA-compliant websites must clearly link to their online privacy policy and include:

- Name, address, telephone, email of all collecting operators of the website – or a contact person for parents after listing all operators
- Description of collected information, if it is public, how that information is used, and how it is disclosed
- Procedures for parents to review or delete the personal information and refuse further collection or use

COPPA compliance also requires:

- Providing direct notice to parents and obtaining verifiable parental consent
- Providing parental choice in use of child’s information, but prohibiting disclosure to third parties (unless required service, which must be made clear)

- Maintaining confidentiality, security, and integrity of the information collected
- Retaining information only for as long as is needed, deleting to prevent unauthorized access or use when no longer needed

In 2019, after Google and YouTube were [sued by the FTC](#) for COPPA violations, YouTube made two changes to its platform: (1) YouTube creators are now required to [mark their videos](#) as “directed to children” if kids are the video’s intended audience. (2) YouTube Kids was [launched](#). This new platform only offers content that’s intended for kids and it gives parents the ability to restrict content for their children.

One interesting thing to note about the YouTube case is that the government is now including the comment section of any website when deciding whether that site is complying with the law. Users can inadvertently include personal information in their comments, which can then be collected by the website. For this reason, the new [YouTube Kids](#) does not have a commenting feature for its videos.

Schools, school districts, and teachers may act as a parent’s agent and can consent to such collection of information for educational purposes to benefit the student and the school. The consent cannot be given for use of the information for commercial purposes. Such websites and apps must provide and comply with the COPPA requirements.

Best practice for schools is to develop Acceptable Use Policies for Internet Use to educate parents, list the online services, and obtain permission from parents. The online service assumes the school collects permission as the service’s verification when the school accepts its COPPA-compliant terms. Schools should develop procedures for teachers to apply for use of online services. Finally, acceptable use policies and links to online services and their policies should be listed on the school’s website. The school should provide the links and obtain new permission signatures annually.

Teachers who sign students up as parental agents must verify that the sites and apps are COPPA- and FERPA-compliant; the site’s website must have clearly marked links to their

contacts and privacy policies for the teacher to read to verify compliance. Look for Terms of Service (TOS) and Privacy Policies for each site or app. [See this sample privacy statement](#) from Flip.

Learn More About COPPA:

- [COPPA Information from the FTC](#)
- [The FTC Updates to the COPPA FAQs](#)
- [COPPA 101 for Schools](#)

FERPA Family Educational Rights and Privacy Act

This [federal law](#) protects the privacy of student education records. It applies to all schools receiving funds from applicable programs of the U.S. Department of Education. Parents have certain rights, which transfer to students when the student reaches the age of 18.

An educational record is one directly pertaining to a student in any form, including grades, class lists, report cards, transcripts, schedules, health records, financial records, and discipline records.

Parent rights, briefly, include:

- Inspection of student education records
- Requesting corrections to records (or receive a hearing)
- Giving permission for release of student records

Schools must protect the privacy of students, releasing records only with permission or according to the exceptions. Schools may share, without consent, certain “directory” information (name, address, phone number, date and place of birth, etc.), but must allow adequate notification to parents of such information and the opportunity by families to request the information not be disclosed. This must be done annually in a form of the school’s choice. For a model notification form, click [here](#).

Schools are also required to put their FERPA information on their school website. Teachers must be aware of student privacy guidelines and of the school’s policies. When using websites and tools, students’ personally identifiable information must be protected.

Learn More About FERPA:

- [Read the full regulation here](#)
- [FERPA 101: A free online course](#)

PPRA ▶**Protection of Pupil Rights Amendment**

A federal law since 1978 for K-12 institutions, PPRA protects students from the collection of data about them or their families in surveys or evaluations that ask for information on any of the following areas, unless provided by the U.S. Department of Education:

- Political affiliations
- Mental or psychological problems
- Sex behavior or attitudes
- Illegal, anti-social, self-incriminating, or demeaning behavior
- Appraisals of other individuals closely related
- Legally recognized privileged relationships (lawyers, ministers, doctors)

- Religious practices or beliefs
- Income (except as required for eligibility)

Schools must develop and work with parents on policies that protect parental rights of notification, inspection, opting-out, disclosures, or marketing instruments. The law also covers certain physical exams.

Teachers must check any tool or website that may be asking for personally identifiable information or any of the eight protected areas. Even paper or audio-visual materials must not gather such information. Book clubs, magazines, student recognition programs, and student fundraisers for school are some of the exceptions for gathering information for that particular situation. Refer to guidelines for exact exceptions.

Learn More About PPRA:

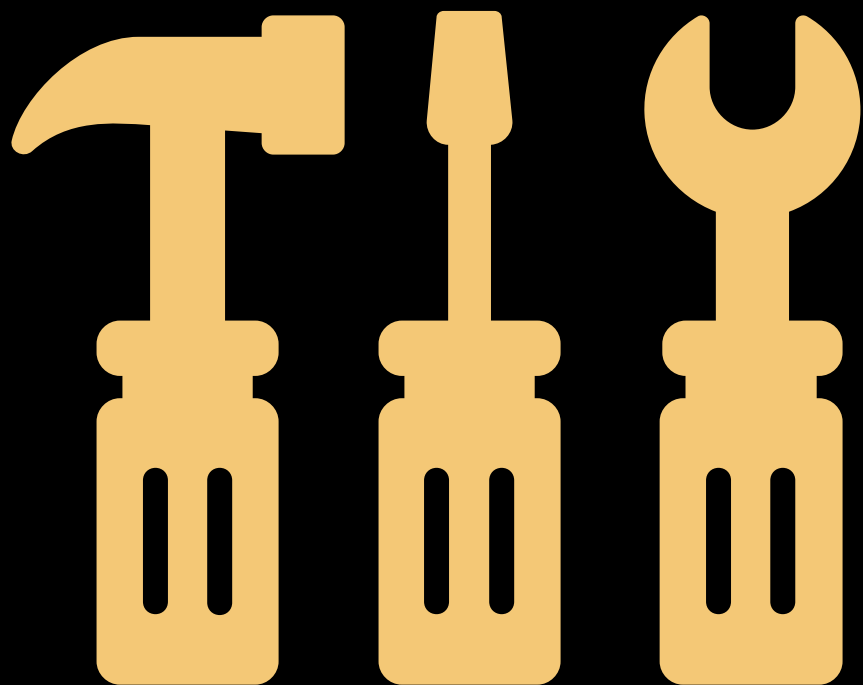
- [Summary of PPRA Requirements](#)

**PRIVACY AND AGE LIMITS:
DIFFERENT FOR EVERY TOOL**

Every platform deals with student use in different ways. Always check Terms of Service and Privacy Policy pages for age restrictions, requirements for parent permission, and information about what data is collected, how the company stores the data and what they plan on doing with the data. [Here's an example from Zoom.](#) You can find these statements at the very bottom of most websites; if not, do a quick search for “privacy statement” on the site. And always check with your district’s technology department for the process your district uses to protect children online.

KNOW YOUR STATE LAWS

This section only covers U.S. federal laws. Many states have their own legislation to protect student data and privacy online, like [SOPPA](#) in Illinois, [SOPIPA](#) in California, and New York’s [Education Law 2-D](#). To learn about your state, visit [this website](#).



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Technology is amazing. Except when it isn't.

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One of these ideas may help improve access at your school.

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A few other issues that may come up.

TROUBLESHOOT

WHAT TO DO WHEN THINGS GO WRONG



How to Do Tech Without Losing Your Mind

Technology can be tricky even for the most tech-savvy person, and if you don't have a good plan, you might give up before you ever really get started. These seven steps will give you a framework for adding more technology to your teaching practice without a lot of unnecessary stress.

STEP 1: GET CLEAR ON THE REASON.

Before you adopt a new tool, figure out why you want to use it. Some reasons are sound and will lead to success:

- The tool could solve a problem for you.
- It may boost learning for some kids.
- It could save you time or stress.
- It may give you access to new skills, people, or information.
- It looks like fun. If the tool could engage students and keep them learning, it's worth a try.

Then there are the not-so-good reasons:

- You feel pressure to use the tool because people keep talking about it.
- You feel like you should use *some* technology; it might as well be this.
- It looks fun. A time-consuming tech tool with no connection to learning will take too much time away from instruction.

It's essential to start with your learning objectives. Before you even consider technology, think about what you want students to know or be able to do by the time the lesson is over. Then consider how technology could

Before you even consider technology, think about what you want students to know or be able to do by the time the lesson is over.

help you reach those goals more effectively: Can this tool help your students develop measurable, content-based skills in a way that's more authentic, lasting, expedient, or engaging than the way you'd ordinarily do it? Or will it enable you to grow professionally in a way that would be much harder without it? Then it's worth a try.

Any time you feel things are taking too long or getting too frustrating, ask yourself whether you're still heading toward meeting those learning goals. If you're not, it's time to change course.

STEP 2: GET IN THE RIGHT MINDSET.

Succeeding with tech requires a ton of flexibility and patience. Most people who get good at it have a few mindsets in common, and if you can adopt them yourself, you'll be able to navigate the terrain of new technology more deftly.

- **Things WILL go wrong.** Expecting and dealing with problems and setbacks, rather than getting thrown into a tizzy by them, makes it easier to persevere.
- **Reboot and undo.** When something goes wrong, know that many problems can be solved by simply restarting a program or a device. And before you let a big mistake discourage you, look for the “undo” button: In many programs, there's a way to reverse that terrible thing you just did.

- **Phone a friend.** It's not possible to know everything, so get comfortable with asking for help from colleagues, friends, and students. Don't let the fear of looking ignorant stop you. And if the person you ask seems bothered, then look for others who are happy to share what they know.
- **Let's just try it.** The only way a person gets better at working with technology is by trying stuff. They don't wait for the full day of training. They sign up, log in, and get their hands dirty.

STEP 3: START SMALL (AND LOW-RISK).

Small wins equal greater confidence, so start with a tool that's easy. Some good options are [QR codes](#) and [YoTeach!](#). But before you start, read the next step.

STEP 4: FIND THE VIDEO TUTORIAL.

Ninety-five percent of what you can learn about technology is available in free video tutorials. These videos teach you exactly how to use tech

tools—an experienced user uses the tools right on your screen and talks you through each step. To find good ones, go to YouTube and search with any of these phrases, (fill in the blank with the name of your tool):

- How to use _____
- _____ for beginners
- _____ tutorial
- Introduction to _____

If you get a lot of results, look for ones that have a lot of views and were made within the last year. You may have to watch the first minute of a video to figure out if it's going to be helpful. If it's not, it might be best to move on; there are probably better ones out there.

Many tools also have their own collection of tutorials right on their website; just look for a section called *Support*, *Help*, *Learn*, or *Knowledge Base*.

STEP 5: DO TEST RUNS.

Even if you're armed with the best instructions, things will still go wrong in class. To avoid watching a class period waste away while you and your students frown at screens, trying to figure out why something isn't working, do a few test runs before launching a new tool.

- Start with your own test. For student-facing tools, set up a fake student account and go back and forth between being the teacher and being the student. This will help you understand how the tool functions from a student's perspective.
- Try the tool on the devices students will use. If your home computer is a PC, but your school is Mac, get on a Mac and see how the tool works. If students will be using iPads, try it on an iPad.
- Do another test run with a small group of students; or, if you teach multiple classes, start off using the tool with just one class.

Whatever you do, don't use regular class time, *with the whole class*, to try something out for

the first time. You'll end up frustrated, way behind schedule, and more convinced than ever that technology just isn't worth the trouble.

STEP 6: PREPARE FOR SETBACKS.

The first few times you use a new tool, have some safety nets in place in case things don't go according to plan.

- If possible, prepare a paper version of the activity, in case the tool doesn't work or the internet goes out.
- If the whole lesson depends entirely on a tool, have an alternate activity ready.
- Have someone in your building (or a tech-savvy student) on call to assist you if needed.

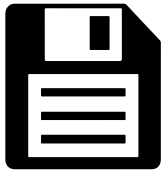
STEP 7: REFLECT AND RECALIBRATE.

Once you've used the tool long enough to get semi-competent with it, where you're past the most frustrating part and you and your students can get basic use from it, take a moment to reflect on whether it's living up to its promise.

Tech implementation is an ongoing process, and you shouldn't feel you have to stick with something forever just because you invested time in learning it. If this tool isn't really paying off, consider these questions to figure out why:

- Are you using enough features to get the best from it? Do you or your students need more training?
- Have your needs changed? Is the tool not what you thought it was?
- Compared with how you used to perform this task, have you seen improvements with this tool? If not, you might need more time with it OR it might be time to drop it.

Whatever you do, don't give up. Even if you only add one or two tools, you'll get a real sense of satisfaction from it, a feeling of strength that just might make you start seeing yourself as a bit of a techie.



When Your School is Short on Tech

This article was published in 2017, long before we had to scramble to get everyone connected for remote learning. With that said, some schools and homes still lack the technology that would help them operate well in today's world; therefore, these suggestions still apply.

While some schools have a device for every student, others don't even have reliable internet access, let alone enough devices for students to use.

This issue has a name: It's called **digital equity**. Just like with books, science equipment, extracurricular options, and healthy, fresh food in the cafeteria, technology is now another resource that's abundant in well-funded schools and lacking in underfunded schools, creating one more way some students will fall behind their peers.

If you're in a school where technology is in short supply, and you believe your students are falling behind because of it, one of the 11 ideas offered here may help to improve access to tech in your school.

TWO QUESTIONS TO CONSIDER

Start by asking yourself these two questions:

First, does a regular classroom teacher have the power to give students more access to technology in a whole school? This may be the thing that is holding you back, the reason

you haven't done more than shake your head at your school's lack of tech. You're "just a teacher." You have no control over the school's budget. You can't change the tax laws in your community. But you may have more power than you realize.

Your administrators are doing the best they can with the knowledge and money they have, but technology is just one small piece of all the stuff they're responsible for. If you and a small group of your colleagues committed yourselves to improving your school's tech infrastructure, to identifying which changes would make the biggest impact and figuring out how to fund them, your administrator would be crazy to turn you down. It's definitely worth a shot. A serious, carefully planned shot.

Which brings us to the second question: **Will having more technology automatically improve student learning at your school?**

The answer to this is definitely NO. Just boosting bandwidth or adding more devices will not magically improve the education you offer. You need a better plan than that.

Start by getting very clear on the learning goals you're hoping to achieve with more technology. What is the end goal? What will teachers and students be able to do with more tech that they can't do now?

Here are some important things technology can do to improve learning. Consider whether your plan embraces some or all of these:

- Technology increases opportunities for **students to take ownership of their learning** through self-paced models, inquiry-driven projects, and authentic tasks that allow them to engage with content in ways that reflect its use in the real world.
- Technology **allows teachers to assess student learning** more efficiently and effectively so that they can differentiate instruction and challenge every student appropriately.
- Technology **provides students with more flexible options**, so they can learn at school and at home, developing habits that will equip them to become lifelong learners.

- Technology **gives students tools to create original products and share them with the world**. Rather than simply doing tasks “for school,” they can pursue their talents and passions and share their work in communities of real artists, writers, filmmakers, photographers, journalists, scientists, historians, designers, and engineers.
- If your plan for increased technology doesn't allow for much of this, you may want to rethink things first. These standards for [educators](#) and [students](#), put out by the International Society for Technology in Education (ISTE), would be a good place to start when crafting a vision for your school.

So let's explore some of the creative ways schools are addressing the digital divide. The solutions are in three groups: work-arounds, fundraising ideas, and off-campus solutions.

WORK-AROUNDS

These are the fastest to implement: Rather than attempt to change the amount of tech your

school has, these work-arounds will help you make the most of what you do have.

1. Create centers or stations where students take turns using single devices. These might be permanent centers that students can access at any time, or centers that are part of a specific station-rotation model. You might have devices set to specific sites or programs or create a physical menu of options students can use during their time at that center.

- Even if your classroom only has a single computer, you can get a lot out of it by setting up guidelines and routines to make sure students know how and when to use it. Also check out these resources:
- [Blended Learning with Catlin Tucker](#): This seven-video series by McGraw-Hill Education provides an excellent overview of how to set up and run a blended learning environment in your classroom. Tucker walks the viewer through specific stations so you can get an up-close look at what students actually do at each one, along with how tech is integrated into some of them,

which will help you imagine how you might do the same in your classroom.

- [Spruce Up Your Centers with Technology](#): This blog post and video by Tony Vincent offers specific instructions for setting up technology-driven centers, including which programs and tools you can use to create videos, provide instructions for stations, and give students opportunities to be creative.

2. Implement a Bring Your Own Device (BYOD) program that allows students to bring devices from home for use in school. This can quickly increase the number of devices in your school without the need for any increased funding.

If you choose this route, do it carefully: Without a clear plan in place, a BYOD program can cause lots of problems. Two resources that can help are listed below. They include advice on getting buy-in from parents, creating an acceptable use policy, and making sure your school network can handle increased use by more devices.

- [9 Best Practices for Getting Started with BYOD](#) published by Edmentum



The Learning Center at Big Walnut Middle School in Sunbury, OH

- [BYOD Guidebook](#) published by ClassLink

3. Use minimum-tech tools that only require the teacher to have a device:

[Plickers](#) allows teachers to scan responses that students hold up on paper sheets; only one device required.

[Gradient](#) lets teachers create paper answer sheets that can be scanned with a single device.

[Discovery Education](#) offers free virtual field trips that only require one device.

4. Create a tech hub at your school where most devices are kept in one central location.

Students then go to the hub to use the devices, which ensures they are put to maximum use and rarely ever sit idle.

Check out [this story](#) about the Learning Center at Big Walnut Middle School. What was once an

underutilized library turned into an essential, active part of the school once tech resources were centralized and a system was created for teachers to send students there to work on specific tasks.

FUNDRAISING IDEAS

5. Raise funds through crowdfunding sites like [DonorsChoose](#). With this approach, teachers often target specific hardware that they'd like for their classroom, such as a collection of Chromebooks. See more examples of successfully funded projects [here](#).

6. Partner with local businesses and organizations to raise funds and provide better access. [This Cincinnati high school](#) partnered with the local phone company to get devices and tutoring for students.

7. Apply for grants. This is one of the more difficult ways to go about raising funds, but if you learn how to do it, it can be a great source.

- [This guide](#) from Education World offers good advice for successful grant writing.
- Check out [this list](#) of government grants.

OFF-CAMPUS SOLUTIONS

When technology is limited at school, it is often limited at home as well, which can put students at a further disadvantage. When addressing digital inequities in your school, think beyond the boundaries of your campus.



8. Portable Wi-Fi hotspots can be checked out by students, giving them internet access in homes that otherwise wouldn't have any. [Kajeet](#) offers the [SmartSpot](#), which can be filtered so that students can only access educational content. This [Wisconsin high school](#) used Kajeet to provide at-home internet to students, and a growing number of [public libraries](#) are checking them out to community members.

9. Wi-Fi enabled school buses, which [Kajeet](#) also offers, allow students to get work done on the ride to and from school. The Wi-Fi signal

from these buses can reach a surrounding neighborhood, which [has enabled more families](#) to get internet access over the past few years.

10. Summer device check-out programs allow students without devices to check out school-owned devices and continue their access over the summer months. Read about how [this Kansas school district](#) did it.

11. Build community connectivity. Districts can work toward setting up [Wi-Fi kiosks](#) in local neighborhoods. Organizations like [EveryoneOn](#) work to get low-cost internet, refurbished devices, and computer literacy training to unconnected families. If you pool resources from everywhere in your community, [like this North Carolina town did](#), you'll not only build greater capacity for student learning; you'll create more opportunity for everyone.



Other Troubleshooting Tips

Technology is rarely trouble-free. In this section, we'll look at some common problems with managing tech in the classroom.

Sometimes I go to a website and it appears to be down. I can't tell if it's gone forever or just temporarily broken.

There are websites that are designed specifically for this issue. Just type the URL into [is it down](#) or [Down for Everyone or Just Me](#) to see if the problem is everywhere or just on your computer.

My students plagiarize and borrow images from the internet. How can I teach them to respect the intellectual property of others?

Some students who do this honestly don't know better. If we explicitly teach them ethical practices, more of them are more likely to do the right thing. These two articles can help:

- [Teaching Students to Avoid Plagiarism](#)
- [Teaching Students to Legally Use Images Online](#)

Sometimes when I open a link someone shares to a Google Doc, I can't find it in my school Drive, but it's in my personal one instead. What happened?

You were logged into your personal account when you clicked the link. To avoid this, try setting up different Chrome profiles and switching between them. [Learn how here.](#)

I have so many tabs open! How can I get them under control?

If you're using Google Chrome, try the [OneTab](#) extension, which gathers all your open tabs

and puts them into a list without closing them. Another option is to group tabs: Right click on any open tab in Chrome and choose Add Tab to New Group. Name your tab group and drag coordinating tabs into groups. It is so cool.

YouTube is no longer working like it did!

Students can no longer view many of the videos we use, and the students' YouTube channels are all locked up. What's going on?

In September 2021, Google tightened its security to better protect users under 18 from objectionable content. This made some big changes to their access to YouTube through Google Workspace for Education accounts. Fortunately, schools can manually change these settings for their users. [This article](#) outlines the changes and explains how your school can adjust its settings. (By the way, this change also took away access to [Blogger](#), so if your students were using that for blogging, you'll have to find a different tool. [Edublogs](#) is a good option.) Keep in mind that [YouTube Kids](#) is still available to everyone, offering only videos made for kids and giving parents more control over content.

I get that cell phones and other devices can have instructional value in class, but they cause so many problems in mine! How can I keep my students focused?

This is a problem so many teachers deal with, and there are lots of great ideas for solving it. These articles offer thoughtful suggestions:

- [A Cell Phone Policy that Actually Works!](#)
- [3 Tips for Managing Phone Use in Class](#)
- [Creating a Cellphone Policy that Works for Everyone](#)

The Wi-Fi in our school is unreliable. How can I plan internet-dependent lessons?

If you have a smartphone, you can use it as a Wi-Fi hotspot. Although some phone plans restrict this and tethering can drain your battery and data plan, it is an option for short-term use. To learn more, read [this article](#).

You also might want to check out [Kajeet](#), which provides portable Wi-Fi hotspots to schools.

How can I choose the right tech tools if I don't have time to research them?

Consider turning this into an independent project for tech-savvy students. Give them your parameters (what the tool should be able to do, price, compatibility with your school's hardware), then have students present you with the three best options. This task engages higher-order thinking skills, including analysis (choosing the tools), presentation (informing you of their choices), and argument (convincing you that their choice is the best).

Our issue is money. All these tools sound great, but our district just can't afford them.

See our section on [what to do when your school is short on tech](#) for ideas that can help with this.

It is so annoying to get all those email responses when people hit "reply all" instead of "reply." How do I avoid doing that to people?

All email platforms have the option to default to "reply" or "reply all." Look in your email settings under *default reply settings*.

I can't get to the next line in Google Sheets; it just keeps going down into the next cell!

First, make sure you are clicked in the cell. Mac users: Hold down the Control key and press Enter. Windows and Chromebook users: Hold the ALT key and press Enter.

Sometimes I think I might be wasting my time trying out lots of new tools. How do I make sure I'm using tech thoughtfully, focusing on learning and not using tech just for tech's sake?

Our online course, [JumpStart](#) shows teachers how to focus on the learning process first, then apply tools to enhance that learning.

THE TOOLS

A

Animated GIFs
Art & Graphic Design
Artificial Intelligence
Assessment
Audience Response
& Backchannels

B

Blogging &
Website Building
Book Publishing

C

Career Exploration
Classroom Management
Cloud Storage
Collaboration &
Project Management
Comic Strip Creators
Content Libraries
Curation

D

Digital Literacy
Digital Portfolios
Drama & Theater Arts

E

Early Learners

F

Feedback
Financial Literacy
Flashcard Creators
Flipped & Blended Learning
Fundraising &
Payment Processing

G

Games
Global Learning

H

History & Social Studies

I

Images & Icons
Infographics
Interactive Lessons
Interactive Posters

K

Keyboarding

L

Language Study
Learning Management
Systems
Literacy

M

Makerspaces
Math
Media & News Literacy
Mind Mapping
Music

N

Notetaking

P

Parent Engagement
Photo Editing
Physical Education
Podcasting
Presentation
Productivity & Planning

Q

QR Codes

R

Research

S

Science
Social & Emotional Learning
Social Justice
& Anti-Racism
Social Media
Speaking & Discussion
Special Ed/UDL
Spreadsheets
Survey Tools

T

Teacher Professional
Development

V

Video: Animation
& Production
Video Conferencing
Video: Live Streaming
& Short Form
Video: Screencasting
Virtual & Augmented
Reality
Vocabulary Builders

W

Writing



Animated GIFs

You've seen them on social media: those super-fast videos that are little more than a person making a facial expression or an animation that takes just a few seconds. These are animated GIFs. GIF stands for graphics interchange format; an animated GIF is a set of images coded to display in a specific order, giving the appearance of movement.


While you may have shared animated GIFs yourself, you may not have ever made one. The tools listed in the box above will help you

GIF-MAKING TOOLS

Brush Ninja 
brush.ninja

Ezgif 
ezgif.com

GIFMaker.net 
gifmaker.net

GIPHY 
giphy.com

Imgflip 
imgflip.com/gif-maker

Kapwing 
kapwing.com/gif-maker

Tall Tweets 
talltweets.com

Visme 
visme.co/gif-maker

do that. But why would you want to make one? What is the educational value of these animations? Here are a few ideas:

- Show the steps of a math problem
- Demonstrate steps for technology use with a series of animated GIFs embedded on a website
- Illustrate physics concepts
- Demonstrate movement patterns for physical education
- Add humor and novelty to a lesson
- Challenge students to tell a very short story using an animated GIF
- Demonstrate art procedures
- Use GIFs as writing or discussion prompts
- Use GIFs as an aid in vocabulary instruction, to enhance the definition of a word



Art & Graphic Design

The tools in this section may be used by art teachers or by teachers whose students need to create art as part of other projects. As students use more digital tools to demonstrate learning, they'll need art to make those products come to life: Presentations, videos, books, and podcasts all need cover art, and social media posts rely on visuals to complement written text.

Paint, paper, clay, pencils, and canvases are still very much in use, and technology hasn't changed that, but it has tweaked it some. Digital tools offer an incredible range of "materials" that don't require space, are safe from wear and tear, and give us and our students greater capacity to express ourselves and share our work with the world.

This section is not a comprehensive guide to all the digital art tools available: There are SO many apps that make art, so consider this a sampling of what's out there. Also, we have not included more than a quick mention of sites that offer art instruction – there are way too many fantastic YouTube channels and websites to even begin trying to sort through them. So for now we're just sticking to tools that help us create art.

Be sure to check out the other sections in this guide that would be outstanding for art instruction: [blogging](#) and [digital portfolios](#) offer platforms to showcase student art, and [photo editing](#) tools help photographers and students showcase art through photography, like sculptors. For art history, check out the resources at Google Arts & Culture, featured in our [History & Social Studies](#) section.

DISCOVER ART IDEAS

Walk into an art teacher's classroom and you might wonder "Where did they get that idea?" Here are a few places to discover the magic:

- Join Facebook groups, search for podcasts, or follow a hashtag on social media

(Instagram is a treasure trove of ideas) like [#arteducation](#), [#artteacher](#), [#arted](#), [#artteachersofinstagram](#).

- Lean on inspiration from art teachers like [Tricia Fuglestad](#), [The Arty Teacher](#), [Art with Mrs. Nguyen](#), or Davis' [Curator's Corner](#) to name a few of MANY.
- Explore websites like [Doodles Academy](#), which offers a comprehensive art curriculum and contests!

JUST FOR FUN: ART MEETS AI

[Quick, Draw!](#) is Google's experiment with art and artificial intelligence (AI). By doodling pictures on demand, you're teaching the site how to recognize hand-drawn images.

With [AutoDraw](#), you start drawing, and the platform guesses what you're trying to draw, offering you a library of clip art to choose from.



ADOBE TOOLS

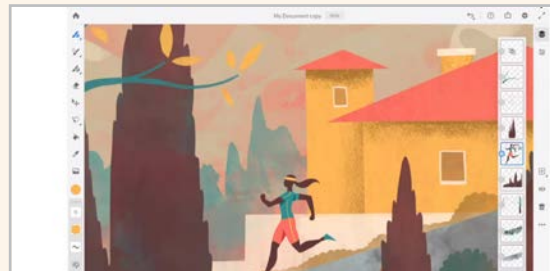
Adobe has a huge collection of excellent tools for drawing, video editing, web design, and more. These include [Illustrator](#), their industry-leading illustration and graphic design software, and the photo editor [Photoshop](#), which many artists use right along with Illustrator. These premium products are only available by paying monthly for individual tools or a [Creative Cloud](#) subscription, which gives you access to Adobe's full suite. Fortunately, you can get a taste of what Adobe has to offer through a few free apps; the two tools at right are the free (or free to start) apps for artists.



Adobe Express

adobe.com/express

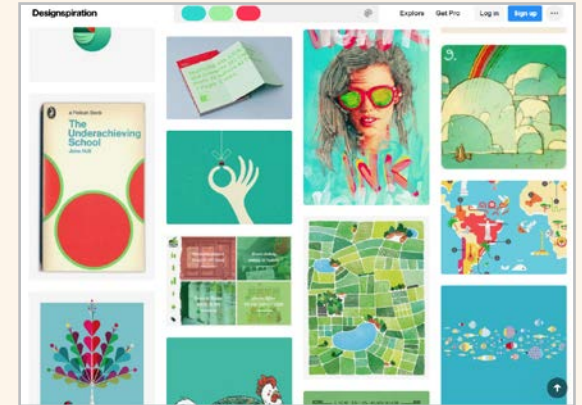
This graphic design app is similar to Canva, offering a library of templates, fonts, and stock images to help you create stunning visuals.



Adobe Fresco

adobe.com/products/fresco.html

This drawing and painting app was built for touch and stylus platforms like iPads.



LIKE PINTEREST FOR ART

Built to help creators organize and share ideas, [Designspiration](#) lets you create and curate digital mood/vision boards. You can search for design inspiration and follow collections from around the world. Upgrade to the pro version to use the visual bookmarking tool which allows you to save creative ideas, inspiration, colors, links, notes and screenshots from the web.

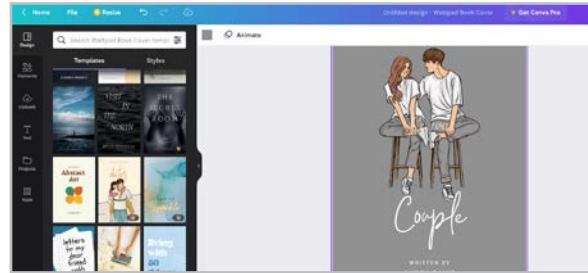
Adobe Tools | Assembly | Canva | Fresh Paint | Google Art Tools | Krita | MediBang Paint | Paper | Procreate | Sketchbook | Sketchpad



Assembly

pixiteapps.com/assembly

This free graphic design app, loaded with fun design tools, is currently available for iOS devices only.



Canva

canva.com

This graphic design site offers hundreds of templates and start-from-scratch design.

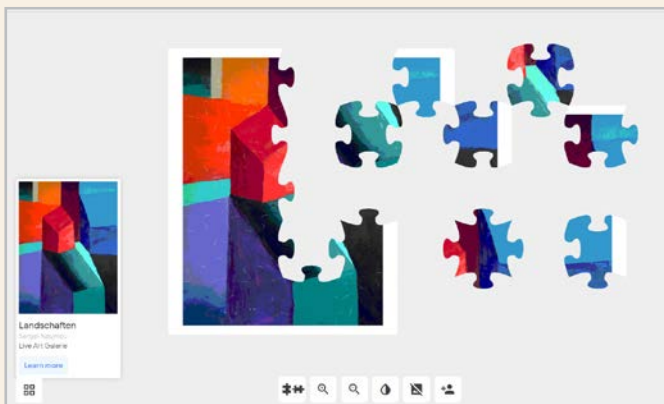
Similar: [Desygner](#)



Fresh Paint

microsoft.com/p/fresh-paint/9wzdncrfjb13

This drawing tool for Windows-based devices is great for artists of any age; it's a good choice for younger users. Newest update: 3D models!



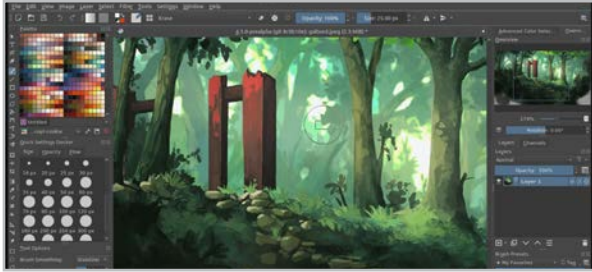
GOOGLE ART TOOLS

Google offers all kinds of ways you can create with their tools:

- [Google Drawings](#) is a drawing tool, part of Google Workspace. You can even draw from inside a Google Doc or Slides file.
- [Google Chrome Canvas](#) is a free drawing tool built right into the Chrome browser; it auto-saves drawings into Drive.

- [Arts & Culture Experiments](#) offers fascinating interactive activities like [Puzzle Party](#) and [Art Coloring Book](#).
- Learn how to make pixel art in Google Sheets in [this article](#) by Alice Keeler.
- [Shapegrams](#) is Tony Vincent's collection of mini-projects to teach you how to use Google Drawings.

Adobe Tools | Assembly | Canva | Fresh Paint | Google Art Tools | Krita | MediBang Paint | Paper | Procreate | Sketchbook | Sketchpad



Krita
krita.org

This site was made by artists for artists, offering everything you need to create online for free.

Similar: [Inkscape](#)



MediBang Paint
medibangpaint.com/en

This free drawing and painting app has special tools for drawing Manga art.

Similar: [Clip Studio Paint](#)



Paper
wetansfer.com/paper

This iOS app, formerly known as Paper 53, is a popular sketching tool.

Similar: [ArtRage](#) (Android)



Procreate
procreate.art/ipad

Although this iPad app is not free, it does offer incredible features and its newest update supports remarkable 3D drawing.



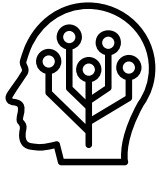
Sketchbook
sketchbook.com

This free drawing tool (still referred to as Autodesk Sketchbook by some) is available for iOS, Android, Windows, and Mac.



Sketchpad
sketch.io/sketchpad

Sketchpad is a free, simple, versatile, web-based illustration tool. It's great for beginners and artists on a budget.



Artificial Intelligence

Alexa, how many ounces in a cup?

Hey Siri, set a timer for 30 minutes.

Google, how do you say “How can I help you” in Spanish?

Most people interact with some form of artificial intelligence every day, from the time they first wake up and use FaceID to unlock their phone to all the times they use the backup camera in their car. Without truly knowing what happens behind the scenes, we make a request and trust the answer provided by artificial intelligence because AI is all around us. The tools featured in this section are just a sample of what has shown

up in this space in recent years; as more tools emerge, this section is likely to expand.

Before we look at the tools, let’s define AI and explore how it can impact our work in education.

WHAT IS ARTIFICIAL INTELLIGENCE?

According to [Brittanica](#), artificial intelligence is “the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings.” AI pioneer [John McCarthy](#) defines it as “the science and engineering of creating computer programs that can imitate human intelligence.” Put even more simply, AI is a computer learning to think or act like a human being.

In an effort to bring structure to how educators approach AI, the organization [AI4K12](#) has developed a set of guidelines built around what they call the [Five Big Ideas in AI](#):

1. **Perception:** The idea the computers perceive the world using sensors.
2. **Representation & Reasoning:** In AI, computers build representations or models of objects in the world and use those models for reasoning.

TRY THIS!

If you want to dip your toe into the pool of AI, explore one of these fun AI-inspired experiences — no experience necessary.

- Try your hand at conducting an orchestra using [Google’s Semi-Conductor](#).
- Create an original piece of art using [Deep Dream Generator](#) by combining your thoughts with inspiration from famous artists, or upload your art and let AI do the rest.
- Prepare for a quiz by creating a [blueprint](#) for Alexa to quiz you using flashcards or asking questions.
- Create your own [chatbot](#) by coding a character to respond to prompts using Scratch platform.
- See how quickly a computer can guess what you’re drawing on the platform [Quick, Draw!](#)

3. **Learning:** Computers can learn from data and therefore improve over time.
4. **Natural Interaction:** Ideally, AI will interact with humans the way humans do.
5. **Societal Impact:** AI can impact society in positive and negative ways.

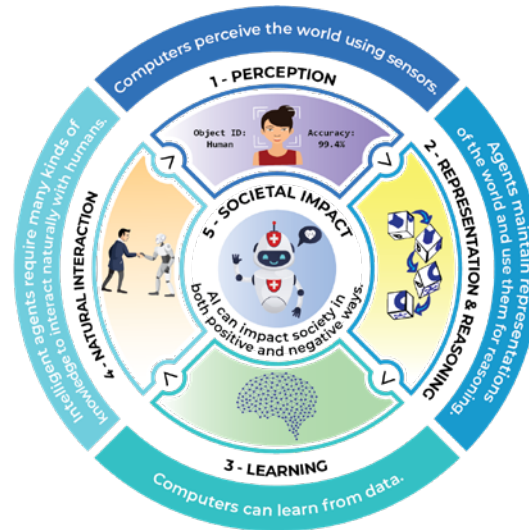
HOW AI CAN SUPPORT LEARNING IN SCHOOL

There is no content that can't benefit from a little AI. It can give a basic lesson an instant upgrade of engagement. Here are a few examples:

Art: Choose from one of the many artistic AI activities using [TensorFlow.js](#) to create or remix your favorite beats and sounds.

Assessment: Use [Quillionz](#) to generate multiple-choice questions.

Computer Science: Integrate AI with Computer Science standards using this [Exploring CS Artificial Intelligence Unit](#) from ECS.



The 5 Big Ideas of AI from [AI4K12](#)

History/Social Studies: Research and discuss a historical figure or event as a part of this [deepfake AI lesson](#) from MIT App Inventor.

Language: Use [Microsoft Translator](#) to automatically translate your spoken presentation into one of many languages.

Literacy: [Amira Learning](#) and [Readlee](#) use AI to assess students' reading skills.

Productivity: The Responsible tool in [Boomerang](#) can help you compose emails more efficiently.

Special Ed: The Empowered Brain goggles from [Brain Power](#) help students with autism to better learn social cues, and [Creatability](#) helps people with special needs create art and music.

Writing: [Grammarly](#), [Hemingway Editor](#), and [Wordtune](#) all use AI to improve your writing.

Find more ideas in [these guides](#) for hands-on AI projects from ISTE and General Motors.

WHERE TO LEARN MORE

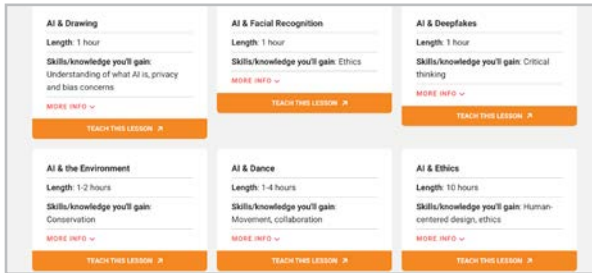
[AI4K12](#)

[DAIly Curriculum from MIT](#)

[IBM Webinars on AI](#)

[ISTE AI Explorations Course](#)

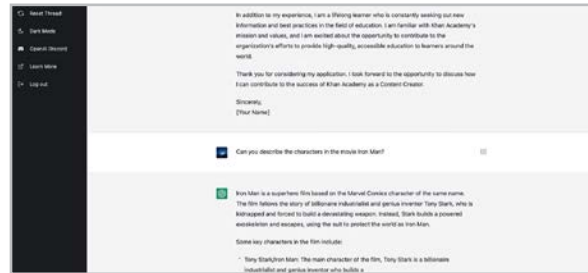
[Learn AI with Google](#)



AI4All

ai-4-all.org/resources

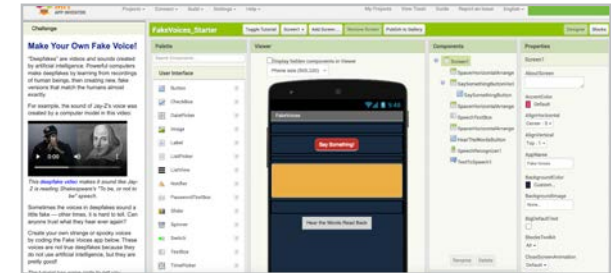
Click and teach an AI lesson directly from this website. The entire lesson is added to your Google Drive and they align with the major curriculum standards.



ChatGPT

chat.openai.com

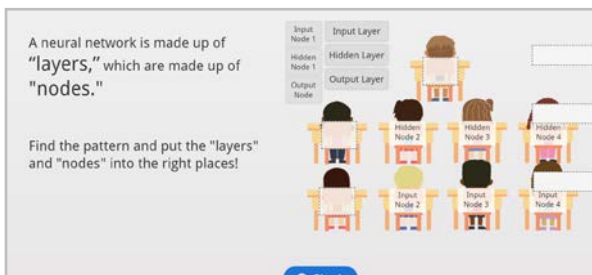
This jaw-dropping tool uses machine learning to compose just about any piece of writing you tell it to. Watch the video to see it in action!



MIT App Inventor

appinventor.mit.edu/explore/ai-with-mit-app-inventor

This site (also in our [coding](#) section) is not only for AI but has many lessons to create apps that use AI. They offer tutorials and cross-curricular lessons to integrate AI in various ways.

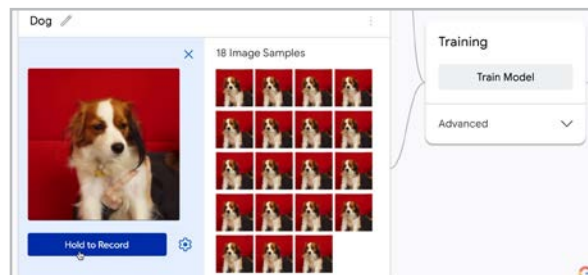


ReadyAI

readyai.org

ReadyAI provides courses, books, and summer camps for teaching AI to grades K-12.

Similar: [IBM SkillsBuild](#)



Teachable Machine

teachablemachine.withgoogle.com

Upload images, sounds, or movement to train your computer to tell the difference between what it sees and hears.

THE ETHICS OF CHATGPT

Should AI be allowed to respond to an AP exam prompt or scholarship essay? **ChatGPT** (above) has provoked extreme reactions from educators and businesses like [Google](#) due to the ethical implications of using it.

[This article](#) suggests ways teachers can work with ChatGPT to help students become better writers and discusses potential ethical problems with the tool.



Assessment

Measuring student understanding is essential for good instruction. If you can figure out exactly which students “get it” and which ones don’t, or which parts of your content are clear and which parts aren’t, you can fine-tune your teaching and differentiate instruction.

Most teachers have a range of methods for assessing student learning, many of which are not digital. But in recent years, some pretty incredible tools have come along to make the process more thorough and efficient.

What you’ll find here are nine assessment tools, along with links to other tools that perform a

similar function. To help you sort through them, we’ve put them into broad categories below, based on their strongest capabilities:

Multiple Choice & Forced-Answer Tests

Google Forms
Gradient (formerly GradeCam)
Plickers

Real-Time Formative Assessment

Classtime
Edulastic
Formative
Ziptet

Rubric Management

Doctopus & Goobric

Tracking Progress Over Time

Kiddom

In last year’s guide, we featured a few tools that are made specifically for reading assessment.

Those have now been moved to our brand-new [Literacy](#) section.

NEED A RUBRIC?

[Quick Rubric](#), a really nice rubric creator, makes rubric building fast and visually appealing.

WRITE BETTER QUESTIONS

[Quillionz](#) uses artificial intelligence (AI) to help you write better test questions. Upload or paste your content into the platform, choose key words, then wait as Quillionz generates multiple choice, short answer, and basic recall questions you can choose from.

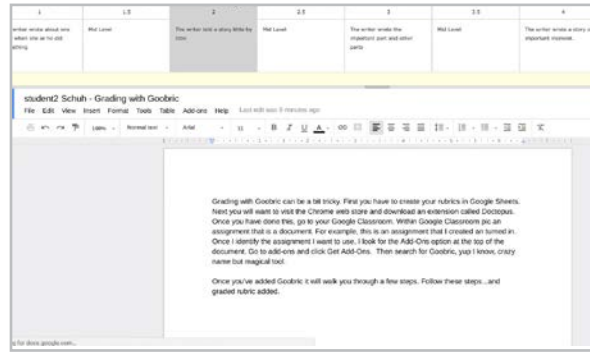
ASSESS THE WHOLE CLASS

Some of the [audience response](#) tools in the following section allow you to check the understanding of a whole class at once.



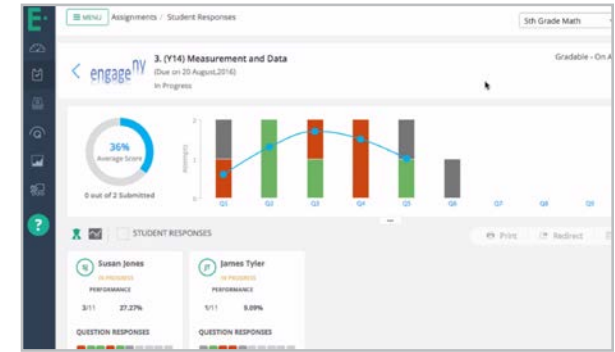
Classime
classtime.com

With a database of more than 50,000 questions, Classtime provides an at-your-fingertips tool for real-time assessment. Questions are curriculum-aligned and make for an engaging assessment. Teachers can use pre-created sets or create their own, and deploy them to students on any internet-connected device. Classtime auto-scores student work and provides data instantly.



Doctopus & Goobric
See below for links.

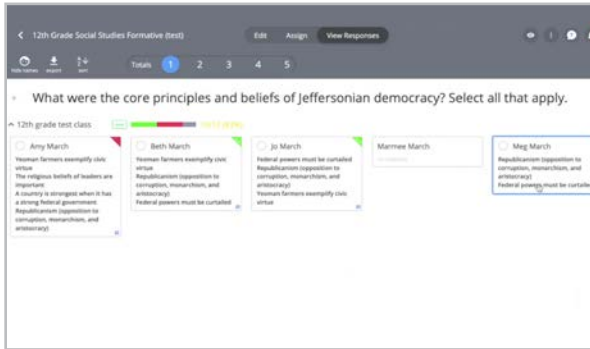
Doctopus, an add-on for [Google Sheets](#), helps teachers manage documents more easily. Goobric, a [Chrome extension](#), works with Doctopus to integrate rubrics into the assessment process, allowing teachers to more quickly use rubrics to assess student work and add their own written and voice comments. Many who use this combination say it works best inside Google Classroom. Both tools are free for Google Workspace users.



Edulastic
edulastic.com

This site offers a massive bank of standards-aligned questions teachers can pull from to create formative assessments. As students take the assessment, teachers get the results in real time, allowing them to make instructional decisions right away. Edulastic even has an option, similar to [Gradient](#), where teachers can give a paper-based test and scan the answer sheet with a smartphone.

Classtime | Doctopus & Goobric | Edulastic | Formative | Google Forms | Gradient | Kiddom | Plickers | Ziptet

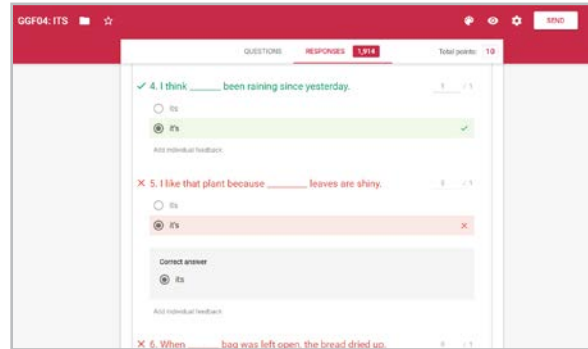


Formative

goformative.com

With this tool, teachers can see multiple responses to an assessment in real time (the image above shows five students' responses). This includes open-ended and hand-drawn responses. You can create your own quizzes inside the platform, upload your own file, or use something from Formative's library of assessments created by other educators.

Similar: [Classkick](#), [Pear Deck](#)

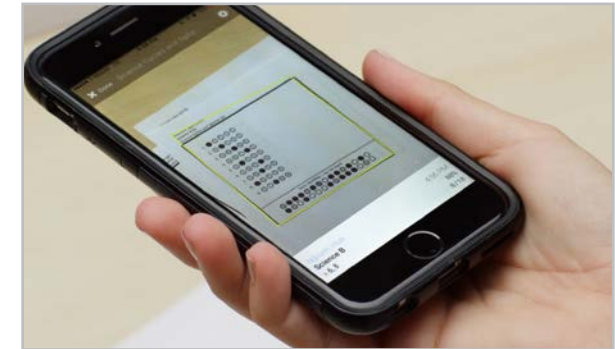


Google Forms

google.com/forms/about

Although Google Forms was originally designed for surveys, you can also use it to create quizzes. Quiz items come in multiple choice, checkboxes, linear scales, grids, short answer, or long answer form. When students take the quiz, Forms will automatically grade every response that has a correct answer identified. If you assign essay questions or open-ended questions, you can grade those manually after the auto-grading is done.

Similar: [Microsoft Forms](#)



Gradient

gradecam.com

The new name for GradeCam's primary offering, this tool does what [Scantron](#) does, but without the need for any special equipment: Students take quizzes on printable response sheets, then the teacher scans the sheets with a webcam, smartphone, or document camera, and the scores automatically appear on the teacher dashboard. From there, scores can then be imported into most electronic gradebooks.

Similar: [Quick Key](#), [ZipGrade](#)



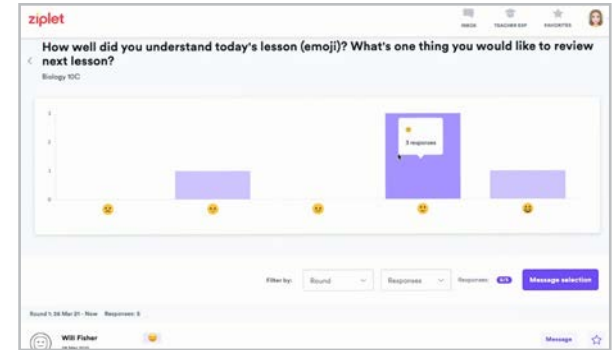
Kiddom
kiddom.co

Kiddom allows you to track student assignments along with the standards they assess for, then access a range of data reports that tell you who’s mastered the standards and who needs more help. Their library of standards-aligned lessons, including full-course [digital curricula](#), makes it easy to meet curricular goals and differentiate instruction. Teachers can collaborate and co-plan right on the platform.



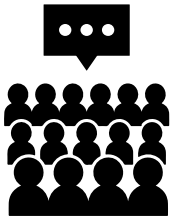
Plickers
plickers.com

A smart solution for schools that are short on technology, Plickers is an app you put on a handheld device. Using an assessment that you pre-load, students respond by holding up their own unique paper card one of four ways to indicate a response of A, B, C, or D. Next, you scan the room with your device, reading all student responses in a few seconds. Plickers will then give you a results report that can inform your next instructional steps.



Ziptet
ziptet.com

This platform makes it so simple for teachers to create quick exit tickets or formative assessments on the fly. Students don’t even need their own account—they join the assessment with a pin code, enter their name, and go! In addition to content-specific assessment, Ziptet is great for getting a feel of the class climate, checking in on SEL needs, and more.



Audience Response & Backchannels

For many educators, at least part of the job includes lecturing to an audience, whether in a classroom, an auditorium, or via videoconferencing. And one big drawback of lectures is the fact that the communication is one-way by default.

The tools in this section change that dynamic by giving audience members the ability to participate more actively and engage with the lecturer without interrupting the presentation.

Most of these tools are controlled primarily by the presenter: The speaker creates a poll or asks a question, the audience responds through their own devices, and the results are displayed on the presenter's screen for everyone in the room to see. These tools provide an excellent vehicle for real-time feedback, brainstorming, and formative assessment.

One of the tools in this section, **YoTeach!**, serves more as a backchannel — like a “chat room” participants can enter to have an ongoing conversation during another event or presentation. These can be useful when the presenter wants the audience to be able to interact with one another, but doesn't necessarily plan to take questions or poll the audience. Backchannels can also be used to allow students to silently ask each other

questions while watching a video or during a period of quiet independent work in your classroom.

Many of us had our first backchannel experience on a site called Today'sMeet, but they shut down in 2018. Since then, YoTeach! has proven to offer the most similar experience.

AUDIENCE RESPONSE IN GOOGLE SLIDES

If you're a [Google Slides](#) user, you can easily add audience participation by using the [Q&A](#) feature that's built into Slides. Simply show your audience members the unique link assigned to your session, then view and respond to written questions as they come in. Questions can also be upvoted by other audience members, allowing you to respond to the most popular questions.



AnswerGarden
answergarden.ch

With this free tool, you ask your audience a question that can be answered with a single word or short phrase, they respond through a web link, QR code, or AnswerGarden’s iOS app, and their answers begin to populate on a display screen in a word cloud. The words that are submitted most often will appear as the largest in the cloud. This is a handy tool to use if you want to brainstorm with a group.



Poll Everywhere
polleverywhere.com

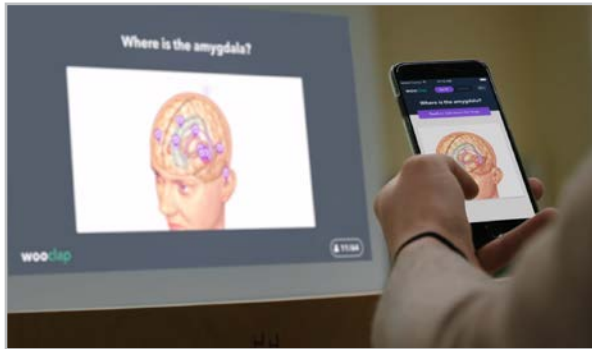
The first company to offer an alternative to [clickers](#), Poll Everywhere started as a service that allowed students to respond to a poll via text message. Now students can also respond through a web browser or through Poll Everywhere’s mobile app. Polls include multiple choice, ranking polls, clickable image polls, and questions that include LaTeX syntax and alphabets from world languages.

Similar: [Mentimeter](#), [Top Hat](#)



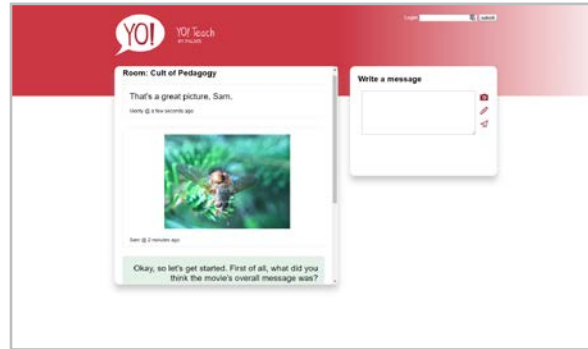
Slido
slido.com

With Slido, the audience can submit questions through a regular web browser using a unique event code. The questions that appear on the presenter’s screen can be upvoted by other participants, moving the most popular questions to the top. Once a question has been answered, the presenter can remove it from the queue. Slido also offers audience polling with multiple choice and word cloud options.



Wooclap
wooclap.com

Designed for higher education and business use, but perfectly suited for middle school and up, this platform equips presenters with a huge range of options for audience engagement: multiple-choice, rating, ranking, and poll questions, items that ask them to pick a spot on an image, word clouds, even open-ended questions. Participants respond through smartphones, tablets, or computers, and results appear instantly on the presenter’s screen.



YoTeach!
yoteachapp.com

With this tool — which saved the day after Today’sMeet closed — you can quickly set up an online chat “room,” making it password-protected or public. Have students enter with their own devices by going to the room’s URL, or create a QR code that will send them straight there. Once inside, students can comment, upload photos, or use the pen feature to draw or write by hand.

MORE BACKCHANNEL OPTIONS IN THIS GUIDE

Many teachers leverage [Google Classroom](#) as an alternative backchannel. Being a part of the Google ecosystem makes it simple for teachers to use. Additionally, [Padlet](#) can be used as a backchannel as well.

REMOTE POLLING

Both [Zoom](#) and [Google Meet](#) have built-in polling features that can be used before and during webinars or remote meetings.



Blogging & Website Building

The term *blog* stands for *weblog* — literally, a log or diary that is maintained online. It is dynamic — changing on a regular basis — with new posts being added all the time.

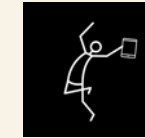
By contrast, websites don't usually change as much. They may be more static, like a site for a dentist's office, which might only contain a few pages of information that basically stay the same. Many sites are a kind of hybrid, consisting of a set of static pages and others that change (like a news feed or company blog).

The tools in this section allow users to create a blog or website for any purpose without a lot of technical knowledge. Users can choose a name and a URL for their site, select a theme (the

template that sets the colors, fonts, and visual arrangement of the site), and create content for the site's pages. With many of these tools, these basic functions can be done for free. This makes them perfect for educational use. If a user wants to take her blog or website up to another level, where she could actually make money from it and do more customization, most of these tools have paid options to meet those goals.

TEACHER USES

- Keep a classroom blog to inform students and parents about activities, homework, and upcoming projects or trips.
- Narrow your focus and create a blog or website that explores your content in-depth.
- Start a personal blog for a wider audience. Write about your teaching experiences or explore a separate interest. If the topic is school-appropriate, share it with students.
- Create a student-run class blog, where students take turns writing posts. Topics could be practical, such as “What we did in class today,” or in-depth, such as reflections on content topics or current events, or links.

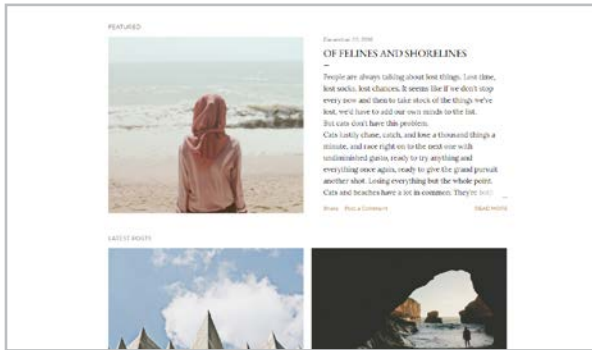


LEARN MORE ABOUT BLOGGING IN JUMPSTART

Blogging is one of the 10 modules we study in JumpStart, our online technology course for teachers. Learn about the course [here](#).

STUDENT USES

- Document learning and progress in an independent project (see [genius hour](#)).
- Form a collaborative blog with other students as part of a group project; the blog could be the project's final assessment.
- Create a blog for a wider audience, such as a blog on a particular hobby or interest, like [Baseball with Matt](#).
- Use the blog as a springboard for an entrepreneurial project, such as selling T-shirts or video courses.
- Read [A Few Creative Ways to Use Student Blogs](#) for more ideas.

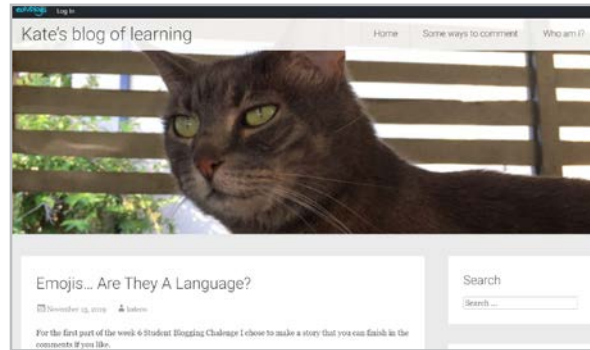


Blogger

[blogger.com](https://www.blogger.com)

The designs on Google’s free blogging tool are somewhat limited, but it offers some advantages. One is that users can earn money through Google’s AdSense ad program; this is useful if a creator is blogging as a way to earn income. Another advantage is the reliability of being backed by Google. **Note:** As of September 2021, Blogger is no longer available for users under age 18. [Learn more here.](#)

Similar: [Google Sites](#)

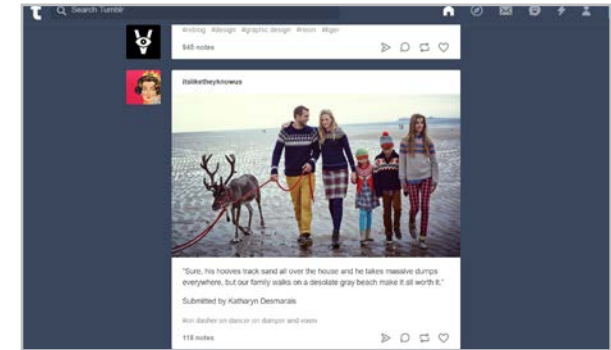


Edublogs

[edublogs.org](https://www.edublogs.org)

Edublogs provides everything you need to set up and maintain a class set of blogs. The teacher has complete control over all the content in student blogs. You can set things up so that you approve all student posts and comments before they are ever seen publicly; this makes Edublogs a great place to learn and practice blogging.

Similar: [Fanschool](#) (formerly Kidblog)



Tumblr

[tumblr.com](https://www.tumblr.com)

Tumblr is considered a microblogging site, where people “blog” with very small posts, but there is no limit to how long a post can be. A Tumblr post can consist of regular text, a photo, a nicely styled quote, a video, or an audio clip. When others see your posts, they can “like” them or reblog them on their own Tumblr pages. **Not recommended for school use as it is too easy to stumble on adult content.**



Weebly
[weebly.com](https://www.weebly.com)

Weebly is one good option for creating a great-looking website with very little technical knowledge. They have a big library of beautiful templates to choose from, their drag-and-drop design tool is easier to learn than on many other site builders, and their free plan allows you to create a blog or website without spending a dime. Weebly ended support for its education program in 2022, so if you want to manage student blogs, [Edublogs](#) is a good bet.

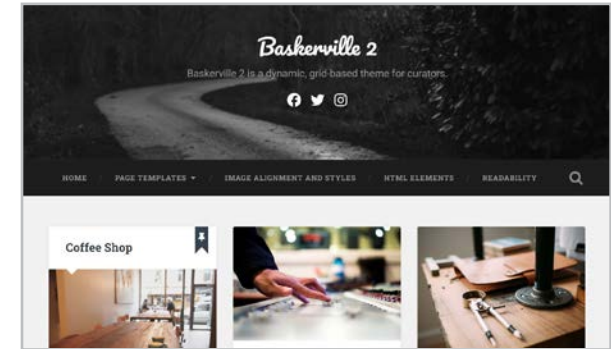
Similar: [Squarespace](#) is popular, but it may be more difficult and expensive than most



Wix
[wix.com](https://www.wix.com)

Wix is another good choice for quickly creating a fresh, modern website without a lot of hassle. Like Weebly, Wix offers drag-and-drop design, plus a library of free high-quality images and video backgrounds users can add to their sites. It will provide instant gratification to beginners who want to quickly experience the power of starting their own site without getting too technical or making major changes.

For bloggers who want to charge a monthly subscription for their posts, learn about **Substack** in our [Wonderings](#) section.



WordPress
[wordpress.com](https://www.wordpress.com)

Best for people who want a lot of control over how their site looks and operates and do not mind a steeper learning curve, WordPress is widely regarded as being one of the premier website-building platforms. It is more challenging to learn than the other platforms, but if you or your students have plans to take blogging seriously, you may eventually find yourself moving to a WordPress site, so you may want to start now.



Book Publishing

Technology has made it easier than ever to publish your own book without the need for a traditional publisher. As more educators embrace authentic learning, self-publishing offers unprecedented opportunities for students to get their ideas in front of real-world audiences.

This section looks at tools that take three different approaches to self-publishing:

Print and e-books meant for publication and distribution (like Lulu). These cater to writers who want to sell their books to the general public. These services include support for formatting books for e-readers and setting up a print-on-demand arrangement, which allows

writers to sell their own physical books through online retailers like Amazon.

Print and digital books for personal use (like Blurb). These tools help users create and then purchase their own books in paperback or hardcover. Users can work from templates or build their own. Artwork for these types of platforms is usually uploaded by the user.

Digital storytelling platforms (like Book Creator, Flipsnack, Ourboox, Storybird, and WriteReader) where users create digital books, viewable only online. On some, artwork is supplied by the platform, and on others, users upload their own. Some platforms even allow the addition of audio, video, and hyperlinks to the book.

CLASSROOM USES

- Create an online library of student stories with tools like **Storybird**, where students can comment on each other's work.
- Use a tool like **Blurb** to publish a class writing or art anthology, a gallery of science fair projects, or a yearbook of club or team memories to use as keepsakes.

- Students or teachers can publish and sell books through a service like **Lulu**. Learning how to do this takes time, but those who aspire to become professional writers are likely to find the process exhilarating.
- Using tools like **Book Creator** or **Flipsnack**, produce a digital book as the final product for a research project or other independent project. These can range from the exploration of a science or social studies topic, to journalism on a current event, to an art or photography portfolio.

MAKE EASY PDF BOOKS WITH POWERPOINT OR GOOGLE SLIDES

If you and your students want to create simple PDF books, you can do it easily with PowerPoint or Google Slides. Learn more in [Student-Made E-Books: A Beautiful Way to Demonstrate Learning](#).



Blurb

[blurb.com](https://www.blurb.com)

This site helps you create photo books with text, using templates for a variety of book types: cookbooks, children's books, portfolios, memoirs, magazines, and more. Books can be kept in digital form or purchased as a paperback, a hardcover book, a magazine, or an e-book. Printed books are not cheap; save this for something special.

Similar: [Chatbooks](#), [Mixbook](#), [Shutterfly](#), [Snapfish](#)



Book Creator

[bookcreator.com](https://www.bookcreator.com)

This flexible tool allows students of any age to create e-books. These books can contain photos, text, audio and video files, hand-drawn images, even embedded content like Google Maps. Finished books can be shared through a link, downloaded as an EPUB, or even sold through iBooks and Google Play. Teachers can create classroom libraries, and the site has tons of resources and ideas for classroom use.



Flipsnack

[flipsnack.com](https://www.flipsnack.com)

Take any existing PDF and turn it into a gorgeous digital flipbook, interactive newsletter, or page-turning magazine to share with students, families, and the community. With Flipsnack's classroom plan, you can assign templates to students to customize and submit to you. Add interactive elements, GIFs, videos, or HTML5 code and share it using social media, email, or a website. No experience needed to publish a professional looking flipbook.

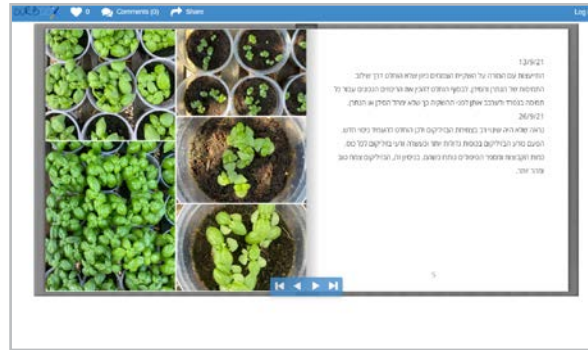
Similar: [Issuu](https://www.issuu.com)



Lulu
lulu.com

For writers who want real publication, print-on-demand sites like Lulu are growing in popularity. Authors upload manuscripts, then sell print and e-books through markets like Amazon. Authors are not charged a fee to publish: When a book sells, Lulu earns back the cost of production plus a percentage of the profit, and the author keeps the rest.

Similar: [Amazon KDP](#), [Smashwords](#)



Ourbox
ourbox.com

Ourbox is similar to Book Creator, but much simpler. It has one thing that sets itself apart from all other online book platforms: languages. Books on Ourbox can be published in right to left format, which supports languages like Arabic and Hebrew. You can also upload a PDF to have it published in book format on their site.

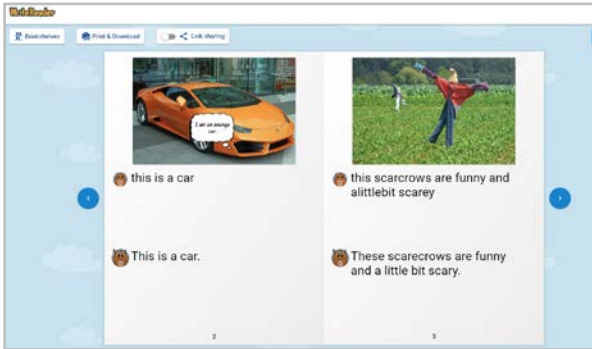
Similar: [Scribblitt](#)



Storybird
storybird.com

Although this site is no longer free, it may be worth the price. Users begin by browsing through a gallery of professional artwork until they find an inspiring image, and then they write a story or poem to accompany the image. They can choose a collection of images and build a picture book around it. The site also offers excellent resources for teachers, like writing lessons and private class settings.

Similar: [JamBios](#)



WriteReader

writereader.com

This is a great tool for emerging writers. As students type in text, WriteReader will say either the name of the letter or the sound it makes, allowing students to get auditory confirmation that they are choosing the right letters. To enhance their books, students can add images or voice recordings, and teachers can add adult-written text below the child's writing. Finished books can be printed or downloaded as PDFs.

10

TECH DEVICES THAT WILL LEVEL UP YOUR CLASSROOM

This guide mostly covers software, the stuff that works *inside* devices. But what about gadgets? While we don't want to get into recommending the bigger, school-wide purchases, these smaller, single items can help you get even more out of the tech in your room.

wireless doorbell: Put outside your room to avoid interruptions (keep the receiver by your desk) or use as an [attention getter](#).

A [Chromebox](#) with a wireless keyboard and TV monitor creates a wall-mounted display in your classroom.

document camera: An amazing way to give more visual lessons for students.

clicker: Click through slides from anywhere in the classroom. Most also come with a built-in laser pointer.

Apple iPad and Pencil: Assess progress and input student information without having to be behind your desk.

talking buttons: Record voice messages for students or parents, and send them home! Check out more ideas [here](#).

digital microscopes: No more closing one eye to try and get the clearest image.

RockStar adapter: Limited on devices but want groups of students to listen to an audio or video? This handy adapter lets you connect five headsets to one device.

Merge Cube: This tool brings 3D to life so you can hold the Earth in your hands. Learn more about Merge in our [VR/AR](#) section.

portable scanner: Cut down on paper clutter and save trips to the copy machine.



Career Exploration

It's an age-old question: "What do you want to be when you grow up?" Most kids get asked this question on a regular basis. When they're young, it's just a way to get to know them, a conversation-starter. But as students head toward graduation, the question takes a more serious turn.

Although it's not realistic to expect anyone to have their entire life planned out before leaving high school, it can be incredibly helpful to have a good understanding of your strengths and interests and how those match up with careers that can support a satisfying life.

The tools in this section can help with that process. **Thrively** offers quizzes students take to

determine where their interests and strengths lie, then point them toward careers that would be a good fit. **CareerVillage** and **Pathful** offer real-world career advice from professionals who have been there.

All three tools would be relevant for high school students, either as part of what's offered by a school's guidance department, included in an actual course, or used as the focus of a special research or writing project where students research all aspects of a particular career path. Middle school students would also find all three sites interesting, although they might not be quite as invested in the results. Elementary students will do best with Thrively or Pathful's elementary version, Pathful Junior.

MORE CAREER RESOURCES ON EVERFI

[EVERFI](#), in the Financial Literacy section, has an excellent collection of [career resources](#), including a middle school unit focusing entirely on STEM careers.

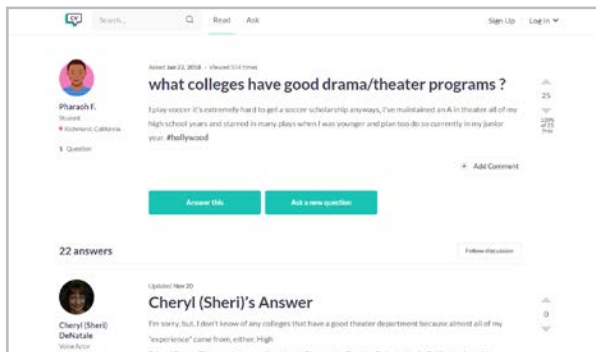
NO PERMISSION SLIP NEEDED

Students can take advantage of all kinds of online experiences that can help them make decisions about their future without leaving home. For example:

- [Nearpod](#), which is featured in the Presentation section, now offers virtual reality tours of many major college campuses. [Learn more here](#).
- [Discovery Education](#) has expanded their resources to include virtual field trips to places like Lockheed Martin Advanced Technology Center and a John Deere facility.

ONLINE RESUMES WITH A TWIST

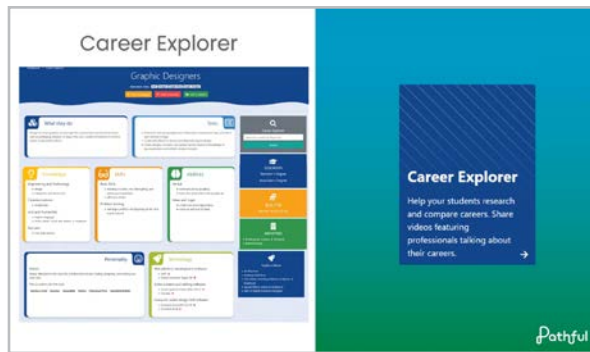
As students build a list of academic, extracurricular, and service achievements, they can use a tool like [KudosWall](#) to display them visually online. Links to their online portfolio can then be sent with college or job applications.



CareerVillage

careervillage.org

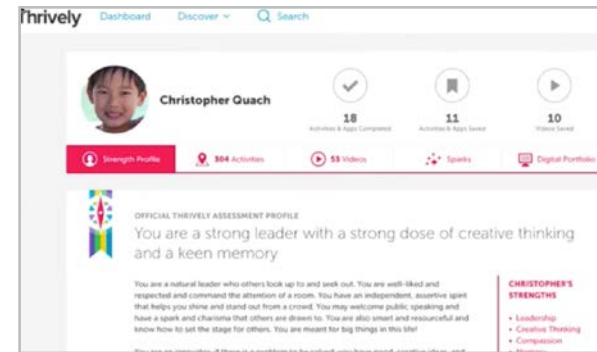
On this simple question and answer platform, students ask career- and education-related questions, then get answers from professionals with real-life experience. Users can also browse conversations by topic to find questions that have already been answered.



Pathful

pathful.com

As a part of the Pathful experience, students from elementary to high school can explore careers, colleges, and browse high quality videos. Pathful Connect (formerly Nepris) allows educators to create virtual, live sessions to connect with over 50,000 industry professionals across the 17 career clusters. Pathful Explore (formerly Virtual Job Shadow) and Pathful Junior provide engaging, interactive lessons to explore diverse career pathways and increase digital literacy skills.



Thrively

thrively.com

Thrively is focused less on sending students out into the world, and more on passion-driven personalized learning while still in a K-12 setting. After taking a strengths assessment, students are given career suggestions to explore, along with a list of local activities that would help develop the skills associated with the student's strength profile.



Classroom Management

Effective classroom management starts with a foundation of consistency and relationships. Assuming you have built that foundation, the tools featured in this section will help you improve the way you run your classroom.

Although none of these tools can substitute for relationship-building and consistency, they can help systematize and automate some of the tools you have already used for generations.

Three of these — **Class Charts**, **Classcraft**, and **ClassDojo** — focus on monitoring and making adjustments for student behavior. It's important to know that there is a right way and a wrong way to use tools like these. Publicly displaying students' behavior marks can have an incredibly negative impact on students. To understand

the argument for and against public behavior monitors, read [Tear Down Your Behavior Chart!](#) from ASCD.

One tool, **BehaviorFlip**, also helps teachers monitor student behavior, but the platform is not intended to be made public. It is built with restorative justice in mind (see box at right).

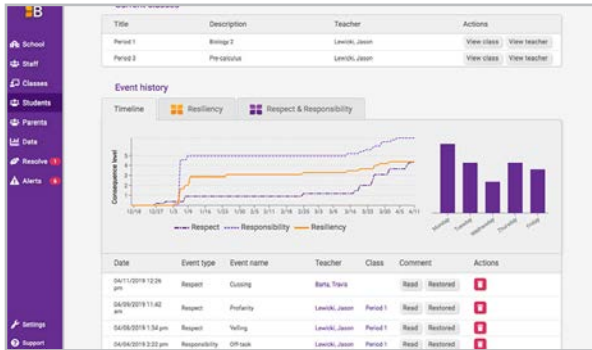
The others in this section have more targeted purposes:

- **GoNoodle** provides video “brain breaks” to give kids a chance to move their bodies and relax between academic activities.
- **Bouncy Balls** helps teachers monitor the noise level in the classroom.
- **ClassroomQ** cuts down on the chaos caused by students waiting for your attention.
- **ClassroomScreen** lets you manage a multitude of classroom tasks on one screen.
- **NameCoach** helps you pronounce your students' names correctly.

LEARN ABOUT RESTORATIVE JUSTICE

Many schools are shifting their approach to behavior management toward **restorative justice**, which has deep roots in Indigenous communities. Schools who study this philosophy carefully and apply it correctly have found great success with it. To learn more about restorative justice, read [this overview](#).

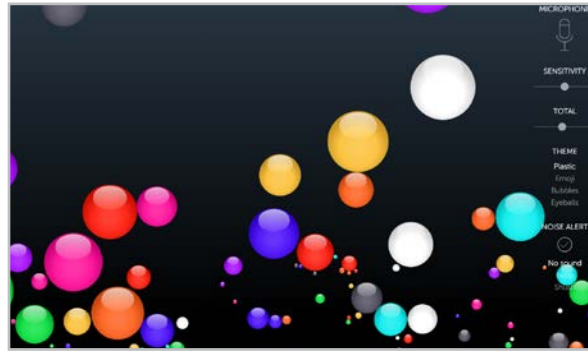
BehaviorFlip | Bouncy Balls | Class Charts | Classcraft | ClassDojo | ClassroomQ | Classroomscreen | GoNoodle | NameCoach



BehaviorFlip

behaviorflip.com

This platform was built with restorative justice practices in mind. Teachers track students’ “coachable” behaviors in two categories – respect and responsibility – in order to detect patterns and provide a starting point for talking with students. The tool also lets you reward students for behaviors that demonstrate resilience. It even has a mechanism for indicating whether harm has been repaired after an incident.

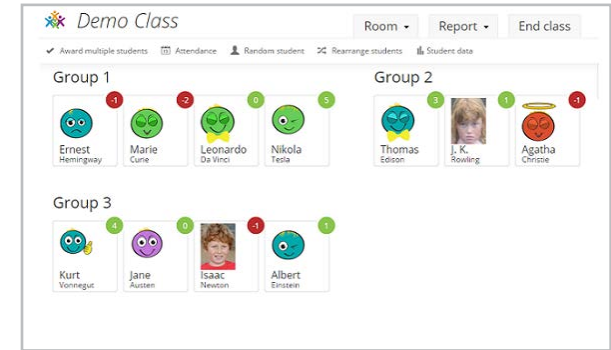


Bouncy Balls

bouncyballs.org

This web-based tool helps to keep noise at a reasonable level. Just open the website and set it up where students can see it. When the classroom is quiet, the balls stay settled at the bottom of the screen, but when the noise starts to rise, the balls get more active, giving everyone in the room a visual cue about how noisy they’re getting.

Similar: [Too Noisy](#)

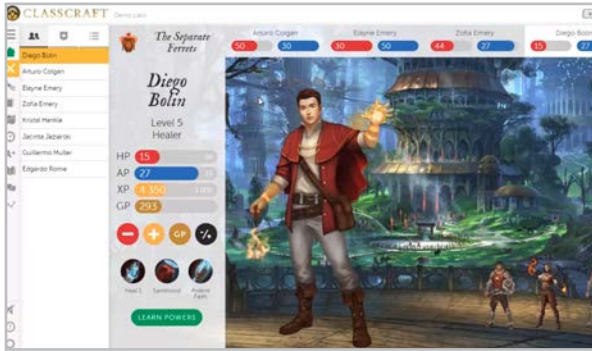


Class Charts

classcharts.com

This platform helps you sort students into different kinds of seating charts based on behavior, reading levels, gender, or whatever parameters you’d like to set for a given activity. You can also record positive and negative behaviors, awarding points for good choices, and generate reports on individual students and whole classes, so you can see what types of behaviors are a problem for you as a teacher.

BehaviorFlip | Bouncy Balls | Class Charts | Classcraft | ClassDojo | ClassroomQ | Classroomscreen | GoNoodle | NameCoach

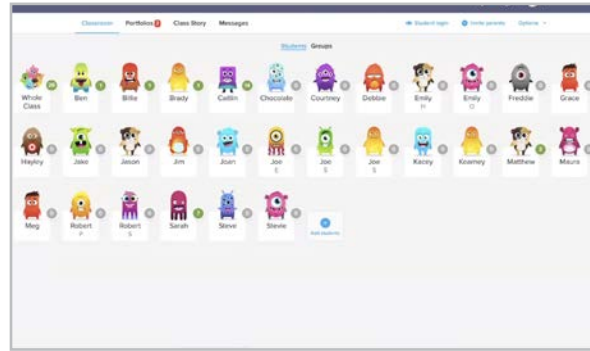


Classcraft

classcraft.com

This unique platform gamifies classroom management. Students inhabit a virtual world as self-designed avatars, and their activities reflect what happens in class. They earn points for things like helping other students or getting questions right, then use these points to “level up” in the game, unlock powers, and earn privileges. They also lose points for negative behaviors. Students work in teams, helping each other and sharing rewards and consequences.

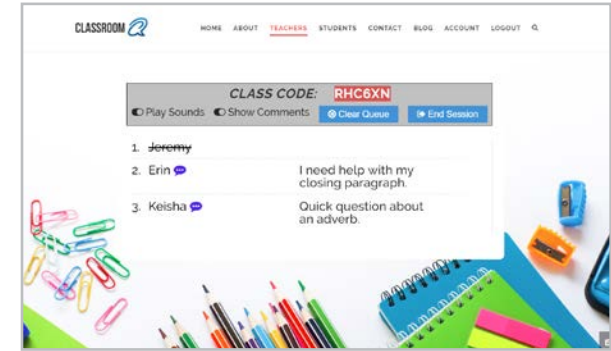
Similar: [GradeCraft](#)



ClassDojo

classdojo.com

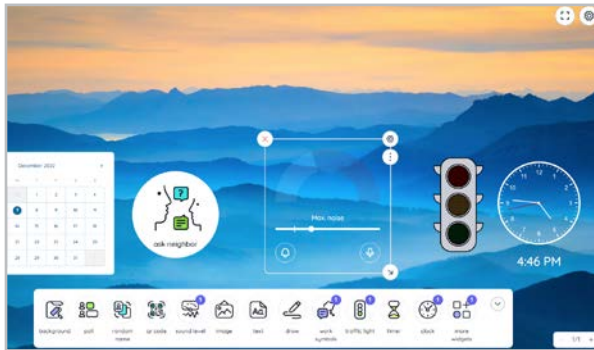
The earliest version of ClassDojo focused on giving and taking away points for behavior on a screen of student avatars, as seen above. Parents could access student accounts, which kept them in the loop on their child’s behavior. This tool is still in place, but Dojo now offers more features: student portfolios, a more advanced parent messaging system, and a “Story” feed that keeps parents updated on classroom activities.



ClassroomQ

classroomq.com

When many students need attention during group or independent work, things can get hectic. ClassroomQ’s online queue system solves this problem: If a student has a question, he requests help through his own device. On your page, student names appear in the order they were entered. Once you meet with a student, you click their name and it disappears, moving everyone else up in line.



Classroomscreen

classroomscreen.com

This tool gives you one screen to project various classroom management tools. The app comes with a collection of widgets for this purpose, including a timer, a traffic light (which can mean whatever you and your students decide it means), a drawing tool, a random name selector, a noise monitor, a QR code widget, and a menu of “work symbols” to indicate what level of talking is okay for the kind of work you’re currently doing.



GoNoodle

gonoodle.com

GoNoodle helps keep kids moving with a library of interactive, video-based brain breaks, each one five minutes or less, designed for elementary students. There’s dancing, Wii-style sports play, yoga, and even Zumba. Many of the breaks have students play games that build skills and develop fluency in core subjects.



NameCoach

cloud.name-coach.com

According to Dale Carnegie, “A person’s name is to him or her the sweetest and most important sound in any language.” NameCoach provides the opportunity for all to record accurate audio names so that everyone can correctly pronounce student or staff names. This helps foster the inclusivity, positive relationships, and respect critical to building community.



Cloud Storage

When one of your documents is stored in the “cloud,” it’s being kept on a bigger, stronger computer somewhere far away. Actually, it’s more like a collection of computers called a data center. Using more than one storage facility protects your files from being corrupted, lost, or unavailable due to a problem in one place.

WHY USE CLOUD STORAGE?

Access: You can get to your files from anywhere, as long as you have an internet connection.

This means never having to worry about that flash drive you left at home or getting ready to work on lesson plans at home and realizing you stored them on your computer at school.

Backup: If something goes wrong with your home or work computer, your cloud-stored files are left untouched.

Space: All home computers, flash drives, and external hard drives have limits on the amount of stuff they can hold. Cloud storage gives you a lot more room to house your stuff.

Collaboration: Most cloud storage systems allow users to give other people access to certain files. That means groups of people can view or even work on the same document simultaneously.

POPULAR CLOUD PLATFORMS

Dropbox 
dropbox.com

This was one of the earliest cloud storage services, and it’s still going strong.

Google Drive 
google.com/drive

Google Drive offers the storage power of Dropbox, but also provides tools right inside Drive that you can use to create new documents.

Microsoft OneDrive 
onedrive.com

Along with an Office 365 subscription, OneDrive offers storage linked to Microsoft Office’s powerful creation tools, all based in the cloud.

There are plenty of others to choose from, like [iCloud](#), [Box](#), and [IDrive](#), but they may be more geared toward businesses. Read [this overview](#) to compare platforms.

NEED TO TURN YOUR FILE INTO A DIFFERENT KIND OF FILE?

Sometimes you have a file, but it’s the wrong type for your current need. These **file converters** let you change a file of one type, like a PDF, into another type, like a Word Doc.

Media.io: media.io

PDF Candy: pdfcandy.com

Zamzar: zamzar.com




Collaboration & Project Management

Effective collaboration — working with others to make decisions, explore concepts, solve problems, and create new products — has been recognized as one of the 4Cs: learning and innovation skills that are the desired outcome of a [21st century education](#).

And as more schools embrace project-based learning as an instructional model, project management skills are in higher demand. Being able to coordinate and execute large, ongoing, complex projects is a valuable skill for any

PLATFORMS FOR PROJECT-BASED LEARNING

Be Anything 
beanything.co

Projects are managed on this platform with task cards, like on Trello; rubric and feedback options are built-in for teachers.

Spinndle 
spinndle.com

On project roadmaps, students work together to brainstorm, set goals, give each other feedback, and iterate on projects.

individual to have, and it is the kind of work students will do in college and in their careers.

The tools in this section facilitate project management and collaboration on small and large scales, and they do it all digitally, so students can work in person or from home. **Padlet** and **Miro** are simpler spaces where teams can work together to collect and

DIGITAL WHITEBOARDS

In these online spaces, users can write out ideas like they would with a marker and add images, text, and shapes. Many teachers use these spaces in conjunction with a lecture or a video conference.

Explain Everything
explaineverything.com

Google Jamboard
jamboard.google.com

Lucidspark
lucidspark.com

discuss ideas. **Slack** provides a space for team communication. And **Basecamp**, **Kanbanchi**, and **Trello** offer tools for managing large, multifaceted projects.

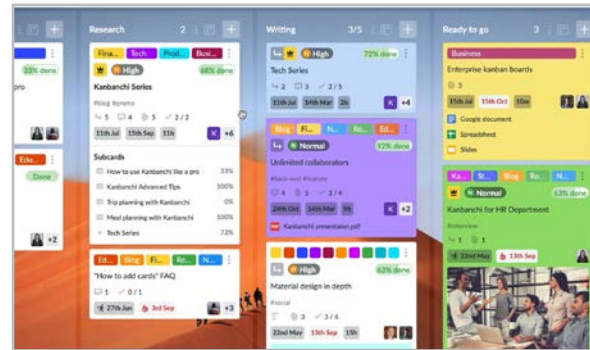
Other tools in this guide offer collaboration features, like [word processing](#) platforms, [mind mapping](#) tools, [learning management systems](#), and [speaking and discussion](#) tools.



Basecamp

basecamp.com

This clean, simple platform gives users one central place to organize all components of a project: messages, to-dos, schedules, documents and files, a group chat, and a place for checking in on the status of individual tasks. Accounts are offered free for verified education users.



Kanbanchi

kanbanchi.com

This project management tool is a great choice for Google Workspace users, because it works right inside that platform. Like Trello, this tool organizes projects on [kanban boards](#), which use cards and columns to track various tasks. The site also offers templates for lesson planning, classroom newsletters, and other classroom work. [Discounts for educators](#) are available.



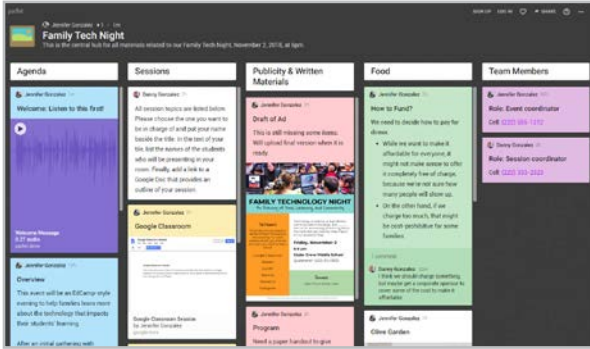
Miro

miro.com

Formerly known as RealtimeBoard and AWWapp, Miro takes the idea of brainstorming on a whiteboard and moves it online. Using a template, groups of users go into the same space and work simultaneously on the same board, writing notes, attaching files, pasting in images, and embedding videos. While they do this, they can do a written chat or conduct video chats right inside the collaboration board.

Similar: [Stormboard](#)

Basecamp | Kanbanchi | Miro | Padlet | Slack | Trello



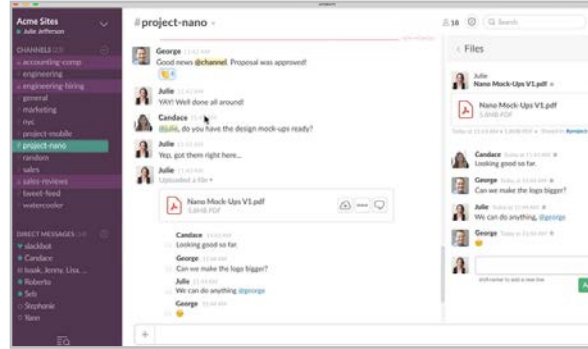
Padlet

padlet.com

Through one lens, Padlet is a **curator** tool: an online corkboard where you can pin notes, pictures, files, and links to other places.

Through another, it's a collaboration tool, where you can engage in an online discussion with others while also sharing resources in one place. While not as robust as a full-fledged project management tool, Padlet has a lot of flexibility for smaller-scale collaboration.

Similar: [Post-it App](#), [Weje](#)



Slack

slack.com

This team messaging platform is much more efficient and user-friendly than email. Messaging takes place through channels – like separate chat rooms for different conversations. Users can also attach files and hold side discussions about these files within the larger conversation.

Similar: [Discord](#), [Microsoft Teams](#), [Twist](#), [Yammer](#)



Trello

trello.com

Like Kanbanchi, on Trello users create a board for each project. Every board contains lists (for components of a project), and within each list are cards representing individual tasks. Cards can contain text, attached files, checklists, links to outside resources and threaded conversations about that card.

Similar: [Asana](#), [MeisterTask](#), [monday.com](#), [Taiga](#)



Comic Strip Creators

Any time we make learning visual, we give it a boost. Research tells us that [dual coding](#) — pairing verbal concepts with visuals — helps students learn and remember concepts better. Mind mapping is one way to build dual coding into learning. Another way is with comic strips.

The tools in this section provide everything a student needs to create digital comic strips: layout templates, backgrounds, customizable images, and plenty of ways to add text.

CLASSROOM USES

- Make timelines showing the cause and effect of a significant historical event, or to illustrate a sequence in science, literature, or even math.

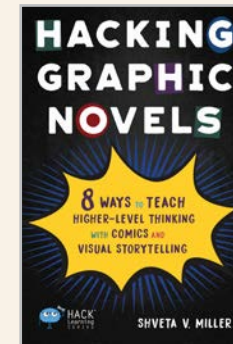
- Use cells to illustrate vocabulary words or create character sketches.
- If you study the elements of [graphic novels](#), have students produce a short graphic story of their own; these can offer [surprising benefits](#).
- Practice a foreign language by creating stories in that language.
- Create your own comic strips to teach concepts in your content area.

A FEW TIPS

Because these tools are so customizable, students could spend hours creating and adjusting comic strips. With each project, be mindful of your learning goals: Make sure students spend more time working with the content than they do fiddling with the angle of a character's arm.

- Have students draft their storyboards on paper and write out the captions before ever opening up the tool; this will help them focus on the content and may reduce the time they spend exploring visual options.

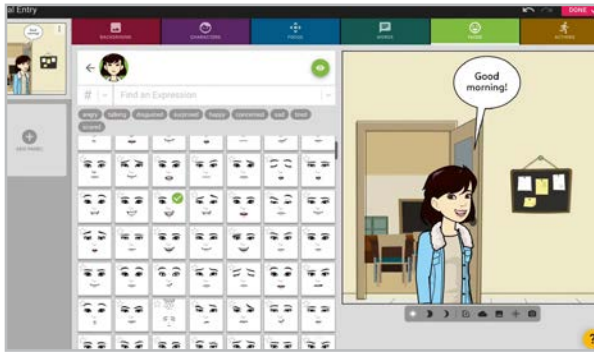
- Resist the urge to give significant points for creativity or artistic skill; consider the standards you want to measure and assess for those.
- Set time limits and deadlines for stages of a project, so students don't get way behind.



GRAPHIC NOVELS: POWERFUL RESOURCES FOR LEARNING AND CREATING

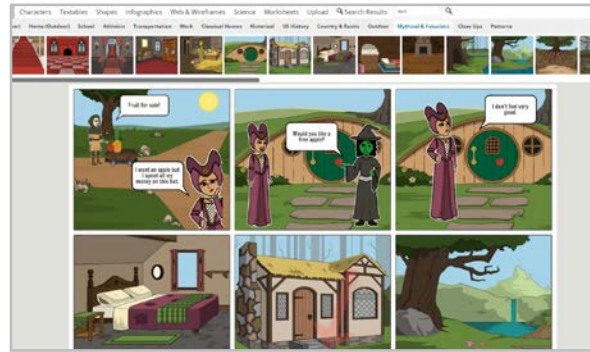
In her book, *Hacking Graphic Novels*, Shveta Miller explores all the

ways comics and graphic novels can provide students with rich higher-level learning when they are used as texts to study and offered as writing and art forms to create. After reading it, you'll come away excited and full of ideas for teaching with this incredible medium. Learn more about the book on our [book page](#).



Pixton
edu.pixton.com

Choosing from a library of thousands of characters, backgrounds, and templates for all subject areas and grade levels, students can create storyboards with a choice of several layouts. Captions can be added to each cell, along with speech bubbles, and dozens of content packs are available for different subject areas, making it easy to populate your comic strips with topic-specific objects, backgrounds, and characters.



Storyboard That
storyboardthat.com

Build comic strip-style storyboards from a searchable library of hundreds of backgrounds, customizable and posable characters, and props, including items from specific historical periods. Along with basic comic strip layouts, students can also use [graphic organizers](#), like a spider map, a T-chart, a grid, or even a Frayer Model. The site also offers a massive library of [lesson plans](#) for multiple subjects and all grade levels.


Similar: [MakeBeliefsComix](#)

COMIC MAKER APPS

In addition to the sites listed at left, these comic-making apps are also worth a look:

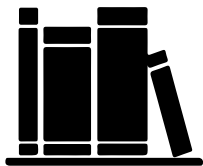
Comic Life 
comiclife.com

Halftone 2 
juicybitssoftware.com/halftone2

Strip Designer 
vividapps.com/Strip_Designer

Superhero Comic Book Maker 
apps.apple.com/us/app/id545311423

Actively Learn | AP Archive | British Pathé | CommonLit | CuriPow | Epic | Fathom Reads | Global Oneness Project | Great Big Story | The Juice | Listenwise
myShakespeare | Newsela | NewseumED | Novel Effect | PBS LearningMedia | PebbleGo | Swank K-12 Streaming | Vooks | Wonderopolis



Content Libraries

In recent years, a much greater emphasis has been placed on nonfiction texts. Because students are required to read and understand challenging texts in college and in their professional lives, teachers in all content areas are expected to give students plenty of practice with these kinds of texts.

Until recently, finding high-quality nonfiction was challenging. But more sites are now offering excellent, searchable libraries of content (both fiction and nonfiction) for classroom use, along with outstanding tools to support and enhance them. We're calling these sites Content Libraries.

Some of the sites in this section offer only texts, others house libraries of videos and films, one focuses exclusively on audio content, and others include primary sources in their collections.

CLASSROOM USES

- Use any of the sites to offer free-choice activities for early finishers or enrichment activities for advanced students.
- Improve listening comprehension skills by assigning podcasts or treat video as text by studying films.
- Encourage students to use these sites when doing research on a topic. Each one is being updated regularly and will continue to grow.

Thousands of Free E-Books

[Project Gutenberg](#) is a massive library of e-books that are free to download because their copyright has expired. This is a great place to find classic literature. Learn more in [this video](#).



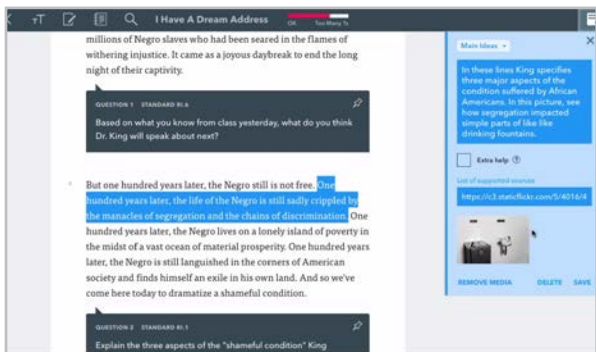
Biblionasium: Like Goodreads for Kids

[Biblionasium](#) doesn't qualify as a content library, but it would work well in any class where students read for pleasure. It's a safe social reading community where kids can share book recommendations and keep personalized shelves of books they've read and want to read.

Lesson Plans for Movies

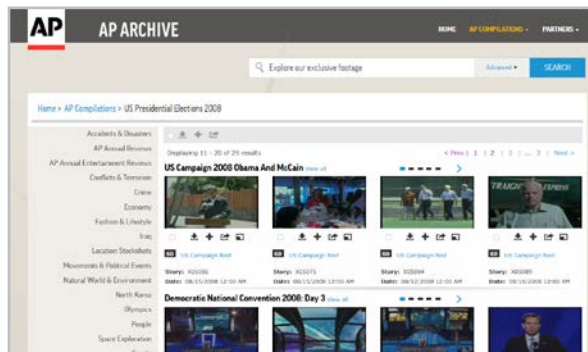
The website [Teach with Movies](#) offers summaries, age recommendations, curricular connections, lesson plans, and discussion guides for hundreds of films.

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myShakespeare | Newsela | NewseumED | Novel Effect | PBS LearningMedia | PebbleGo | Swank K-12 Streaming | Vooks | Wonderopolis



Actively Learn
[activelylearn.com](https://www.activelylearn.com)

This platform offers a large library of texts and videos for ELA, social studies, and science for grades 3-12, many of which come pre-loaded with assignments and questions for students to answer. You can also add your own questions or notes to the existing assignments or upload your own documents and create assignments from these. Features like text-to-speech and English-to-Spanish translation add extra scaffolding. Actively Learn is continuously updating; discover their newest features [here](#).



AP Archive
[aparchive.com](https://www.aparchive.com)

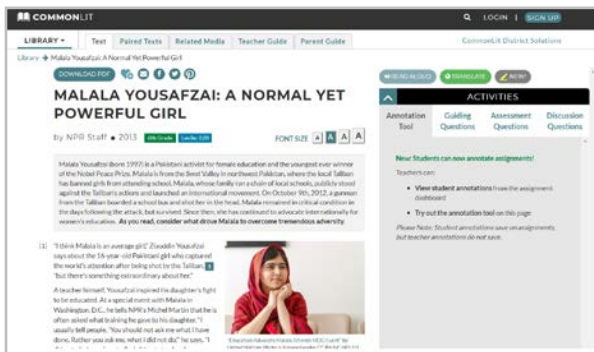
AP Archive is the film and video archive of The Associated Press. Along with the website, the archive is also available on its [YouTube Channel](#), which may be easier to navigate. On the channel, you will discover clips and videos capturing moments in history. It has curated playlists, “This Week in History,” a weekly “Archivist Presents” selection, and one of the coolest collections of time-lapse videos! Return regularly as the footage is added daily from global news networks with topics ranging from fashion to world events.



British Pathé
[britishpathe.com](https://www.britishpathe.com)

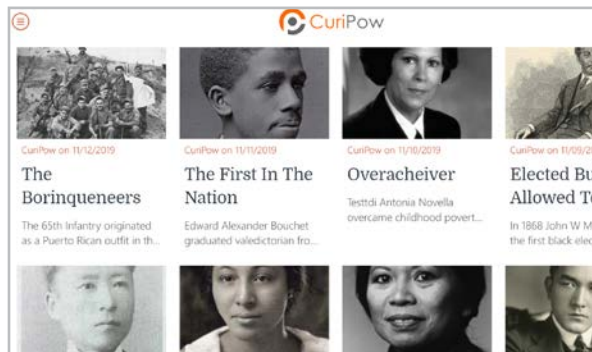
British Pathé is a collection of over 220,000 historical newsreel clips featuring significant moments, both cultural and historical. As of 2018, British Pathé also houses the Reuters historical collection. It is an easily searchable curated collection that contains full films, clips, collections, and workspaces that are filled with paired videos. Additionally, their [YouTube Channel](#) is designed for easy access.

Actively Learn | AP Archive | British Pathé | CommonLit | CuriPow | Epic | Fathom Reads | Global Oneness Project | Great Big Story | The Juice | Listenwise
myShakespeare | Newsela | NewseumED | Novel Effect | PBS LearningMedia | PebbleGo | Swank K-12 Streaming | Vooks | Wonderopolis



CommonLit
[commonlit.org](https://www.commonlit.org)

This free library of literary and informational texts for grades 3-12 allows teachers to find and assign texts by grade level, genre, theme, and literary device, then track student progress. Once assigned, texts can be annotated and paired with other media. The library includes public domain texts, professional writing contributed from other publications, and short works donated by published writers. [CommonLit 360](https://www.commonlit.org/360) is a full-year ELA curriculum for grades 6-10, with units for grades 11-12 being added in 2023.



CuriPow
[curipow.com](https://www.curipow.com)

The mission of CuriPow is to “empower you with a short untold story each day on the diversity of history through cultural identity and heritage.” Every daily entry is indeed short — either a few written paragraphs or a podcast lasting less than two minutes — and tells an interesting story of someone in history from a different ethnic and cultural background.



Epic
[getepic.com](https://www.getepic.com)

Free for teachers, this site houses thousands of digital books and videos for kids from pre-K through age 12. These are the award-winning, best-selling books you’ve known forever, but now they can be accessed through a desktop, tablet, or smartphone. Students can keep track of their progress, take quizzes over their reading, and earn badges for hitting reading milestones. Paid plans are available for families that want access at home.

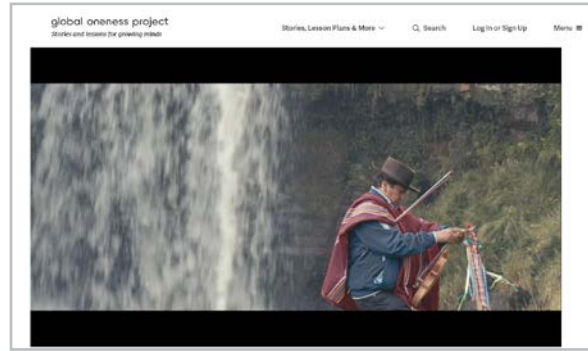
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Fathom Reads

[fathomreads.com](https://www.fathomreads.com)

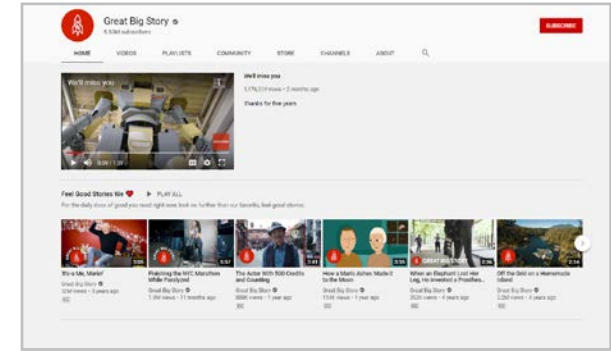
Over 1,200 leveled books line the digital shelves of Fathom Reads, with 800 of them being dual-language with English and Spanish. Some titles even have additional languages, all read by native speakers. These books come in a variety of topics like science, math, and social studies. Standouts for this app are the ability to practice fluency through student read-alouds, interactive “think about” questions throughout the text, and a highlighting feature to help with pronunciation!



Global Oneness Project

globalonenessproject.org

This site offers a stunning collection of multicultural films, photo essays, and articles that “explore cultural, social, and environmental issues with a humanistic lens.” Many stories are paired with a standards-aligned lesson plan for high school or college classrooms. This collection will provide students from any culture with a deep understanding of lives completely unlike their own.



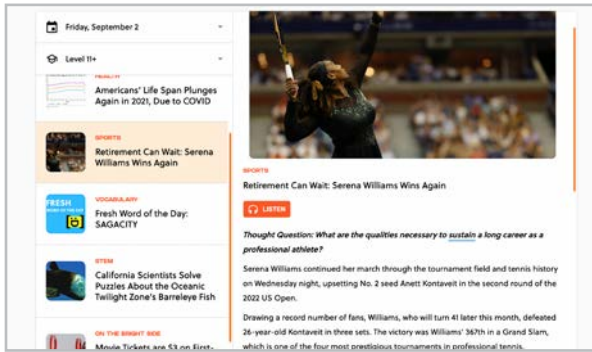
Great Big Story

youtube.com/c/GreatBigStory

Great Big Story produces videos that show “a sense of optimism for the world... because goodness can grow through the smallest cracks in the sidewalk.” Although the main site is no longer around, their YouTube channel still has the videos, which are absolutely worth exploring.

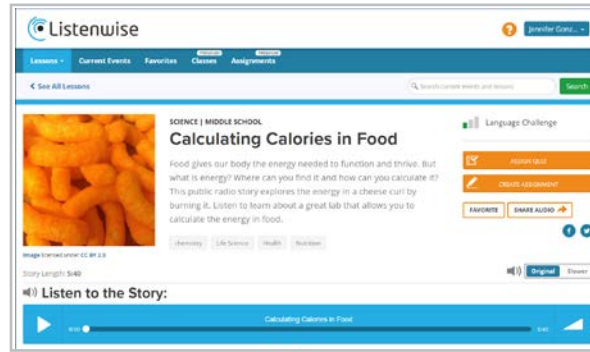
Similar: [Goodness Exchange](#)

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myShakespeare | Newsela | NewseumED | Novel Effect | PBS LearningMedia | PebbleGo | Swank K-12 Streaming | Vooks | Wonderopolis



The Juice
thejuicelearning.com

This current events platform delivers five articles daily to your inbox. Designed for grades 5-12 at four differentiated reading levels, these articles are up-to-date and align with curriculum standards. Each article has vocabulary, a comprehension quick check, and the option to read or listen to the articles. Every issue also includes infographics and articles on SEL and STEAM topics.



Listenwise
listenwise.com

Every day, dozens of exceptional stories are published on public radio. Listenwise curates these podcasts for classroom use, organizes and tags them into categories, and builds a set of outstanding instructional resources around each one. With Listenwise, teachers can easily use podcasts as classroom texts, amplifying content and giving students practice in required listening skills.

Similar: [The Walking Classroom](#), [Kids Listen](#)



myShakespeare
myshakespeare.com

This fantastic site starts with the full text of six of Shakespeare’s most popular plays. But there’s so much more: Each play also comes with modern English translations, “between the lines” commentary, audio recordings that sync with the written text, videos of actors performing key scenes, and video “interviews,” where actors talk in contemporary language about their characters’ situations. Definitely worth a look for high school English teachers!

Actively Learn | AP Archive | British Pathé | CommonLit | CuriPow | Epic | Fathom Reads | Global Oneness Project | Great Big Story | The Juice | Listenwise
myShakespeare | Newsela | NewseumED | Novel Effect | PBS LearningMedia | PebbleGo | Swank K-12 Streaming | Vooks | Wonderopolis



Newsela

newsela.com

Newsela houses a big collection of articles from reputable news sources. Each article has been adapted for five different reading levels, allowing readers to select the level they want and read the same content at the level that's the best fit for them. All articles can be read aloud to the student and many articles are available in Spanish. Newsela has recently added hundreds of interactive videos and curated text sets with activities to give teachers more ways to engage students.

Similar: [DOGOnews](#), [ReadWorks](#)

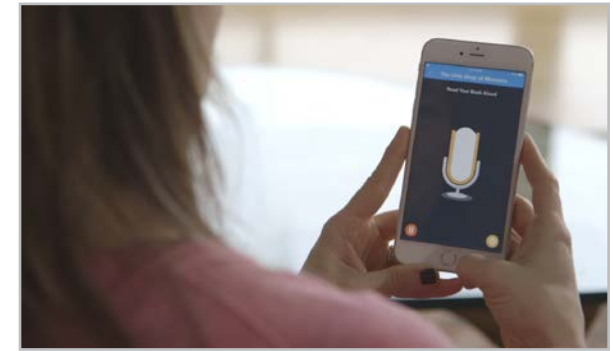


NewseumED

newseumed.org

NewseumED is the educational branch of [Newseum](#), a news museum located in Washington, D.C., that is no longer open. The site offers free accounts that link teachers to fantastic primary sources, news artifacts, and lessons and units that help teachers teach media literacy, civics, and all aspects of the First Amendment.

Similar: [Digital Public Library of America](#)

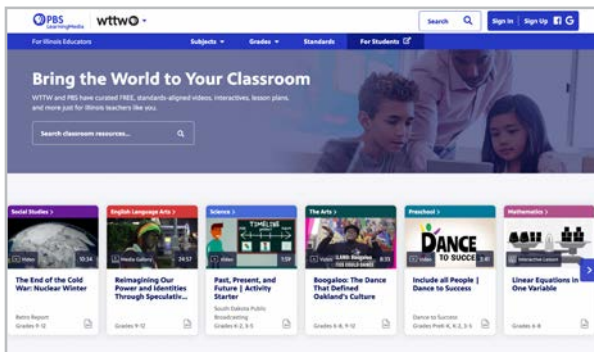


Novel Effect

noveleffect.com

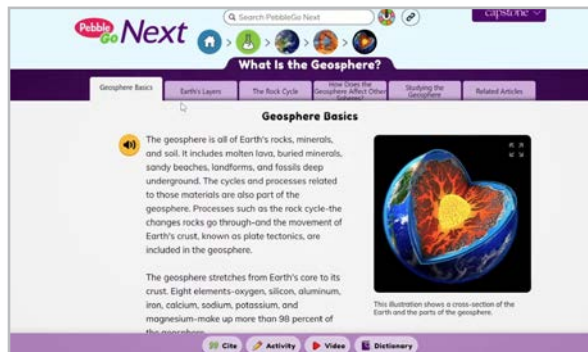
This free app listens while you read a story aloud and plays music and sound effects at key points in the story. Using voice recognition, Novel Effect keeps pace with you: If you skip pages, re-read sections, go fast or slow, it will play the sounds at the right time, adding a little extra excitement to the read-aloud experience. You need to have the physical books in order to use it, but their library is loaded with soundtracks for over 800 popular kids' books ([see the catalog here](#)).

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myShakespeare | Newsela | NewseumED | Novel Effect | PBS LearningMedia | PebbleGo | Swank K-12 Streaming | Vooks | Wonderopolis



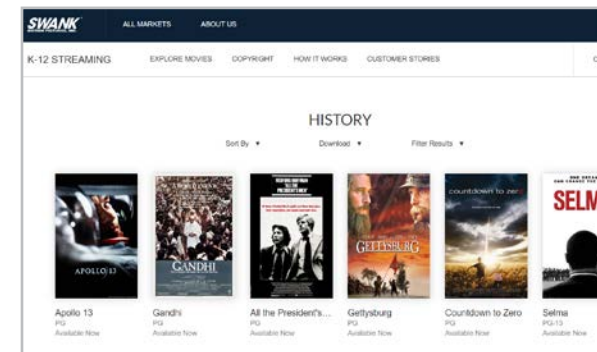
PBS LearningMedia
pbslearningmedia.org

PBS has curated a huge collection of free videos, images, audio, and interactive lessons aligned with a variety of standards. It houses comprehensive on-demand digital content for grades pre-K-12 including health & physical education, science, math, and even professional development. Many lessons also include accessibility features such as captions and transcripts.



PebbleGo
pebblego.com

PebbleGo is designed for K-3 students who have research to do. The platform offers a library of over 1,500 student-friendly articles in five subject areas: animals, biographies, health, science, and social studies. All articles have the option to hear the text read aloud and include interactive activities to reinforce the learning. [PebbleGo Next](#) offers material for grades 3-5, and [PebbleGo Create](#) has students use the creative tools in [Bunce](#) to demonstrate their learning.



Swank K-12 Streaming
swank.com/k-12-streaming

This service gives teachers access to full-length movies that are permissible to show in the classroom from a variety of streaming services such as Netflix, Disney+, Paramount, and more. It is approximately \$500 per year and includes 200 pre-selected, curated movies plus the option to request additional titles from Swank's full catalog of more than 30,000 films.

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Vooks

vooks.com

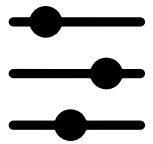
Vooks offers a library of streaming videos that read well-loved children’s books aloud to them. The text only appears with the voice-over, allowing readers to follow along as they listen, and the art is also animated, which makes the book come to life. A collection of free [activities](#) is available to supplement the reading. This site is not free, but a free trial is available.



Wonderopolis

wonderopolis.org

On this site, users submit “wonders,” questions about things they are wondering about. Once a wonder has been submitted, other users vote on the ones they find most interesting. Those with the highest votes are then selected by the site as Wonders of the Day, questions that have been formally answered by the Wonderopolis staff, along with added photos, videos, a vocabulary list, and a short quiz. Wonderopolis has a read-aloud feature to support students at any and all reading levels.



Curation

Curation is what museum directors do: They collect artifacts based on a specific topic, organize them into groups, and share those collections with the world.

A content curation tool helps us collect online resources in the same way by seeking out images, articles, videos, and other bits of content, “vetting” them for quality, and grouping them together under a common label. Sometimes we curate items for our own research, and other times we do it to share things with others. [This video](#) does a great job of explaining the concept.

TYPES OF CURATION TOOLS

Curation tools come in so many shapes and sizes. Before choosing one, it helps to understand the different types.

- **Bookmarking tools** like Symbaloo and Diigo let you organize links to online resources and share them with others.
- **Feed readers** like Feedly offer a central location to follow the blogs and websites that matter to you. Just tell them which ones to follow and they’ll update you on new content as soon as it’s available.
- **Content aggregators** like Flipboard let you collect online resources and turn them into your own web-based publication, which you can then share with others.
- **Visual curation tools** like Pinterest, elink, Wakelet, and Weje help you collect links to resources and display them in a way that’s visually appealing.
- **Online binders** like LiveBinders behave like actual binders, a space to collect and organize links to websites, uploaded files, embedded videos, even your own notes.

CURATE YOUR TWEETS

[Twitter](#) is one of those spaces in the digital world that can seem unruly at times. With [TweetDeck](#), users can organize their Twitter experience by creating columns for specific Twitter handles and hashtags. This tool curates your favorites into unique, scrolling columns that are constantly updated. Using this tool is a stellar way to keep on top of happenings at a conference, Twitter chat, or special event.

TEACHER USES

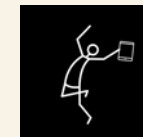
- Organize your own online articles and other school-related resources into collections (lesson ideas, classroom management, technology, and so on).
- Create collections of materials to share with students or parents. If you share with a curation tool instead of simply copying and pasting big batches of links, people will be much more likely to read what you send. For more on this, read [Are You a Curator or a Dumper?](#)
- Organize research for graduate school or other professional development.
- Collaborate with other teachers (even those who live far away) to collect and discuss resources.
- Use a curation platform to put together resources for a lesson students can work through on their own in a flipped, blended, remote, or hybrid learning context.

STUDENT USES

- Informally gather and organize resources for a research paper or other school project.
- Curate a list as a project in and of itself, to demonstrate research skills, notetaking skills, or summarization.
- Engage with other students in comments about curated items — rating each one’s effectiveness, for example.
- For more ideas, see the list of student projects in the article [To Boost Higher-Order Thinking, Try Curation](#).

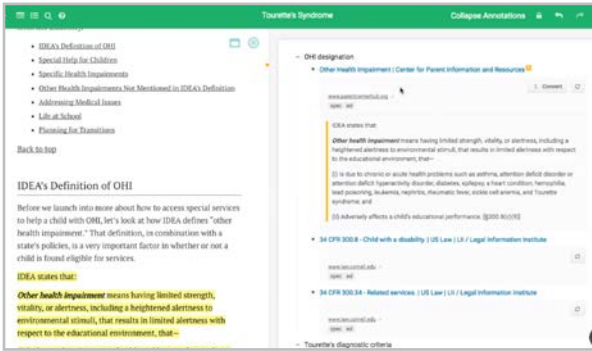
BROWSER EXTENSIONS

Many curation tools also have **browser extensions** you can add to your web browser (like Chrome or Microsoft Edge) that let the browser do the work. For example, if you find an article you want to add to a Pinterest board, you can just click the Pinterest extension on your toolbar and a box will pop up, asking if you want to save that article to a Pinterest board; you never have to actually open Pinterest to do it.



LEARN MORE ABOUT CURATION IN JUMPSTART

Curation is one of the 10 modules we study in JumpStart, our online technology course for teachers. Learn about the course [here](#).



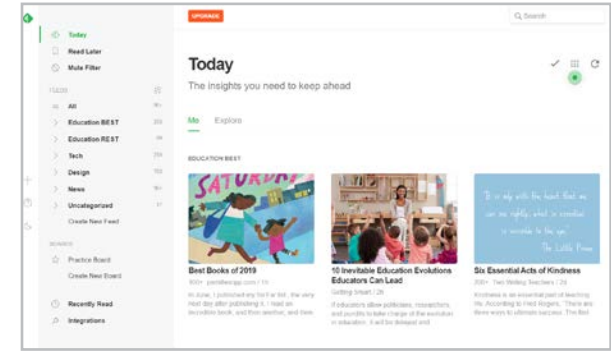
Diigo
diigo.com

Diigo allows you to neatly collect and annotate web pages, sort them by tag, and organize them into a personal library. You can also write detailed outline-style notes, making this a robust tool for research projects. This is an excellent tool for projects that require a combination of well-organized notes and annotated resources.



elink
elink.io

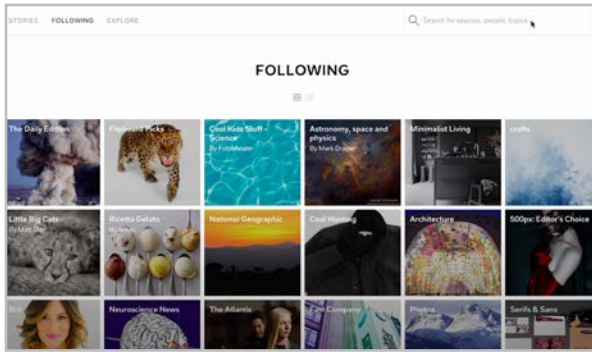
This visual bookmarking tool helps you gather links to online resources in an aesthetically pleasing way. After you grab a link to an online resource, elink pulls a title and image from the website, but everything is customizable: You can change the title, description, and image. Once your collection is done, you can further customize the look of the whole collection, then share the page with a unique URL.



Feedly
feedly.com

If you follow a lot of blogs or websites, you know it takes time to hop from one site to the next. A feed reader like Feedly solves that problem by keeping track of what's happening on your favorite sites in one central location. Every time a new post is published by that site, you'll get a preview of it on your Feedly page. To keep things organized, you can sort your feeds into different categories.

Similar: [Bloglovin](#)



Flipboard
flipboard.com

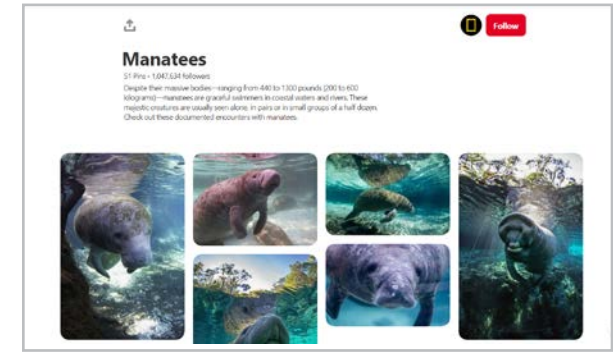
Create personalized magazines with Flipboard by simply dropping a URL into a collection of your choosing. The platform will design your magazine by continuously aggregating or collecting updates from chosen sites. Share your magazines or keep them private. Additionally, this tool allows you to follow people, hashtags, topics, or other curated magazines. Great for taming your social media experiences!

Similar: [Pocket](#)



LiveBinders
livebinders.com

LiveBinders behave just like physical notebooks, with tabs and sub-tabs that store separate pieces of content. These can include typed text, images, uploaded files, or embedded content; even entire websites. This tool would be perfect for organizing whole units of study, either for your own reference or to share with students, parents, or colleagues.



Pinterest
pinterest.com

On Pinterest, users set up “boards” where they “pin” online items. The end result looks like a bulletin board of images with captions. Each image (or pin) is a placeholder for the original article or web page. When you click a pin, you’re sent to that original page. Although Pinterest is known for things like fashion and food, it’s also a goldmine of teaching resources.

Similar: [Designspiration](#), [Pearltrees](#), [Raindrop.io](#)

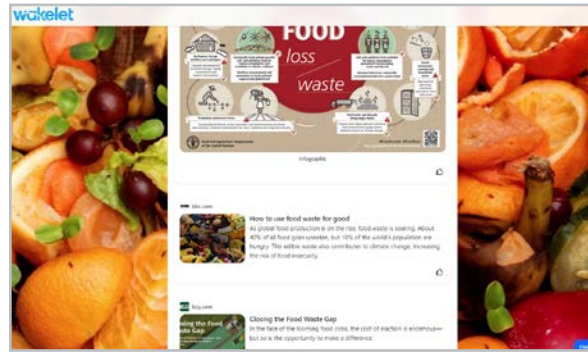


Symbaloo

symbaloo.com

With this visual bookmarking tool, users create webmixes, collections of tiles that take you to your favorite places online. A tile can take you to a whole website, a specific page, or anything that has a dedicated URL. Or create [Learning Paths](#), gaming-style virtual lesson plans that send students through a pre-determined path of tiles.

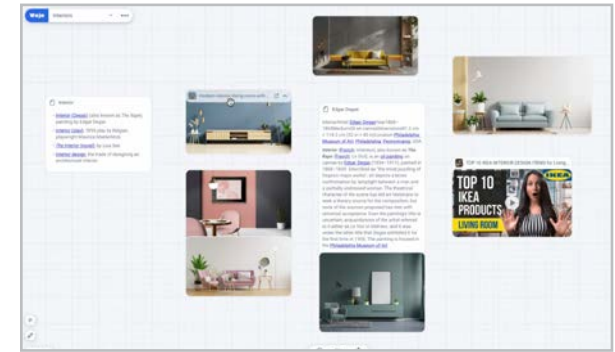
Similar: [start.me](#)



Wakelet

wakelet.com

This beautifully designed curation tool allows users to pull together all kinds of digital resources into a single, clean collection that can be shared online. You can include images, videos, links to articles, PDFs, your own text notes, even embedded Google Maps, audio tracks, and slideshow presentations.



Weje

weje.io

Formerly known as Webjets, this board-style tool might look like [Padlet](#) at first glance. But these cards work a little harder: They can contain images, embedded videos, Google Docs, attached files, even tables. Cards can be collected into folders, multiple folders can live on one board, and all cards can be collapsed or expanded, making it easy to gather large amounts of resources all in one place.

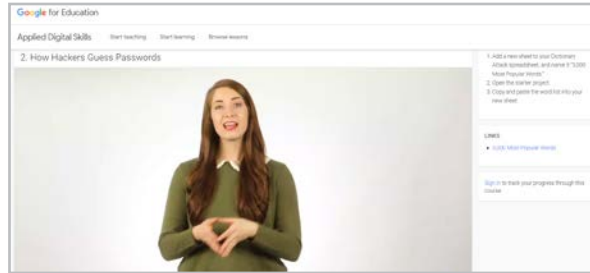
Similar: [Milanote](#)



Digital Literacy

As technology becomes a built-in part of our daily lives, protocols and best practices are evolving to guide us in how to navigate these tools ethically and safely.

Quite a few organizations and companies have put together comprehensive, free digital literacy programs. These can supplement technology courses, offered as an elective, or used in an advisory program. This page features three of these resources, along with another site that curates many others.



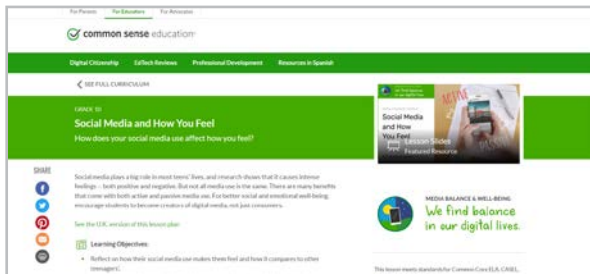
Applied Digital Skills
applieddigitalskills.withgoogle.com

This free hands-on curriculum from Google teaches practical skills like resume creation, budgeting, and productivity with Google tools, along with other digital citizenship lessons.



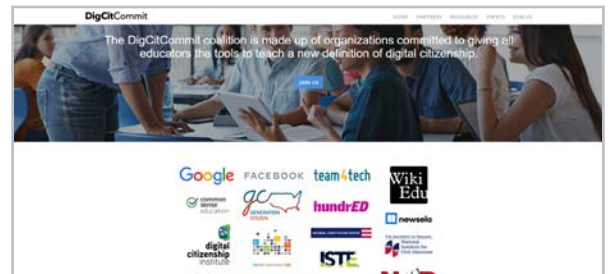
Be Internet Awesome
beinternetawesome.withgoogle.com

Google created this free curriculum to “teach kids the fundamentals of digital citizenship and safety” with topics like thoughtful sharing, recognizing fakes, and staying safe online.



Common Sense Media
commonsense.org/education/digital-citizenship/curriculum

This comprehensive K-12 curriculum includes topics like media balance, privacy, and digital identity. See our post about this site [here](#).



DigCitCommit
digcitcommit.org

This coalition of organizations is committed to educating all students on digital citizenship. Their site curates some of the resources listed here, along with [many others](#).



Digital Portfolios

Assessing student work should ideally go way beyond numbers. Test scores only give us a snapshot of student performance from a single day, and grades can be incredibly subjective. For that reason, more teachers are exploring ways to move away from traditional grading practices.

The Facebook group [Teachers Throwing Out Grades](#) has over 12,000 members. One of the tools these teachers use instead of grading is portfolio assessment.

In the digital age, “portfolio” can mean much more than images or written documents. Technology lets us include just about any kind of media to represent what we can do: A student who excels at coding could create a gallery of [Scratch](#) projects. An athlete could build a portfolio of videos of athletic performance or game clips. A student filmmaker could share a collection of short films made with [animation](#) tools.

Soon, building digital portfolios may be more than just a trend: More colleges and universities are [including portfolios](#) as part of their application process.

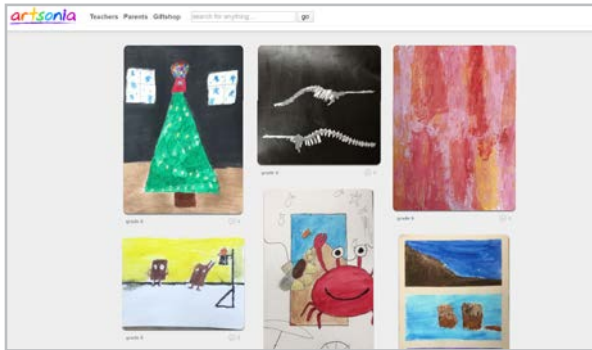
The five platforms in this section provide tools for building portfolios, whether it be for assessment or to share them with parents, colleges, or the rest of the world.

MORE PORTFOLIO TOOLS

This section includes tools that are designed to serve as digital portfolios, but other tools in this guide can get you similar results.

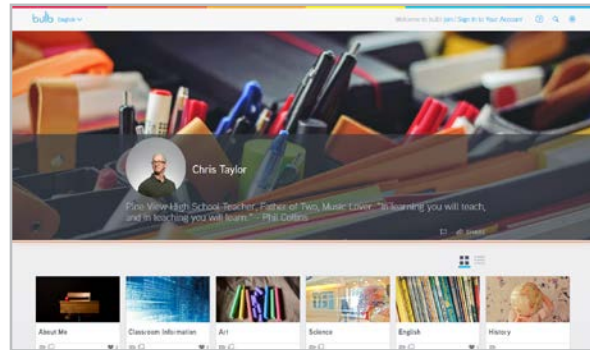
Websites created with any of the [blogging and website building](#) tools could make fantastic portfolios, and some of the [curation](#) tools like elink, Wakelet, and Weje could do the same. Padlet, which is now in our [collaboration and project management](#) section, would be a great platform for putting together a fast online portfolio.

Anyone who is focused mainly on photography should also consider [Flickr](#), a popular site where photographers can store, organize, and share photos.



Artsonia
[artsonia.com](https://www.artsonia.com)

This free site is an “online museum” where students can upload images of their artwork into portfolios. Parents can view and comment on the artwork and buy items with their child’s artwork on it: T-shirts, coffee mugs, magnets, even cutting boards, and 20 percent of each purchase goes back to the art teacher’s classroom.



bulb
my.bulbapp.com

On this beautifully designed platform, users can create separate portfolio pages for different purposes and organize them into collections. The individual pages can include text, images, videos, embedded content from other apps, and attached files. Privacy can be set for individual pages, making it easy to decide who sees what, and pages can be revised and updated at any time.

Similar: [Fanschool](#)



Portfoliobox
portfoliobox.net

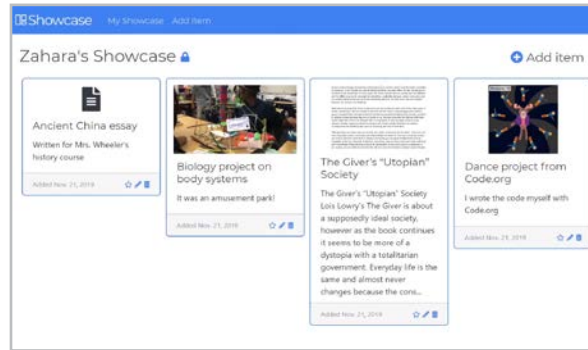
This is the kind of platform people head to when they’re ready to take their online portfolio to the next level. Built for “creatives” — visual artists, photographers, animators, musicians, fashion designers — Portfoliobox gives users tools to build an elegant, customized website that showcases images and videos of their work. Discount pricing is available for students at [partner schools](#).

Similar: [Canva](#)



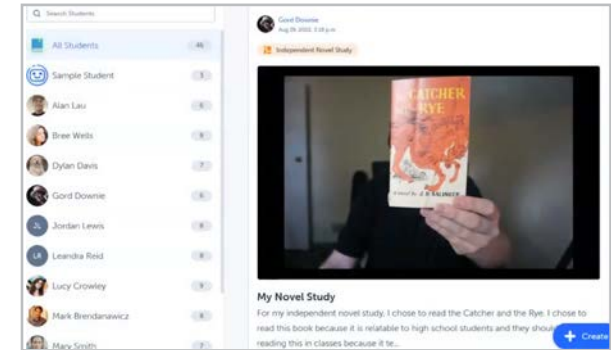
Seesaw
web.seesaw.me

On Seesaw, students and teachers post audio clips, videos, photos, drawings, notes, or links, then annotate items with text or audio. Parents can view and comment on their child’s portfolio at any time. The platform also allows teachers to create and assign [activities](#) to students and send announcements and messages to students and parents.



Showcase
showcaseedu.com

On this simple platform, students can gather photos, documents, and links to online resources into a single, clean portfolio. This can include art projects, videos, writing pieces, coding projects, Desmos graphs, even whole websites. Each item gets a customizable title and description, and portfolios can be made public or set to private with a school code, so that only teachers and other students can view it. **Note:** The site’s social media shows no activity since 2020, so we’re not sure it’s still an active platform.



SpacesEDU
spacesedu.com

This is a newer tool designed to “tell the stories behind the grades.” With a Facebook-style flow for educational communication among teachers, students, and families, SpacesEDU showcases learning both through the app itself and through a variety of other apps. It is similar to Seesaw, but directed more toward older learners.



Drama & Theater Arts

For many, the idea of standing up in front of a crowd is terrifying, but for those who have been called to the stage, it is absolutely exhilarating. Theater teachers, drama directors, and crew managers bring a special magic to students who crave a space in the spotlight. Theater arts classes are so much more than “acting out scenes” — they build confidence and empathy, help students learn to think on their feet and accept feedback, help students discover and develop their identities, foster a sense of belonging, and offer plenty of opportunity for project management and authentic collaboration.

But using acting techniques should not be limited to electives. Leaning into acting in your daily curriculum can also have a substantial impact on student learning. The theory of [embodied cognition](#) tells us that in any field of learning, abstract concepts are better understood better when we “map” them onto our brains through physical activity. This can be as simple as a gesture or physical simulation of an idea or as complex as a skit or a play.

Besides the resources listed here, you might also explore these sites:

- Take a tour of astonishing theater spaces around the globe with Google Arts and Culture’s [Dramatic Virtual Tours of Stages Around the World](#).
- Part of the stage crew? Try [Matt Kizer](#)’s simulations for scenic and lighting design or generate random theater design challenges with his [Drama Machine](#).
- [PBS LearningMedia](#) offers a collection of videos and other resources about theater arts.

RESOURCES FOR IMPROV

Improvisation games bolster creativity and bring some laughs to the day, all while supporting speaking and listening standards. [Spolin Games Online](#) and [Learnimprov.com](#) are well-organized sites to help you start to bring improv into your classroom.

MORE TOOLS IN THIS GUIDE

These tools were not created explicitly for theater arts, but they would be helpful in a drama context:

[Extempore](#) allows students to submit audio or video recordings in response to teacher prompts. Feedback can be given in the app.

[myShakespeare](#) offers resources to help students better understand some of Shakespeare’s most popular works.

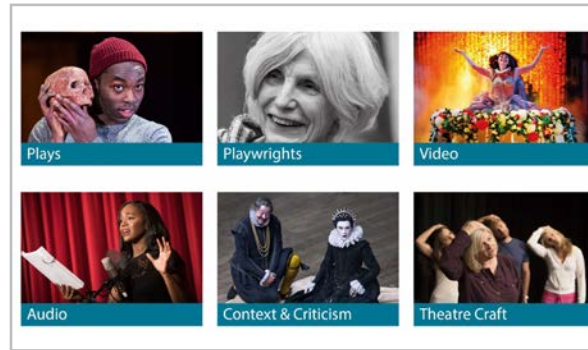
[WeVu](#) allows students to upload videos, then the teacher can attach comments to specific timestamps on the videos.



Drama Notebook

dramanotebook.com

This subscription-based site offers a comprehensive collection of resources for drama teachers: a library of lesson plans on dozens of topics, a big collection of original, royalty-free plays organized by cast size, and a private Facebook group for drama teachers. Full teaching units and professional consulting sessions can be purchased without a subscription.



Drama Online

dramaonlinelibrary.com

A well-organized collection of plays, video and audio performances, information about playwrights, and books about the history and craft of theater. While a subscription is required to access most materials, the site offers summaries and production information about each play which can be used as inspiration and guidance for choosing your next play without a subscription.

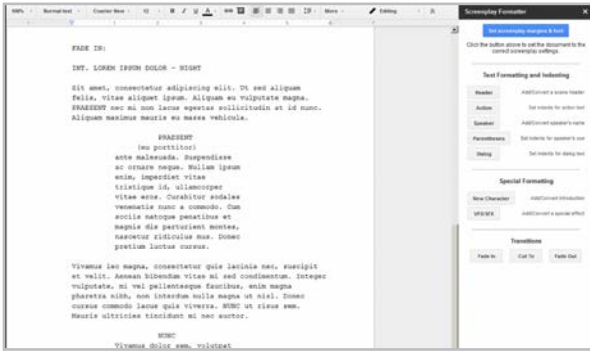


Run Lines With Me

runlineswithme.com

Being “off book” for rehearsal can be a struggle. Apps like Run Lines with Me make it a snap to memorize. Start by recording a scene, then when it is your line, tap a button on the app. You will always have an acting partner with whom to practice. This is for iOS only.

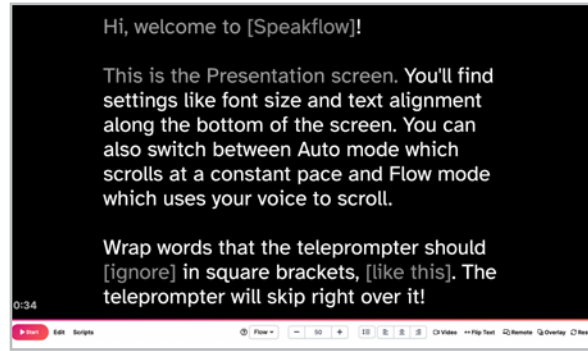
Similar: [Rehearsal Pro](#), [Script Rehearser](#) (Android)



Screenplay Formatter

workspace.google.com/marketplace/app/screenplay_formatter/329481250452

Writing a script or screenplay is a whole lot easier with this free Google Docs Add-on. Buttons automate the time-consuming formatting of script writing, letting you stay focused on the creative process.



Speakflow

speakflow.com

Speakflow is a teleprompter that scrolls automatically with your speaking and allows the user to change font size and even input stage notes. It can be used on a mobile or desktop device and is as simple and clear as they come!

Similar: [Promptr](#)



Theatrefolk

theatrefolk.com

Visitors to this site can purchase teaching resources and student-friendly plays, explore downloadable [free resources](#), read articles about teaching drama on the [blog](#), listen to the podcast, or explore videos about theater on the YouTube channel.



Early Learners

When we hand a child a device, they don't wait for directions — at least none of the kiddos we know do! They jump right in and start pressing buttons, listening for clicks, exploring like it's a dinosaur dig. This natural desire to explore creates an environment for early learners to be learning in a playground like no other!

There are so many technologies that exist for younger students. Many offer a blend of hands-on work and screen time, providing manipulatives for students to use in conjunction with the screen. In this section, we'll feature tools that are geared for pre-K

through 2nd grade students and their teachers, plus links to tools that appear in other sections of this guide that can also be used with older students.

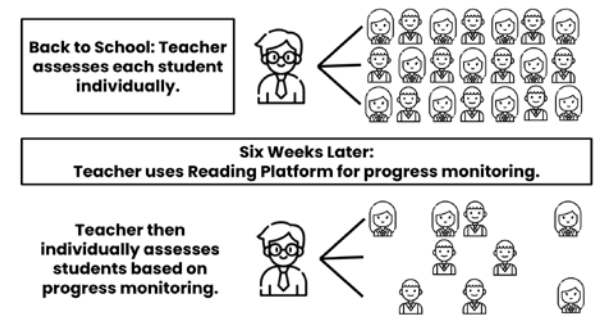
COMBINING TECH WITH HUMAN TEACHING

Of course, tech can never replace all the things a real teacher can do for their students, both emotionally and academically. But tools like the ones featured here can support classroom learning. With the integration of Artificial Intelligence, many tools adapt to student responses, providing data that teachers can use to adjust instruction. Often, these technologies enable teachers to assess an entire class in the time it would take to assess a single student, giving teachers a snapshot that helps them determine where to begin.

One example of this type of technology integration is the use of [literacy tools](#) like Readlee, Amira Learning, or Microsoft's reading tools. Many times, teachers assess each student individually at the beginning of the school year.

They can then use any of the above tools for progress monitoring six weeks later. From that

data, they individually assess students who have not reached their target goal. This is just one example of how technology can support early ELA; there are tools and platforms for other content areas, too.



CONCERNS ABOUT SCREEN TIME

Debate surrounding screen time research and the methodologies of early childhood is not likely to reach a consensus anytime soon. There is, however, consensus on one thing — when used at any age, there must be a balance between screen time and “tangible” time, especially in the classroom.

COVID has drastically changed the amount of time kids spend on screens, both academically and socially. This impacts all ages, not just our older learners. While the American Academy of

Pediatrics (AAP) [suggests limits of screen time](#) based on age, they also recognize the need to differentiate quality screen time. “Many studies lump all screen time together into one category, though it seems unlikely that video chatting with Grandma, for example, would have much in common with playing ‘Grand Theft Auto V.’”

DEVICE TIPS IN AN EARLY CHILDHOOD CLASSROOM

Management of devices in classrooms can depend on the age of students, the nature of the classroom and the type of device, but there are some tried and true measures that work well in almost any situation.

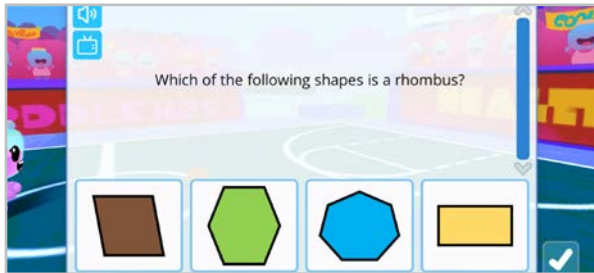
- **Model, model, model!** Practice with students until you think they have it, then practice some more. Practice how to retrieve devices, the log-in process, opening tools, closing tools, voice volume when on devices, seeking help, returning devices, and so on.
- **I do, We do, You do:** Introduce new tools to the whole group, then work through the tool together before sending kids off on their own to practice.
- **Establish a charging routine:** Make sure students know what to do if their device is low, how to plug in devices or where to put devices that need charging.
- **Talk about device responsibility:** Discuss how the responsibility for a device differs from responsibility for something like a book, including replacement costs.
- **A picture says a thousand words:** Illustrate best practices by taking pictures of your students holding devices properly, plugging in devices, storing them.
- **Use visual cues:** Avoid answering the question “Are we using our devices today?” by utilizing stoplight management: *Red light:* Devices will not be used. *Green light:* Devices will be used. *Yellow light:* Devices might be used.
- **QR codes are your friend!** They are the quickest way to get younger learners to the right spot.
- **Tools like Flip and Seesaw** are great for both audio directions from teachers and students recording their thinking or reading their work aloud.

MORE EARLY LEARNING TOOLS IN THIS GUIDE

These tools also work well with pre-K-3 learners, but their full listings are in other sections. Click the name of the tool to go to its listing and the video icon to watch the tool in use with younger students.

- ▶ [Amira Learning](#)
Literacy
- ▶ [Book Creator](#)
Book Publishing
- ▶ [Code & Go Robot Mouse](#)
Makerspaces: Coding
- ▶ [Epic](#)
Content Libraries
- ▶ [KIBO](#)
Makerspaces: Coding
- ▶ [PebbleGo](#)
Content Libraries
- ▶ [Quiver](#)
Virtual & Augmented Reality
- ▶ [Seesaw](#)
Digital Portfolios

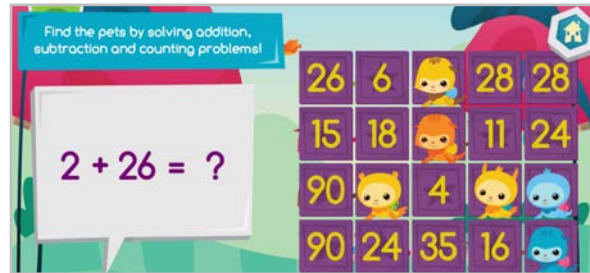
Boddle Learning | Duck Duck Moose | Eggroll Games | Hairy Phonics | MathBRIX | Square Panda | Storyline Online | Storynory | Tiggly | TumbleBooks | BYJU's



Boddle Learning

boddlelearning.com

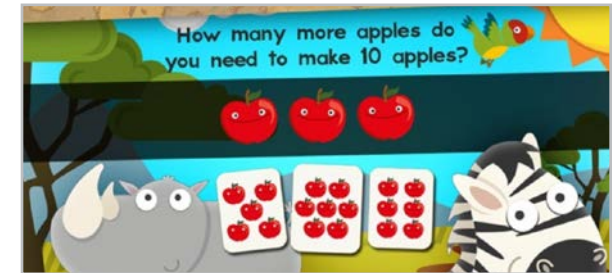
Students complete interactive quests in this uber-engaging, 3D environment by answering adaptive math questions. A robust teacher dashboard is included.



Duck Duck Moose

duckduckmoose.com

These education-based apps, for both Android and iOS, engage young learners in math, phonics, and more, and they include the popular [ChatterPix Kids](#) game.



Eggroll Games

eggrollgames.com

Specifically designed for pre-K-2nd grade, Eggroll Games supplement math learning in easy-to-follow, interactive, and engaging games.



Hairy Phonics

nessy.com/en-gb/shop/apps

Hairy Phonics has a complete reading and phonics program based on the science of reading. The supporting apps work well as stand-alone supplements for early learners.



MathBRIX

mathbrix.com

Math and LEGO-style bricks are always better together, and MathBRIX utilizes children's love of these toys to create engaging activities for learning math.



Square Panda

squarepanda.com

This playset brings phonics and reading into the tactile space with tangible tiles, books, and more. The multisensory approach encourages engagement in even the youngest learners.

Boddle Learning | Duck Duck Moose | Eggroll Games | Hairy Phonics | MathBRIX | Square Panda | Storyline Online | Storynory | Tiggly | TumbleBooks | BYJU's



Storyline Online
storylineonline.net

Founded by the SAG-AFTRA Foundation, Storyline Online pairs celebrity readers with picture books and has an ever-growing library of books for kids to watch.



Tiggly
apps.apple.com/us/developer/tiggly/id724916087

These incredible apps work with or without the tangibles, connecting kids to math, reading, and phonics in ways that leave them asking for more!



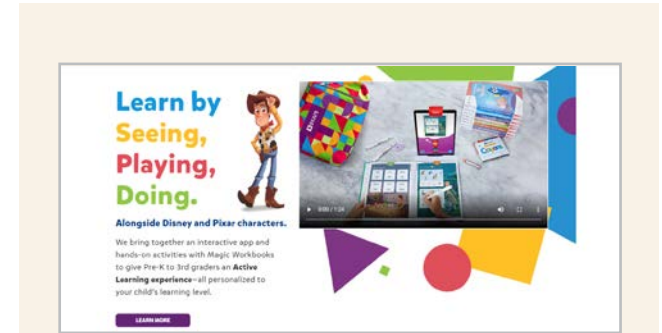
Storynory
storynory.com

With original stories and fairytales, Storynory is a great resource for audiobooks to use with a whole class or in individual listening stations.



TumbleBooks
tumblebooks.com

Often available free through the public library, TumbleBooks provides thousands of titles, animated and ready to play, for all ages.



BYJU's
byjus.com

BYJU's philosophy is "education for all" and they are working hard to provide exactly that – an engaging, hands-on education for all learners. BYJU's has acquired many of our favorite platforms, including OSMO and Epic! Additionally, they have tools that provide coding instruction, music instruction, and 1-on-1 tutoring for all ages.

Later this year, BYJU's has plans to release science supplements that are on a whole different level – all while continuing to engage learners across the globe, at all ages.



Feedback

Before digital tools arrived, giving feedback was an incredibly time-consuming process: Whatever feedback we gave had to be done verbally or in writing, and there was no way to speed it up or replicate it for repeated use. That placed big limits on how much feedback we could give.

The tools in this section make feedback easier, more effective, and more efficient. With these tools, teachers (or students) provide written or

voice comments on student work in an online space, and because they are digital, we can save, review, and replicate them for future use.

CLASSROOM USES

- Provide ongoing feedback to students on all kinds of written work, from formal writing pieces to lab reports.
- Have students collaborate on assignments, using comments to document their collaboration and provide evidence of how much effort was put into the project by each student.
- Have students submit online journals and engage in an ongoing, back-and-forth discussion by using feedback tools. See [this post](#) about how dialogue journals work.
- Have students provide peer feedback and assess their work not only on the quality of the product itself, but on the quality of the feedback they give others.
- Invite parents to contribute comments, questions, and feedback to documents.

MORE FEEDBACK TOOLS

Many tools in this guide contain built-in feedback capabilities.

- Some tools in the [assessment](#) section, like Formative and Kiddom, include feedback options.
- Most [learning management systems](#) have robust feedback systems.
- The [collaboration and project management](#) tools are natural platforms for giving feedback.
- Platforms like [Google Workspace](#) and [Microsoft's](#) suite of tools offer commenting features within many of their applications.

FASTER FEEDBACK

The faster you can give feedback, the more you can do. In this 2020 interview with Matthew Johnson on [Flash Feedback](#), he shares three strategies for giving feedback more quickly.



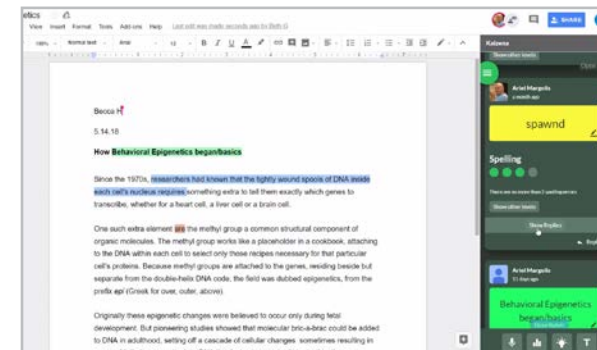
EdLight
edlight.com

Whether remote or in person, collecting student work and providing specific feedback is easy with EdLight. When teachers post assignments they list required criteria for the task. Students take a photo of their work using any device. Teachers then comment directly on the work, checking off included criteria before sending it back. Teachers can view an entire class's assignment and note gaps or needs at a glance.



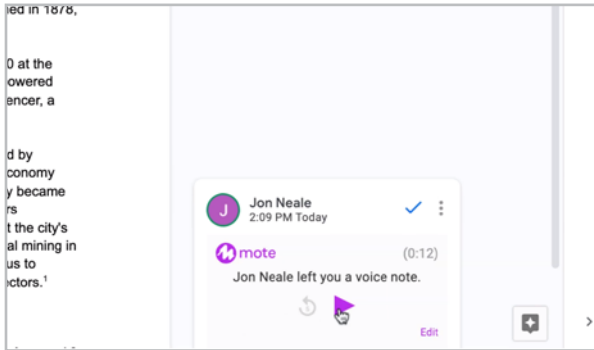
Floop
floopedu.com

Floop was built by teachers to allow for feedback with much faster turnaround time: Students send pictures of their work in progress to the teacher, along with questions they need help with. The teacher views the work, types in comments that are anchored to specific locations on the photos, then sends it back to students, starting a feedback loop that allows for iteration and improvement. Also included is an anonymous peer-review option.



Kaizena
kaizena.com

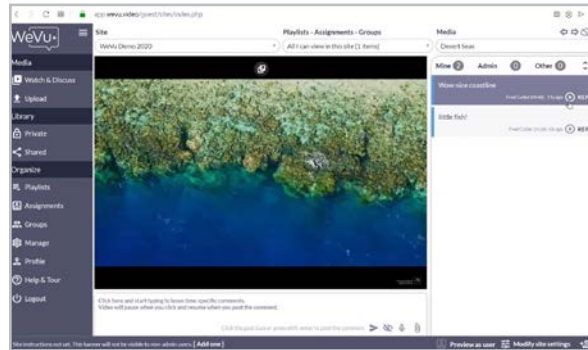
With this web app and Google Docs add-on, teachers can leave many types of feedback: written comments, voice recordings, links to lessons on a concept related to the issue found in the student's writing, and rubric-based feedback using rubrics created inside the app. To save time, teachers can build a library of frequently used text or audio comments to pull from. When students receive feedback, they can reply to it with voice or text.



Mote

justmote.me

This Google Chrome extension allows users to add voice comments in the comment field of any Google Docs, Slides, or Sheets file, or inside Google Classroom. With the paid plan you get a longer time limit for comments, auto-generated transcriptions of comments, and the ability to save voice comments for re-use in an online library.



WeVu

wevu.video

This platform allows students to upload videos and the teacher can attach comments to specific timestamps on the videos. This type of tool is invaluable for performance- or skill-based courses like music, theater, languages, physical education, public speaking, or nursing.

WHAT HAPPENED TO PEERGRADE?

Peergrade, a platform that facilitates peer feedback, has been featured in this section for quite a long time. Now its features have been absorbed into a larger platform, [Eduflow](https://www.eduflow.com), which is in our Flipped & Blended Learning section.

[This video](#) was created to show former Peergrade users how to perform the same functions in Eduflow.



Financial Literacy

When it comes to curriculum, financial literacy is often an afterthought, even though learning how to responsibly manage money is one of the most important skills students will need as they enter adulthood.

The sites in this section offer courses and other activities students can do as part of a class at school or on their own. They offer lessons in banking, creating and sticking to a budget, using credit, saving for the future, and managing real-life expenses like rent, utilities, and entertainment, along with bigger financial projects like starting and running a business.

Many of the platforms featured here do more than simply deliver information about money; they offer some type of “immersive” experience, where students are put into various real-life scenarios where they have to make decisions, then see how their decisions play out. These would be outstanding tools for family and consumer science classes or for any kind of independent study project.



PERSONAL FINANCE YOUTUBE CHANNELS FOR KIDS & TEENS

[Easy Peasy Finance](#)

[MoneyMoments](#)

[Money Moves for Teens](#)

APPS AND GAMES TO SUPPORT FINANCIAL LITERACY

These apps and games can supplement students’ financial literacy in more of a game-like environment.

Build Your Stax

buildyourstax.com

Claim Your Future

claimyourfuture.org

Payback

timeforpayback.com

Savings Spree

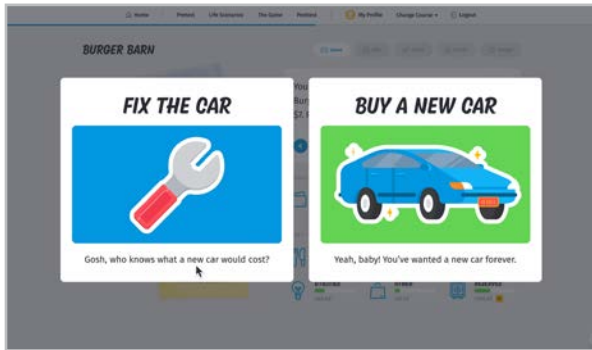
apps.apple.com/us/app/savings-spree/id430150476

Spent

playspent.org

The Uber Game

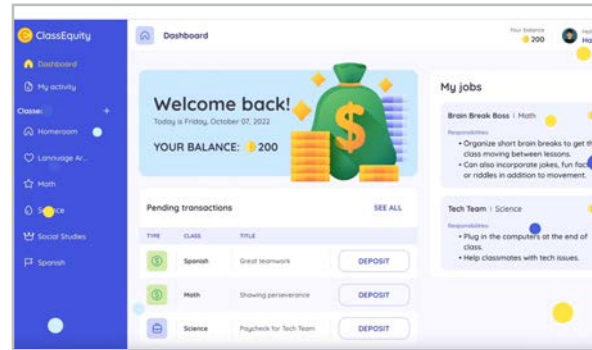
ig.ft.com/uber-game



Banzai

banzai.org

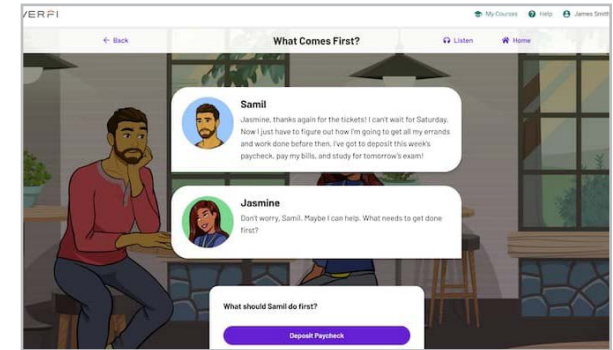
This site offers free interactive financial literacy courses for students ages 8-18. The courses put students in real-life scenarios where they make financial decisions and learn the consequences. Lessons come with printed supplementary materials, a robust library of articles, and interactive “coaching sessions” to teach financial literacy concepts.



ClassEquity

classequity.com

The fun simulated mini-economy on ClassEquity allows teachers to reinforce positive classroom culture while teaching financial literacy. Students earn money for classroom jobs and bonuses for positive behavior, and they pay rent on classroom necessities and spend extra money in the class store. Free and paid plans are available.



EVERFI

everfi.com/k-12/financial-education

Like Banzai, this site is also free of charge. The curriculum is segmented into multi-lesson units for elementary, middle, and high school, focusing on specific themes like saving for college, banking and identity protection, and starting your own business. Courses are also available on college and career readiness, health and wellness, and SEL.

NGPF Next Gen Personal Finance

RESOURCE 4: THE ART OF THE DEAL - HOW TO HAGGLE FOR A USED CAR

They say that knowledge is power, which is why it's so important to understand how auto loans work. On top of that, learning to negotiate well can be a huge asset. Watch the video by Elisabeth Leamy on [The Art of the Deal: How to Haggle for a Used Car](#), to learn how.

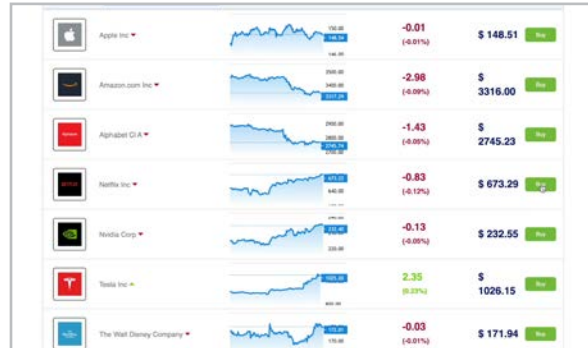


Next Gen Personal Finance

ngpf.org

If you want to teach an in-depth course on financial literacy in middle or high school, the resources at Next Gen Personal Finance are outstanding. They offer full curricula for nine-week, semester-long, or year-long courses on a wide variety of topics like credit, investing, behavioral economics, taxes, and insurance, plus extensive professional development and community support for teachers.

Similar: [Intuit Financial Education](#), [MoneySense \(U.K.\)](#)



Stash101

stash.com/stash101

Formerly known as PayGrade, this free site offers a simulated classroom economy where students earn a virtual “salary” by doing classroom jobs, then manage that money in checking and savings accounts, use credit cards, pay bills, budget their money, and even “invest” in the stock market. Teacher lesson plans are also available to teach financial literacy concepts.

MONEY MANAGEMENT TOOLS FOR KIDS AND TEENS

A handful of apps allow parents to deposit real or virtual money into kids’ accounts, then provide tools for kids to budget and save for things they want to buy. Some of these use “virtual” money, while others can be tied to actual debit cards. Although these wouldn’t be used in a classroom setting, you might recommend them to parents who want to give their kids practice in managing their own money.

Greenlight
greenlight.com

GoHenry
gohenry.com

RoosterMoney (U.K. only)
roostermoney.com



Flashcard Creators

Flashcard creation sites allow users to make, store, and study their own flashcards. It's a simple concept, but these tools offer features that are a step up from the index cards you once carried in your back pocket.

At the most basic level, users make simple on-screen cards: term on one side, definition on the other. But these tools make suggestions for what you might want to write, pulling from their inventory of existing flashcards, so you can benefit from other people's phrasing on the same topics. Users can also add images

and even voice recordings to the cards — this really expands the possibilities for the kinds of material that can be studied.

Once the cards are made, they can be “flipped” on the screen, and you shuffle through them just like paper flashcards. But the tools featured here will also keep track of which ones you got wrong, sort them by difficulty, and best of all — they're accessible through any mobile device, so they can be shared and re-used, and you never have to worry about losing them.

CLASSROOM USES

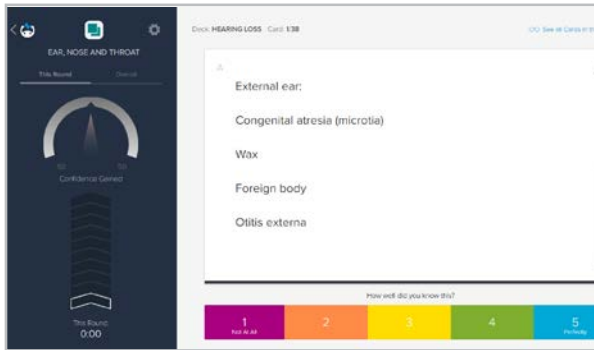
- Students can make and study with flashcards and share them with each other.
- Teachers can create flashcard sets to share with students.
- Teachers can deliver lessons on how to create flashcards effectively and teach students the most effective ways to study with them — not everyone knows how to make the most of these tools. See the box at right for more information.

WHAT IS RETRIEVAL PRACTICE, AND WHY SHOULD YOU CARE ABOUT IT?

Studying flashcards is one of the most common forms of **retrieval practice** — trying to recall information without having it in front of you. Cognitive scientists have done a lot of research on this in the past decade or so, and the evidence keeps pointing to retrieval practice as one of the most effective ways to store information in long-term memory. Learn more in these articles:

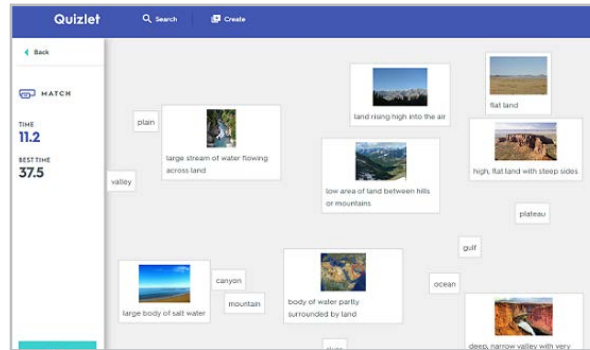
- [Retrieval Practice: The Most Powerful Learning Strategy You're Not Using](#)
- [Four Research-Based Strategies Every Teacher Should Be Using](#)
- [Six Powerful Learning Strategies You MUST Share with Students](#)

You can also find comprehensive research summaries at retrievalpractice.org.



Brainscape
brainscape.com

More than just a flashcard creator, Brainscape applies the principle of spaced repetition to regulate your study, giving you repeated exposure to the concepts you feel less sure about, and less to the ones you know more confidently. The free plan allows individual users to create and share cards and gives you access to some pre-made decks. Paid plans have more features and access to premium decks, which have been professionally certified.



Quizlet
quizlet.com

Quizlet takes digital flashcards to a whole new level. Once a user has created a set of cards, they can be reviewed the traditional way by “flipping” them on the screen or with a fill-in-the-blank worksheet, a multiple-choice quiz, a matching game, or even a team competition. Card sets can be shared, and users can search Quizlet’s large library for other user-created sets.

Similar: [Cram](#), [Knowt](#)

FOUR MORE FLASHCARD TOOLS THAT ARE WORTH A LOOK

[Bitsboard](#) is an app that allows teachers to create a variety of activities, including flashcards, for children as young as kindergarten.

[Flippity](#) lets you turn a Google spreadsheet into a set of online flashcards. You can also create word searches, crossword puzzles, bingo cards, and Jeopardy!-style quiz games.

[GoConqr](#) is a platform where users can create and share flashcards, mind maps, quizzes, and other materials for free.

[StudyStack](#) is geared toward middle school and older. It contains pre-made flashcards and allows you to create your own, then play games with them.



Flipped & Blended Learning

Before 2020, the idea of a [flipped](#) lesson — where direct instruction takes place at home and practice and application happen at school — was still kind of cutting edge. When the global pandemic forced schools into remote and hybrid learning, suddenly every teacher had to quickly learn how to package their direct instruction into some container that could be delivered online.

Moving forward, many teachers may continue to deliver much of their direct instruction digitally, saving face-to-face time for more interactive stuff. This will probably take the shape of

blended learning, where the “flip” happens during class time: Students access content through devices and engage in whole-class or small-group activities. [This video series](#), featuring blended learning expert Catlin Tucker, goes in depth on how to make this work. For more from Tucker, read her 2022 guest post on Cult of Pedagogy, [Blended Learning: Four Models that Work](#).

The tools in this section help teachers with flipped or blended learning, letting them grab online videos and add assessments, track student viewing time, and access libraries of videos on just about every topic imaginable.

Other tools in this guide can also help create flipped lessons: [interactive posters](#), [comic strip creators](#), and [podcasts](#) all can be used to present content in a blended lesson. Another format is the HyperDoc (read more [here](#)).

Note: Most tools featured here build lessons around materials that already exist; they don’t help you create videos. To do that, you’ll need to use [screencasting](#) or [video production](#) tools.



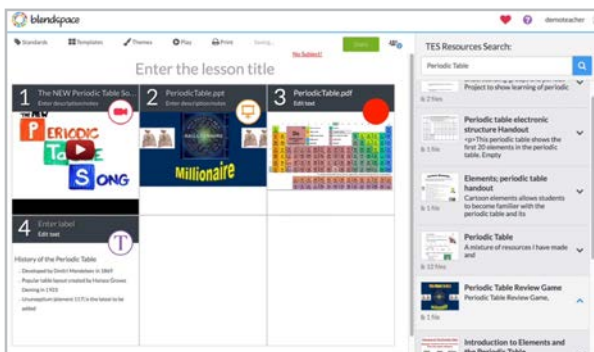
THE MODERN CLASSROOMS PROJECT NEXT-LEVEL BLENDED LEARNING

Launched in 2018 by two Washington, D.C., math teachers, [The Modern Classrooms Project](#) trains educators to use blended learning to create self-paced classrooms where students only progress when they reach mastery. Teachers can learn through MCP’s [free course](#) or by enrolling in their [virtual mentorship program](#).

MCP’s co-founder, Kareem Farah, has appeared on the Cult of Pedagogy podcast three times. You can find all three episodes and his guest posts [here](#).

Cult of Pedagogy is an affiliate for the Modern Classrooms Project.

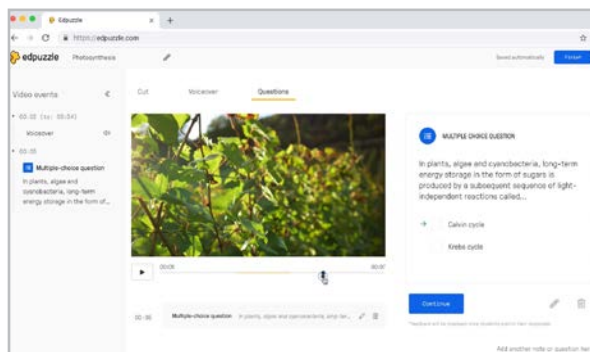
Blendspace | Edpuzzle | Eduflow | InsertLearning | Mindstamp | Perusall | PlayPosit | Sutori | TED-Ed | Microlearning



Blendspace

blendspace.com

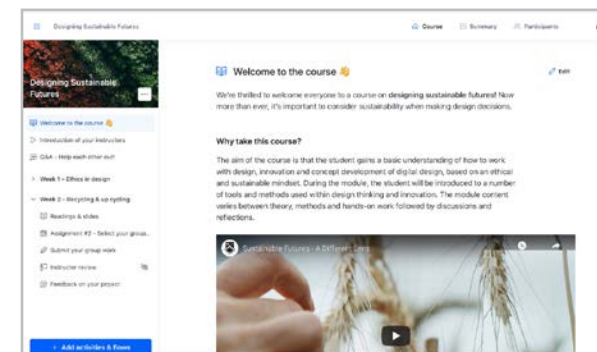
Many flipped learning tools focus primarily on video. Blendspace lets teachers put lessons together with a combination of online resources: videos, PDFs, images, websites, even notes you create yourself, right in the platform. Quizzes can also be added to assess student understanding. If you're short on resources, they can be purchased from the [Tes Marketplace](#) and imported into your lessons.



Edpuzzle

edpuzzle.com

Edpuzzle lets you build online lessons around videos. Start by importing your own video, choosing an [Edpuzzle Original](#) video, exploring teacher-created lessons inside the Edpuzzle library, or [recording your own video](#) right inside the platform. You can trim the video to show only selected parts, add voice comments, and write questions to come up at any point in the video. After students complete the lesson, you'll get analytics about how long each student watched, which parts they re-watched, and individual and whole-class responses.



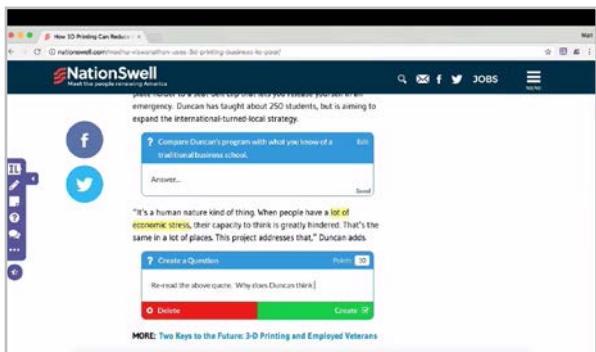
Eduflow

eduflow.com

Create intuitive learning “flows” by combining class material with hands-on and collaborative learning activities. This can range from a single assignment to a full online course. Flows can contain text, videos, discussion threads, space for student submissions, and peer learning activities. Teachers can also facilitate peer review between students, as this platform houses the tools that were once available on the peer review platform Peergrade.

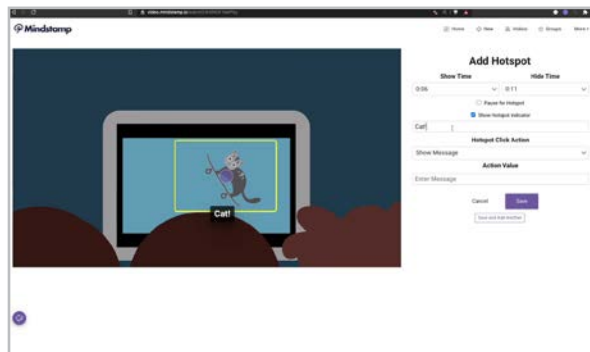
Similar: [Adobe Captivate](#), [Articulate](#)

Blendspace | Edpuzzle | Eduflow | InsertLearning | Mindstamp | Perusall | PlayPosit | Sutori | TED-Ed | Microlearning



InsertLearning
insertlearning.com

This Chrome extension allows you to go beyond video and build lessons with a variety of online content, pulling it all together inside an existing website, effectively altering that page to meet your instructional needs. Start with any web page, then highlight text, add notes, embed questions that students answer right on the page, and embed all kinds of other content like videos, [Quizlet](#) flashcards, and [Coggle](#) mind maps. To get started with this free tool, watch their [Getting Started playlist](#).



Mindstamp
mindstamp.io

This tool lets you start with any video (through upload or link to YouTube, etc.), then layer all kinds of interactive features: buttons, hotspots, questions, voice clips, and so much more. You can draw on the video, generate a transcript, and get a full report of user interactions after the video has been watched. This is a paid product (after free trial), but their FAQs say they offer discounts for educational institutions.



Perusall
perusall.com

This platform provides an opportunity for flipped reading. Dubbed as “social annotating” that creates interactive, engaging reading experiences, Perusall allows teachers to upload or search for texts and post them to the platform, where students then read and annotate. Insights are also provided to the teacher on time, interaction, and overall engagement. This is completely free for educators and educational institutions.

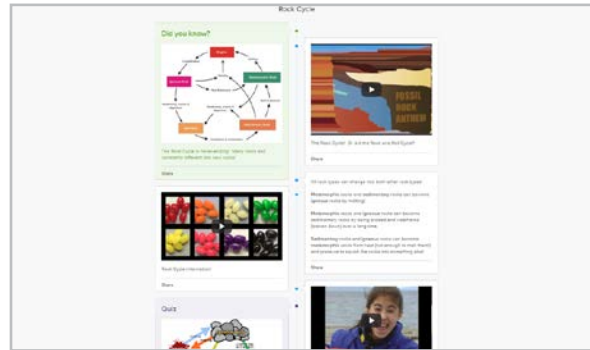
Blendspace | Edpuzzle | Eduflow | InsertLearning | Mindstamp | Perusall | PlayPosit | Sutori | TED-Ed | Microlearning



PlayPosit

playposit.com

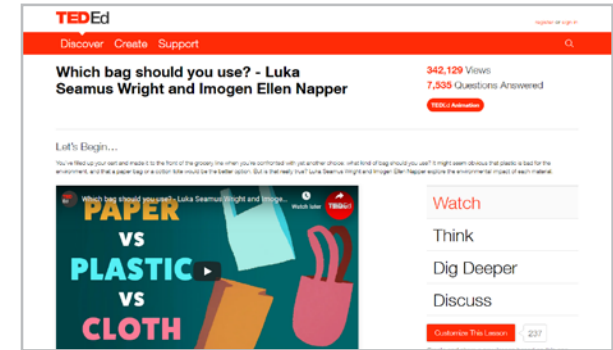
In PlayPosit, users create “bulbs,” lessons that consist of a pre-recorded video overlaid with teacher-created questions. Start by choosing a video from YouTube or Vimeo. Next, add interactive elements like multiple-choice or free-response questions, polls, discussion questions, and “reflective pauses,” which stop the video but don’t require a student response. When students complete a lesson, you get the results in your dashboard.



Sutori

sutori.com

On this platform, users build a sequence of items on a vertical timeline: a text box, a discussion forum, an image, a video, an audio clip, and so on. If you have a resource with an embed code, like a [Flip](#) or [PhET Simulation](#), you can insert that, too. And to check for student understanding, quizzes can be added. In addition to flipped learning, Sutori would also be a great tool for [curation](#) and [presenting](#). To experience Sutori for yourself, explore their [gallery](#) of sample projects.



TED-Ed

ed.ted.com

On this site, users can build lessons around any TED Talk or YouTube video. You can write multiple-choice and open-ended questions, add explanatory text with links to other resources on the topic, and add a section where students can discuss the video. You can also borrow one of the TED-Ed Originals, lessons created collaboratively by educators and professional animators. To learn how to create a lesson, watch [this tutorial](#).

WHAT IS MICROLEARNING?

Have you ever created a recipe you saw on TikTok? Read a Twitter thread that clarified a topic perfectly? Listened to a three-minute podcast that transformed your understanding of a topic? Then you have experienced **microlearning**: short, impactful bursts of learning that are powerful, engaging, and most importantly, brief.

The research behind this learning stems from the work of [Hermann Ebbinghaus](#). In the mid-1880s, this German psychologist developed the “Forgetting Curve,” a model that demonstrates how the brain loses new information exponentially over time. If our learning experiences don’t reinforce new information, we’re likely to forget half of what we learn after just 20 minutes, and up to 90 percent within a year. No wonder our students struggle to remember things they should have learned last year and the year before!

This is where microlearning comes to the rescue. Microlearning supports Ebbinghaus’ retention theory — the more often we are



Bill Nye teaching science on TikTok

exposed to a concept, the more likely we are to have it solidified in our memories. When we study something repeatedly and revisit it just when we are about to forget it, we retain it much better. Since microlearning lessons are small, self-contained, and easy to return to as a learner, they serve as the ideal vehicle for making learning stick.

Microlessons are most commonly offered asynchronously — shared on a platform that students can access at any time. Educators can build up a large library of microlessons to use for review, to support parents, for flipped lessons, or for substitutes or virtual days.

DIGITAL TOOLS FOR MICROLEARNING

- [TikTok](#) is a great model for learning how to design microlearning videos. Follow the [#LearnOnTikTok](#) hashtag to find examples. Many creators also share the same videos as [Instagram](#) Reels.
- [YouTube Shorts](#) can offer some security measures for younger students, especially when YouTube Kids is utilized.
- [EdApp](#) is a platform that provides a space for you to build digital courses that users can take on mobile apps.
- The [Scribe](#) extension allows you to quickly create step-by-step guides for processes using screenshots.
- [Images and icons](#) or [infographics](#) can all be used to add visuals to your videos.



Fundraising & Payment Processing

Without a doubt, schools and teachers need money for all sorts of things. We need supplies for our classroom, curricular materials, and funds for the technology that enriches our students' learning.

This section features six tools that can help students, teachers, schools, parent-teacher

associations, and districts raise the cash they need. Some are designed specifically for schools, while others can be used by anyone.

We're also featuring a few sites that help with payment processing for things like event fees, field trips, and other school-related paperwork. See the box at right.

You can find more tools related to school fundraising in this article from PTO Today, [29 Apps to Make Fundraising Easier](#).

NO TIME FOR FUNDRAISING?

Using any of these tools takes some time, but you can start small; just try one project and see how it goes.

Another way to avoid the "just one more thing to do" feeling of fundraising is to integrate it into your instructional plans: Having students research the tools, develop the projects, and monitor your progress is an excellent real-world, project-based learning activity.

DIGITAL PAYMENT PROCESSING

Rather than collecting money and forms for field trips and other events, your school could be using technology to speed up the process. Here are two sites to check out:

Permission Click

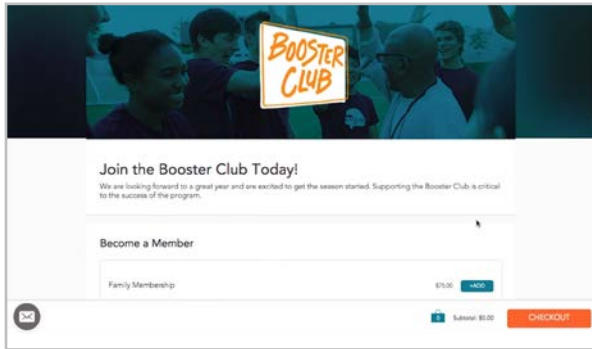
permissionclick.com

SchoolCash Online

schoolcashionline.com

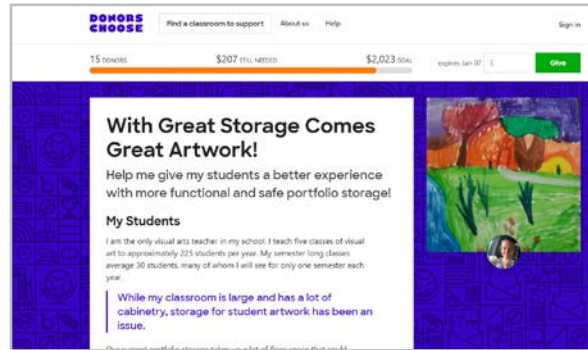
CLEAR THE LIST

Launched in 2019 by [Courtney Jones](#), the #ClearTheList campaign allows anyone to pay for items on a teacher's wishlist. Teachers simply post their Amazon wishlists or other fundraisers on social media using the hashtag [#clearthelist](#).



Cheddar Up
cheddarup.com

Is everyone pitching in for a group gift? Cheddar Up allows organizers to collect payments from a group online. The person in charge sets up a “Collection” that describes the event or item requiring funds. Next, they send emails or a link to those involved. Payers can pay online with a credit card or electronic bank transfer, or they can pay in person, and the collector can record the payment manually.



DonorsChoose
donorschoose.org

On this crowdfunding site, teachers set up a project that requires a specific set of materials, like books, technology, furniture, or musical instruments. They can also request funding for field trips, professional development, or guest speakers. The project is publicized by the teacher and DonorsChoose, and then parents and other interested people donate money to fund it.

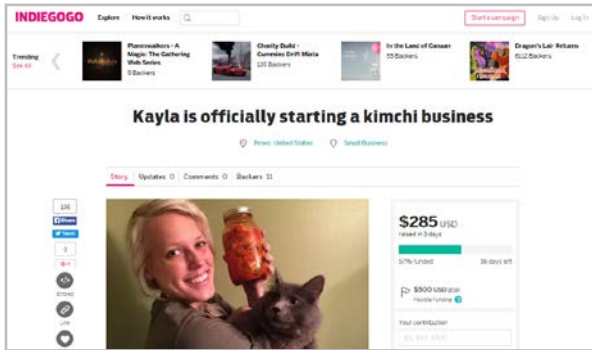
Similar: [PledgeCents](#)



GoFundMe
gofundme.com

Among crowdfunding sites, GoFundMe is the most personal, typically used by people who need to fund things like college tuition, memorial funds for loved ones, or to help a friend in need. Because it has fewer limitations on what’s eligible for funding, it’s a good option for teachers who want to raise money for projects that may not qualify on other sites.

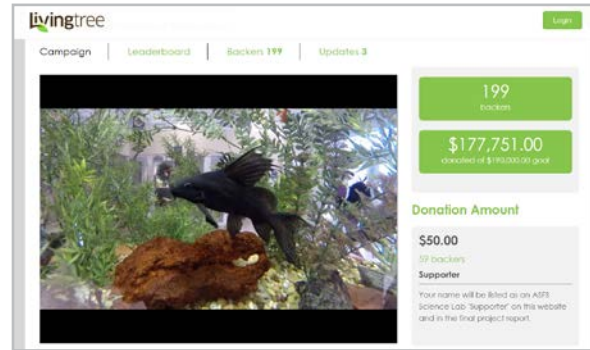
Similar: [FundRazr](#)



Indiegogo
indiegogo.com

This crowdfunding site tends to attract entrepreneurs and artists who want to fund more expensive projects. Although you may not use the site directly in your work as a teacher, you have artists, entrepreneurs, and visionaries right in your classroom. Their talents and passions could become their life's work someday, and a site like Indiegogo could give them their first big push.

Similar: Kickstarter



Livingtree Give
learn.livingtree.com/products/give

Livingtree Give offers a variety of fundraising options for teachers, teams, school clubs, parent-teacher organizations, and districts. Individual projects can be set up in a process similar to DonorsChoose. In addition to crowdfunding campaigns, schools can also set up online stores, sell tickets for events, hold raffles, and manage recurring donations. The site also offers parent communication and PD tools.



Raise Craze
raisecraze.com

This site takes a fresh approach to fundraising: Instead of having students sell things or participate in a walk-a-thon, funds are raised through acts of kindness. Students create a plan for completing a list of good deeds, and friends, family members, and other community members donate to support them.

99math | Arcademics | Baamboozle | Blooket | EdShed | Freerice | Gimkit | Goosechase | Kahoot! | Legends of Learning | playmeo | Quizalize
 Quizizz | Quizlet Live | Seppo | Socrative | Wordwall | Osmo



Games

The games in this section can make learning and reviewing material a lot more fun. For many of them, teachers supply the questions and answer choices. Some platforms also offer pre-made quizzes on different topics that users can borrow for their own use. Many of these tools allow teachers to track student responses, making them powerful instructional tools as well as great engagement boosters.

Although most games listed in this category are designed to review content, three offer

something different. **Goosechase** is a platform for organizing scavenger hunts, **playmeo** is a database of low-tech interactive group games, and **Seppo** allows users to build their own games from a set of options.

At the end of this section is a whole page devoted entirely to **Osmo**, a suite of resources that was so hard to categorize and offers so much, we had to give it a page all to itself.

JUST FOR FUN: MULTIPLAYER GAMES

The popularity of multiplayer games like [Among Us](#), [Roblox](#), and [Fortnite](#) surged in 2020. Some schools set aside time for students to play these games socially. While Fortnite is designed to be addictive and [has caused problems](#) for some young users, the other two have not been as widely criticized. Another multiplayer game with a great reputation is Minecraft, which has an [education edition](#).



THE GROWING POPULARITY OF ESPORTS

Gaming has been quite popular for a while now but it has made a big debut in the educational arena with [esports](#). Students go from just players to team members in an organized activity recognized by school systems, colleges, and companies. Participation in esports builds self-esteem, increases social and emotional development, and promotes STEM. Popular games include [Rocket League](#), [Minecraft](#), and [League of Legends](#). Many K-12 schools are using platforms such as [PlayVS](#) to host their esports programs.

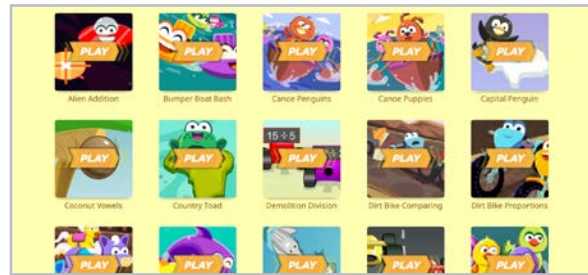
99math | Arcademics | Baamboozle | Blooket | EdShed | Freerice | Gimkit | Goosechase | Kahoot! | Legends of Learning | playmeo | Quizalize
 Quizzz | Quizlet Live | Seppo | Socrative | Wordwall | Osmo



99math

[99math.com](https://www.99math.com)

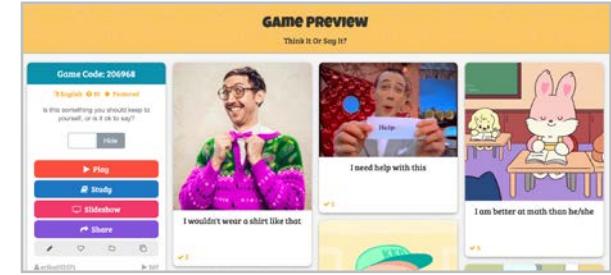
Standards-aligned math games organized by skill or grade. Engage kids in individual or real-time practice and challenge classes across the globe.



Arcademics

[arcademics.com](https://www.arcademics.com)

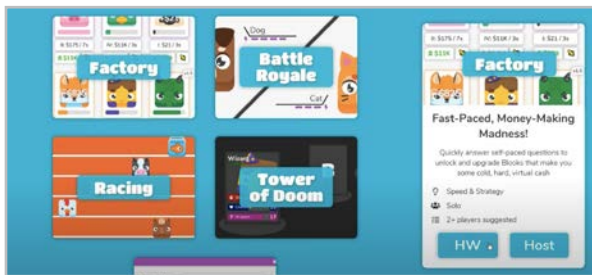
Variety of ready-to-go games on multiple subjects. Students can challenge each other to in-class competition without log-ins.



Baamboozle

[baamboozle.com](https://www.baamboozle.com)

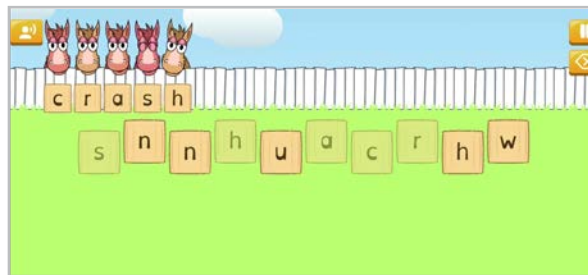
Create your own game or choose one from a bank of over 1 million games. Great for distance learning or low-tech classrooms — students do not need their own devices to play.



Blooket

[blooket.com](https://www.blooket.com)

Teachers can take a single activity and convert it into multiple modes of gameplay, as a class or independently. Students can also create Blooks and play on their own.



EdShed

[edshed.com/en-us](https://www.edshed.com/en-us)

Six different games rolled into one platform: Phonics Shed, Literacy Shed, Math Shed, Quiz Shed, Spelling Shed. Create custom assignments with paid subscription.



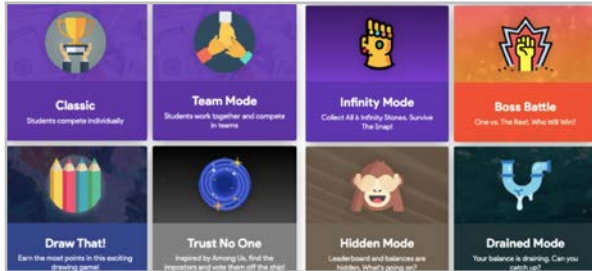
Freerice

[freerice.com](https://www.freerice.com)

Great for multi-level, multiple choice games on a variety of topics. Each game earns grains of rice that go to feeding underserved countries.



99math | Arcademics | Baamboozle | Blooket | EdShed | Freerice | Gimkit | Goosechase | Kahoot! | Legends of Learning | playmeo | Quizalize
 Quizzz | Quizlet Live | Seppo | Socrative | Wordwall | Osmo



Gimkit

gimkit.com

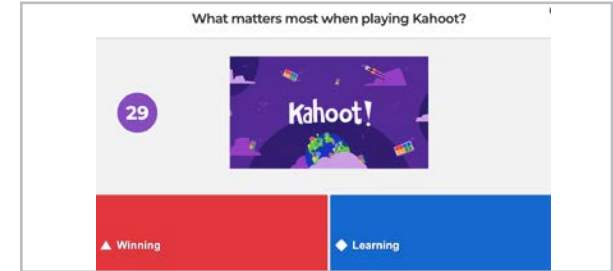
Pronounced *gim* like *gimme*, Gimkit lets you create games students play on their own devices, earning in-app cash for correct answers.



Goosechase

goosechase.com/edu

A platform used to easily create interactive [scavenger hunts](#) where players record their finds in photos and videos.



Kahoot!

kahoot.com

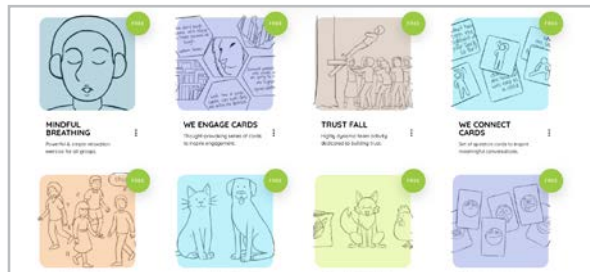
Free game-based platform with quiz-show games students play on their own devices. More than 1 million pre-created games and growing.



Legends of Learning

legendsoflearning.com

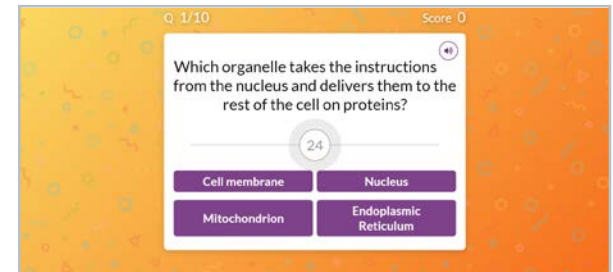
Pre-made, curriculum-aligned math and science games for elementary and middle school. Great for reinforcing concepts both at home and school.



playmeo

playmeo.com

A database of more than 400 low-tech interactive group games for a variety of purposes from ice-breakers to team-building.



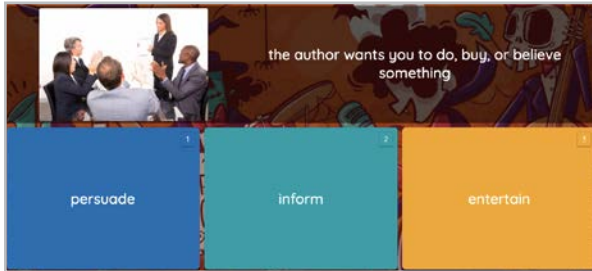
Quizalize

quizalize.com

Standards-based quiz platform that gives you real-time data as teams of students work their way through games.



99math | Arcademics | Baamboozle | Blooket | EdShed | Freerice | Gimkit | Goosechase | Kahoot! | Legends of Learning | playmeo | Quizalize
 Quizizz | Quizlet Live | Seppo | Socrative | Wordwall | Osmo



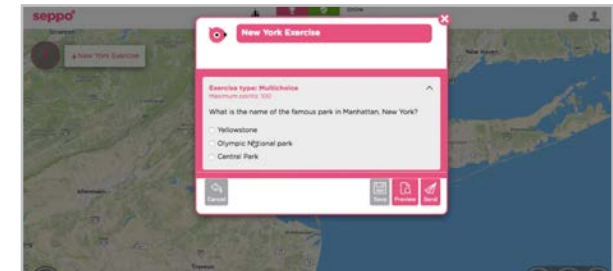
Quizizz
quizizz.com

Power-ups and redemption questions set this quiz game apart from others. Make your own or use the pre-made options for instant play.



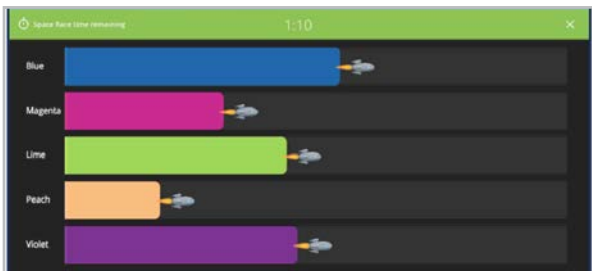
Quizlet Live
quizlet.com/features/live

This team-based game is played live between teams of students using decks from Quizlet for review.



Seppo
seppo.io

Adventure-type games requiring players to capture evidence of learning. Similar to Goosechase. Subscription required.



Socrative
socrative.com

Options to build three different types of interactive responses via game, quiz, or exit ticket. Quick setup and easy to start.



Wordwall
wordwall.net

Input a set of questions and answers, then build a variety of different interactive online games. Printable activities also available.

99math | Arcademics | Baamboozle | Blooket | EdShed | Freerice | Gimkit | Goosechase | Kahoot! | Legends of Learning | playmeo | Quizalize
Quizizz | Quizlet Live | Seppo | Socrative | Wordwall | Osmo

Osmo

playosmo.com

Unlike traditional tablet apps and games, the Osmo Learning System is a unique combination of computer vision and manipulatives that bridge the digital and physical worlds. Once the tablet is placed in the Osmo base and the reflector is placed on the camera, the entire work surface becomes interactive. With multiple starter kits for kids from ages 3-12, students physically manipulate a variety of tools while engaging with practice in reading, math, coding, and more.

The Osmo platform includes many games specifically designed for education. In [Words](#), students physically manipulate letter tiles while practicing vocabulary and spelling. [Numbers](#) asks children to manipulate number or dice tiles while solving problems in multiple ways. [Pizza Co](#) has kids physically assembling pizzas and working with money. With [Squiggle Magic](#), students physically move squiggles on the playmat to create letters, numbers, and shapes. The

newest series of games, [Math Wizard](#), includes five different math topics, each with a unique twist, while [BYJU's Learning App](#) features more than 500 literacy activities through books that connect with the Osmo system.

This incredible platform engages learners in so many subject and skill areas, providing endless ways to blend technology and hands-on play.

Similar: [ARpedia](#)





Global Learning

Travel benefits us in so many ways. By exploring new places and interacting with people from countries different from our own, we become more open-minded, more compassionate, and more knowledgeable about how the world works.

But if travel is too expensive, if it's too time-consuming, or in the case of the recent pandemic, if it's simply not allowed, technology can offer many of the benefits of travel without ever leaving home.

The tools and websites in this section connect us to the world in ways we could only imagine a few decades ago. They do that by helping us learn about cultures different from our own, connect directly with people in other countries, and even participate in shared projects and activities with them.

- **Empatico** matches classrooms from around the world for shared activities and video chats.
- **The Global Read Aloud** is a once-a-year project where students in different countries read the same book over the same six-week period.
- **ePals** and **PenPal Schools** connect students with other students in different countries through shared projects.
- **Flip Events** offer programs to take your class on a virtual journey, hear from content area experts, or learn a new skill.

MORE GLOBAL LEARNING IN THIS GUIDE

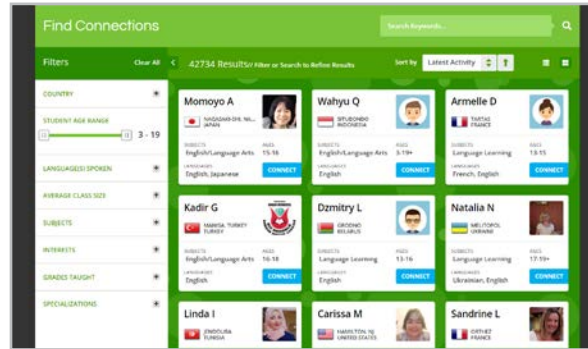
Although they are not included in this section, other tools in this guide will also support students' learning about other cultures:

- [Better World Ed](#), in the Social & Emotional Learning section
- [Google Arts & Culture](#), in the Primary Sources section of History & Social Studies
- All of the [Geography](#) tools in the History & Social Studies section
- The [Global Oneness Project](#), which can be found in the Content Libraries section
- All of the [language study](#) tools



Empatico
empatico.org

Designed for students in grades K-8 who can speak English, this site connects students in classrooms around the world for paired video chat activities like creating and sharing maps of your school and community, discussing how the weather affects daily life in your area, and talking about the foods you eat in your country. The site provides guided preparation and reflection activities to go with the video chats.



ePals
epals.com

This platform connects K-12 classrooms in more than 99 countries to share content and ideas, collaborate on projects, practice their new language skills, and learn about each other's culture. The platform includes a discussion board feature for easy collaboration and offers content from partners like Smithsonian Institute and McGraw-Hill. Learn more about how it works in [this webinar](#).



Flip Events
info.flip.com/events.html

These events connect people and places all over the world through virtual field trips, professional development workshops, and conversations with authors, activists, humanitarians, and subject-area experts. Some events can be attended live, and past livestreams can be watched on-demand. (Formerly known as Flipgrid Live Events)



Global Read Aloud

theglobalreadaloud.com

The idea behind the Global Read Aloud is simple: Choose one book that everyone reads at the same time around the world. Every year, four books are chosen: one each for primary, upper elementary, middle, and high school, plus a picture book author study. Teacher [Pernille Ripp](#) began the project with 150 students in 2010, and since then the project has expanded to millions of students worldwide.



PenPal Schools

penpalschools.com

PenPal Schools digitizes the time-honored practice of writing to pen pals, matching your students with others around the globe and getting them writing back and forth about a topic they'll really learn from. Projects cover anything from weather to food to art around the world. Once a project is chosen, students meet their assigned pen pals, then communicate with them within the context of that project.

TEACHING WITH THE UNITED NATIONS' SUSTAINABLE DEVELOPMENT GOALS

Adopted by all UN Member States in 2015, the 17 [Sustainable Development Goals](#) (SDGs) signify an urgent call to action by all countries and stand on the pillars of peace, prosperity, the planet, people, and partnership. Teachers can use the goals to tackle topics like reducing inequality, ending poverty, and preserving our oceans.

These resources will help you incorporate the SDGs into your teaching:

- [SDGs in Action](#) is an app that profiles each goal complete with explanatory videos, facts and figures, actions, and ideas of how people can help.
- Have students explore [Sustainable Friends](#) initiatives or share their own projects on the Sustainable World Map.



History & Social Studies

The number of high-quality resources online for history and social studies is truly overwhelming. What you'll find here is a big collection of websites and tools that can serve as incredible resources for anyone who teaches social studies, history, civics, or world cultures and geography.

- **Curriculum:** These websites offer lesson plans and other curricular material that can serve as a supplement to your regular curriculum. So much of it is so good, it might even replace what you normally teach. Many of these sites also offer some form of virtual or in-person professional development for teachers as well.
- **Games & Interactives:** Here you'll find hands-on tools students can interact with, manipulate, or participate in to more clearly understand various history and social studies topics.
- **Geography:** This collection focuses solely on geography-related topics and skills.
- **Primary Sources:** These websites offer large libraries of documents, images, videos, and other primary sources that can be used in your lessons, and many offer lessons and other classroom materials to go along with the primary sources.
- **Other:** These sites defy categorization, with some truly unique offerings.

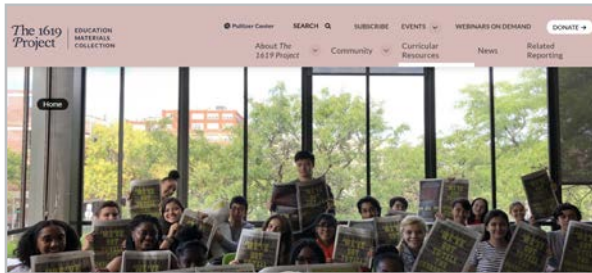
THE BACKLASH AGAINST CRITICAL RACE THEORY

Beginning in late 2020 and gaining momentum by the middle of 2021, a well-orchestrated conservative backlash has been conducted against the teaching of Critical Race Theory in schools. Although most schools are not actually teaching CRT, the term has become a stand-in for any curriculum that addresses race, discrimination, or other equity-related issues. This has resulted in legislative action seeking to control what's taught in schools and harassment of teachers and school board members.

This is not a positive development for any teacher who wants to teach accurate history, and many of the resources in this section would easily come under fire from this movement. To learn more about this issue, read [Teachers are being silenced. What can be done about it?](#)

CURRICULUM

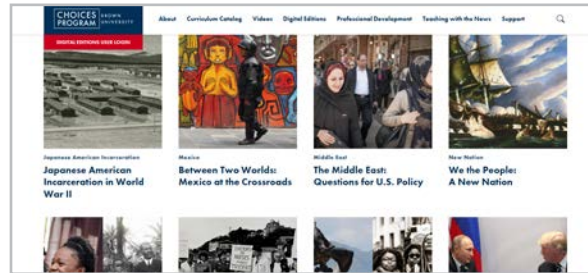
Curriculum | Games & Interactives | Geography | Primary Sources | Other



The 1619 Project

1619education.org

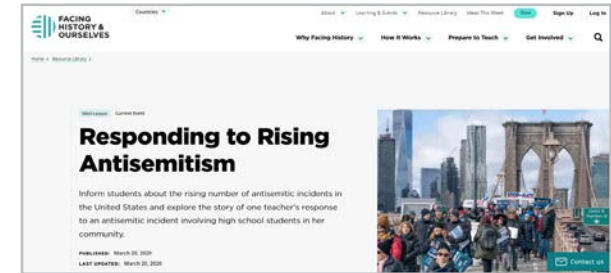
1619’s resources, including a podcast, books, and curriculum materials, reframe U.S. history through the lens of the consequences of slavery and the contributions of Black Americans.



The Choices Program

choices.edu

From Brown University, these high school units in U.S. and world history, geography, and current events emphasize critical thinking, argument, and linking history to the present.



Facing History & Ourselves

facinghistory.org

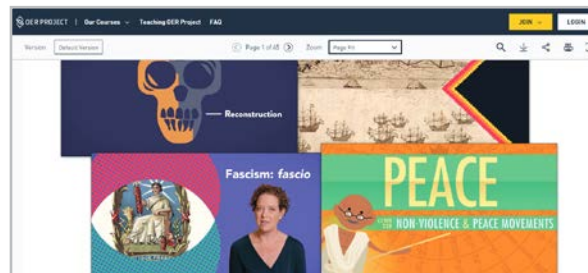
Free teaching strategies, lesson plans, videos, and full units focused on helping students learn to confront racism, prejudice, antisemitism, and other injustices.



The Gilder Lehrman Institute

gilderlehrman.org

Built on the institute’s vast collection of primary sources, the site offers free lesson plans, videos, and other teaching resources, plus outstanding [programs and teacher PD](#).



OER Project

oerproject.com

This collection of free online social studies curricula includes the [Big History Project](#), four world history courses, and short courses on climate and data analysis.



New American History

newamericanhistory.org

The [classroom resources](#) from this site “uncover the untold stories and missing pieces of what we know or thought we knew about the American past.”



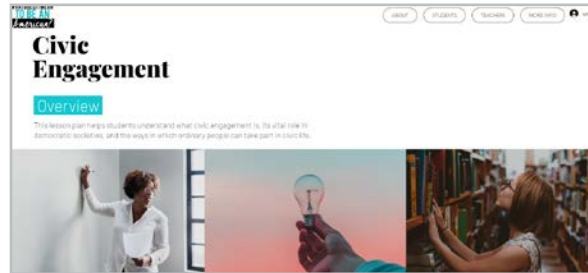
CURRICULUM (continued)

Curriculum | Games & Interactives | Geography | Primary Sources | Other



Stanford History Education Group
sheg.stanford.edu

SHEG’s history lessons and assessments have been downloaded by millions of educators. The Civic Online Reasoning news and media literacy curriculum is their newest offering.



What Does It Mean To Be An American?
whatdoesitmeantobeanamerican.com

Six free lessons for high school students on civic engagement, civil liberties, immigration, and more. Each two-day lesson includes videos, discussion questions, and readings.



Zinn Education Project
zinnedproject.org

Lessons and other teaching materials based on the approach to history taken in Howard Zinn’s best-selling book *A People’s History of the United States*.

TEACHING WITH PODCASTS

Podcasts are another excellent resource for history teachers. Two highly recommended podcasts are [60-Second Civics](#), offering quick, daily lessons about U.S. government and the Constitution, and [Teaching Hard History](#), geared toward helping teachers thoughtfully navigate challenging topics like slavery and the Civil Rights Movement.



USING TIMELINES TO STUDY HISTORY

A timeline can be an effective visual in studying the past. Students and teachers can easily create beautiful, interactive timelines using [TimelineJS](#) by Knightlab. Use the provided Google Sheet template to easily add videos, images, and more to create a stunning timeline. Learn more in [this tutorial](#).

GAMES & INTERACTIVES

Curriculum | Games & Interactives | Geography | Primary Sources | Other



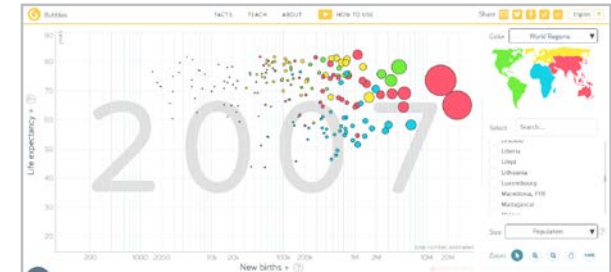
Be Washington
bewashington.org

This interactive experience puts users in the shoes of George Washington as he navigates four key historical situations.



The Fiscal Ship
fiscalship.org

This game challenges players to select policies and watch how they impact the federal budget.



Gapminder
gapminder.org/tools

Visualize data like population growth, life expectancy, and income across world regions with this interactive tool.



iCivics
icivics.org

Supreme Court Justice Sandra Day O'Connor created this site loaded with interactive games, videos, and classroom resources that teach civics.



Juxtapose
juxtapose.knightlab.com

Simple tool that creates interactive photo sliders to show two identical places at different times in history.



NOT ALL TOPICS ARE RIGHT FOR DIGITAL SIMULATIONS

[Mission US](#), offering simulations of key moments in U.S. history, is a site you may want to reconsider. The subject matter in some of the missions may be too serious to be turned into a game. Learn more about the criticism of this site in [this article](#). And for a discussion of alternatives to simulations, read [Think Twice Before Doing Another Historical Simulation](#).

GEOGRAPHY

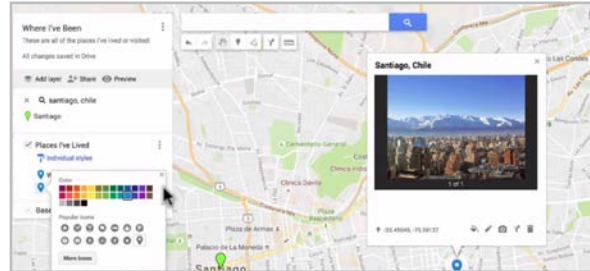
Curriculum | Games & Interactives | Geography | Primary Sources | Other



GeoGuessr

geoguessr.com

This addictive game puts you somewhere in the world using Google Street view and you guess where you are. So fun!



Google My Maps

mymaps.google.com

Create and save your own customizable, interactive maps using Google’s robust mapping technologies.



Lizard Point

lizardpoint.com

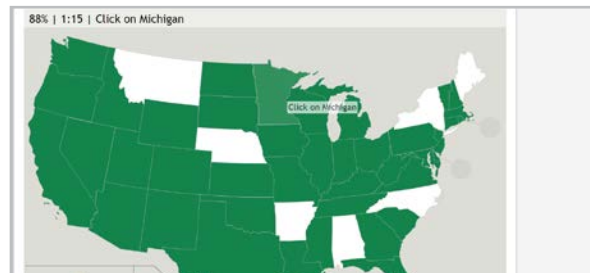
Digital map quizzes can be taken in practice or test mode and can be customized for your needs.



National Geographic MapMaker

mapmaker.nationalgeographic.org

Interact with maps and manipulate a wide variety of data. Add photos and drawings to customize your map.



Seterra

seterra.com

This is a great practice tool for map recognition. Available in dozens of languages and has a mobile app.



PRIMARY SOURCES

Curriculum | Games & Interactives | Geography | Primary Sources | Other



Bill of Rights Institute
billofrightsinstitute.org

This site offers free educational resources, teacher PD, and student programs on American history and civics.



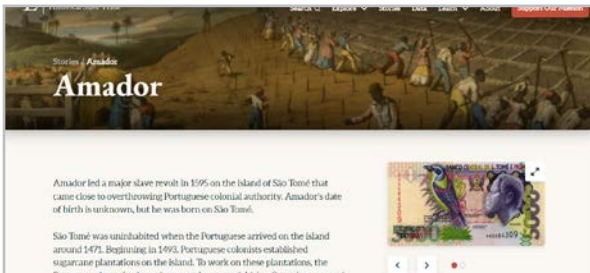
Digital Public Library of America
dp.la

A free library of more than 33 million images, texts, videos, and sounds from across the United States.



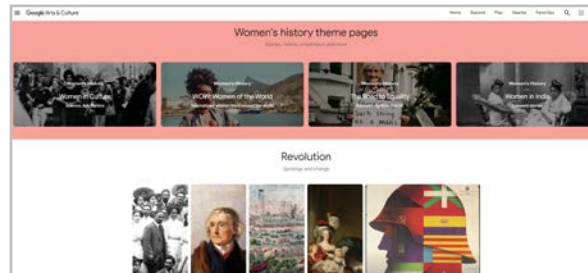
DocsTeach
docsteach.org

Backed by the National Archives, this site provides tools to build and borrow lessons around primary sources.



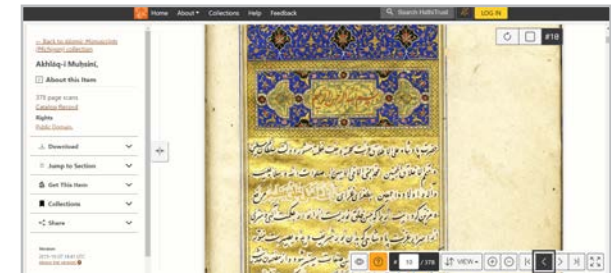
Enslaved.org
enslaved.org

Information on hundreds of thousands of individuals involved in the historical slave trade, including enslaved people, slave owners, and slave traders.



Google Arts & Culture
artsandculture.google.com/project/education

Access a huge collection of videos, art, documents, and photos, and organize them into your own galleries. The site also offers virtual field trips.



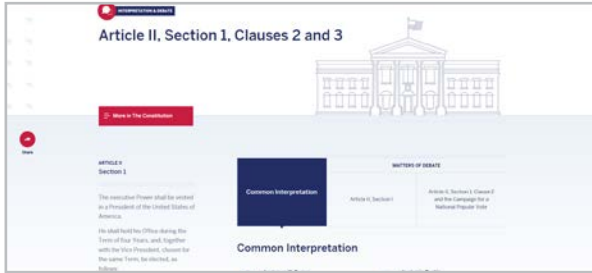
HathiTrust Digital Library
hathitrust.org

A library of over 17 million digital versions of out-of-print **books**, government documents, magazines, sheet music, and other items you might not be able to find anywhere else.



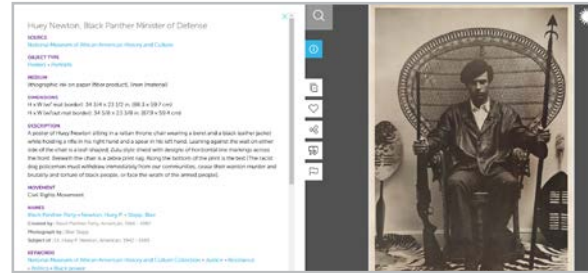
PRIMARY SOURCES (continued)

Curriculum | Games & Interactives | Geography | Primary Sources | Other



Interactive Constitution
constitutioncenter.org/the-constitution

Read the original text, click highlighted sections to learn about changes, and read scholarly commentary. More classroom resources are available at the [National Constitution Center](https://constitutioncenter.org).



National Museum of African American History & Culture
nmaahc.si.edu/learn/educators

A rich collection of primary sources and professional development for teaching the history of Black Americans.



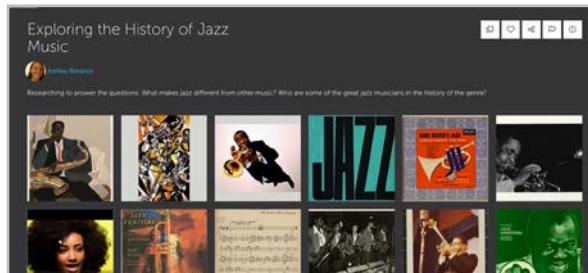
The YIVO Bruce and Francesca Cernia Slovin Online Museum
museum.yivo.org

This is a resource that doesn't fit into any category. It's an online-only museum from the YIVO Institute for Jewish Research that teaches visitors about the lives of the Jewish people of Eastern Europe and Russia through personal storytelling. Their first exhibit is on the life of Beba Epstein, a young girl from Poland. Visitors scroll through the digital chapters built with written text, animations, videos, interactive 3D environments, games, archival objects, and more.



National WWI Museum and Memorial
theworldwar.org

Database of World War I-related articles, lesson plans, and primary sources from the museum and its partner organizations.



Smithsonian Learning Lab
learninglab.si.edu

Users can curate their own collections of resources from the Smithsonian's vast historical archives.

OTHER GREAT SITES

Curriculum | Games & Interactives | Geography | Primary Sources | Other



C3 Teachers
c3teachers.org

Resources to help teachers implement the [C3 Framework](#) in their teaching, including ready-to-use inquiries.



Case Maker
mycasemaker.org

Inquiry-based challenges using Library of Congress primary sources for students in grades 6-8.



Holocaust Encyclopedia
encyclopedia.ushmm.org

A huge collection of photos, films, maps, documents, and other resources from the U.S. Holocaust Memorial Museum.



If It Were My Home
ifitweremyhome.com

Compare life in your country with life in any other country in terms of income, life expectancy, and many other data points.



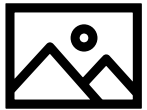
Voices of the Civil Rights Movement
voicesofthecivilrightsmovement.com

Powerful collection of videos, including viewer-submitted stories, documenting moments in the Civil Rights Movement.



Zoom In
zoomin.edc.org

Structured inquiry lessons support students in careful research and writing about history.



Images & Icons

We need visuals for so many digital things: e-books, slideshow presentations, websites, social media posts, and cover art for podcasts and music. You can get these visuals by creating them yourself with the tools in our [Art & Graphic Design](#) section or by taking photos and editing them with [photo editing](#) tools.

If you don't want to create your own, you can simply use images or icons that are already available online. The sites on the following page offer collections of images or icons for that purpose.

While most of these sites offer their visuals for free, and even if your students will mostly be using the images for educational purposes, it's still important to teach students how to use images legally so they don't violate copyright laws. [This article](#) spells out the guidelines.

A note of warning: On most stock photo sites like Unsplash and Rawpixel (at right) it is possible to find nude photos or other images that are not "school friendly," so if you want to be on the safe side when sending students to look for images, stick to sites specifically set up for that purpose. Two of the sites listed here — Photos for Class and Pics4Learning — are considered safe for school.

IMAGES AVAILABLE WITHIN OTHER TOOLS

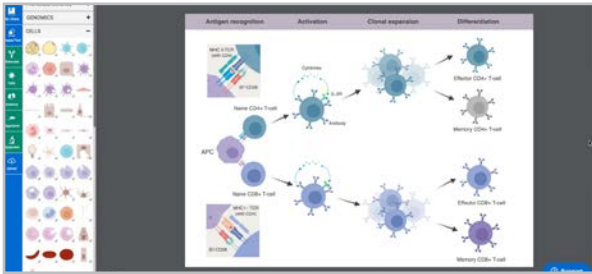
Beautiful free images can be found inside many of the tools in our [Presentation](#) section, like Canva and Haiku Deck. You can also search for and embed free stock photos when creating a Google Slides or PowerPoint presentation.



THE PUBLIC DOMAIN COLLECTION AT RAWPIXEL

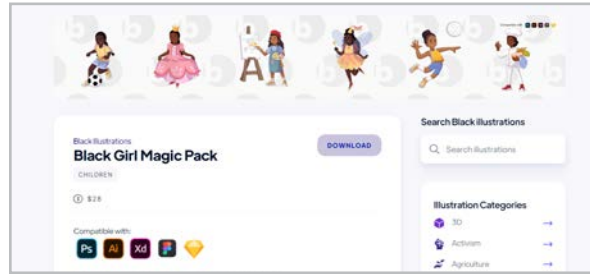
Once a piece of art has reached a certain age, it enters the public domain and can be used freely by anyone. [Rawpixel](#) has a lovely library of vintage public domain art that can be downloaded for free and used for any purpose. This is a great way to find unique images that you won't see on all the other stock photo sites. As with many other sites, however, nudes and other potentially graphic images can be found, so proceed with caution when using with students.

BioRender | Black Illustrations | EDUimages | Emojipedia | Flaticon | Flickr: The Commons | Noun Project | Photos for Class | Pics4Learning | unDraw | Unsplash



BioRender
biorender.com

Create publication-quality figures by browsing thousands of pre-made icons and templates from more than 30 fields of life sciences.



Black Illustrations
blackillustrations.com

Hundreds of illustrations of people of color in categories like activism, business, education, and lifestyle. Also includes a [database](#) of Black illustrators for hire.



No Video

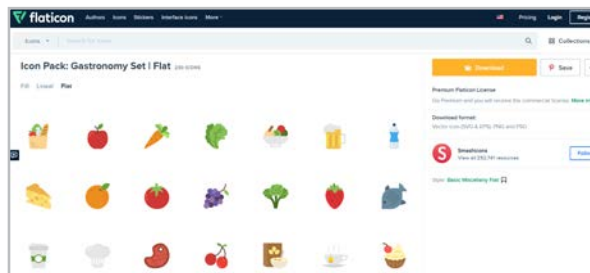
EDUimages
images.all4ed.org

This site offers a rich collection of over 700 free, unique photos featuring diverse students and teachers in educational settings.



Emojipedia
emojipedia.org

Easily search for emojis and copy them into your projects from any device. You can browse every emoji by name, category, or platform.



Flaticon
flaticon.com

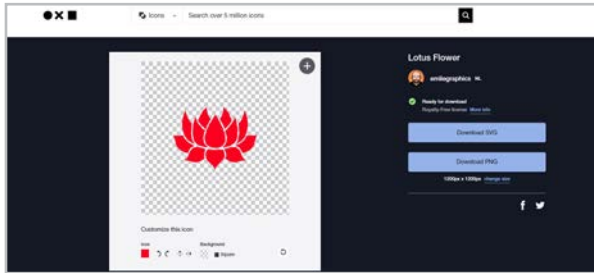
Download and customize free icons and stickers; made by and for designers in PNG, SVG, EPS, PSD, and CSS formats.



Flickr: The Commons
flickr.com/commons

While many of the photos uploaded to Flickr's main site are copyrighted, those in the Commons have no copyright restrictions.

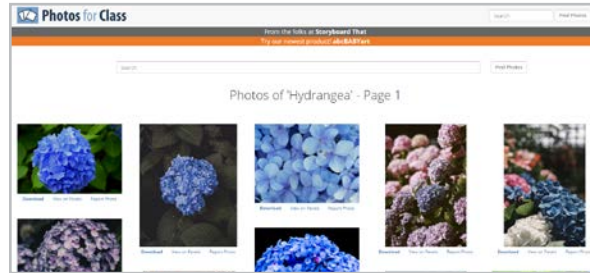
BioRender | Black Illustrations | EDUimages | Emojipedia | Flaticon | Flickr: The Commons | Noun Project | Photos for Class | Pics4Learning | unDraw | Unsplash



Noun Project

thenounproject.com

A massive library of clean, simple icons you can download for use in any project; all you have to do is give attribution to the artist.

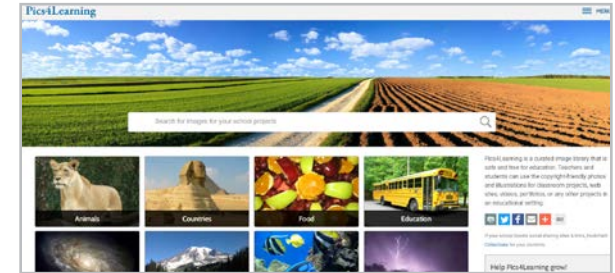


Photos for Class

photosforclass.com

Library of school-appropriate, searchable photos that are licensed for public use and come with proper attribution information.

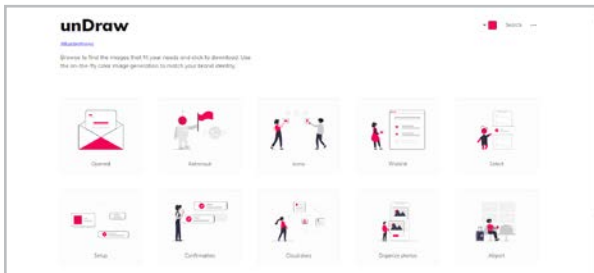
Similar: [Good Free Photos](#)



Pics4Learning

pics4learning.com

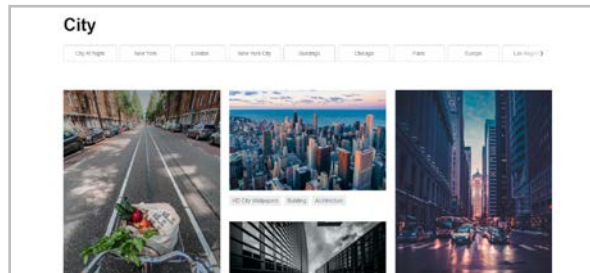
Not all of these school-safe photos are licensed for public use: The creators have given permission for educational use. Make sure students know the difference.



unDraw

undraw.co

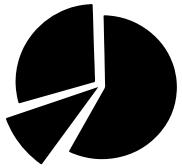
This collection of open-source illustrations is free to download. Before you do, you can change the accent color to suit your needs.



Unsplash

unsplash.com

High-quality images for use without royalties or attribution. Inappropriate images can come up, so avoid sending students to this one.




Infographics

Infographics – visual representations of information that combine text, charts, graphs, images, and icons – give us a rich, visual way to experience data. As our students enter the current job market, where businesses rely heavily on social media promotion, the ability to create high-quality infographics is a marketable skill.


This skill is getting more attention in education as well. The [Common Core ELA Standards](#) require students to be able to “integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually” (RST.6-8.7, p. 62).

The sites listed here offer tools to help students or teachers create fantastic looking infographics. Once an infographic is complete, a user has

multiple options for downloading, publishing, and sharing it to an audience. Along with these sites, you can also find infographics tools built into platforms featured in our [Art](#) section, like Adobe Express, Canva, and Desygnr.

Infogram 
infogram.com

Piktochart 
piktochart.com

Venngage 
venngage.com

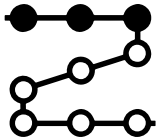
Visme 
visme.co

USE TOOLS YOU ALREADY HAVE

Infographics can also be created using Google Slides or PowerPoint. Free templates for these are available on sites like [Slidesgo](#) and [SlidesMania](#).



Sample infographic from [Venngage](#)



Interactive Lessons

Several apps have come along that help us create interactive experiences for users: online games, digital worksheets, or presentations that behave like self-help kiosks, giving information as the user clicks through various screens.

These tools can be digital replacements for some of the things we've used in school for centuries: books, handouts, worksheets, and lectures. But it's important to note that these offer the same kind of rote learning we've been doing since the dawn of formal education.

In most classrooms, some rote teaching and practice is necessary. Being able to review basic knowledge and information can certainly be part of a well-rounded instructional program. The tools in this section can make those kinds of activities more efficient and enjoyable.

But proceed with caution: If you use a lot of tools like these, and they mostly replace the same exercises you've used in the past, you're only operating at the "substitution" level of the [SAMR model](#). In other words, you're doing the same exact thing with technology that you did without it. This could very well mean that student learning in your classroom hasn't been improved by technology at all. Before you dive into this section, read more about the thoughtful use of worksheets in our post, [Frickin' Packets](#).

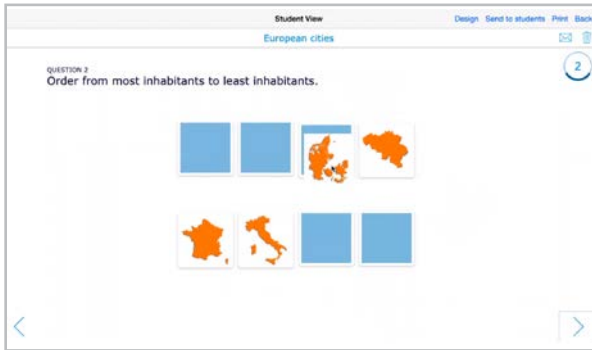
TWO MORE OPTIONS

Head to the Presentation section and take a look at [Nearpod](#) and [Pear Deck](#), which allow you to send a slide deck to student devices and add interactivity to them.



Time to Climb from Nearpod nearpod.com/time-to-climb

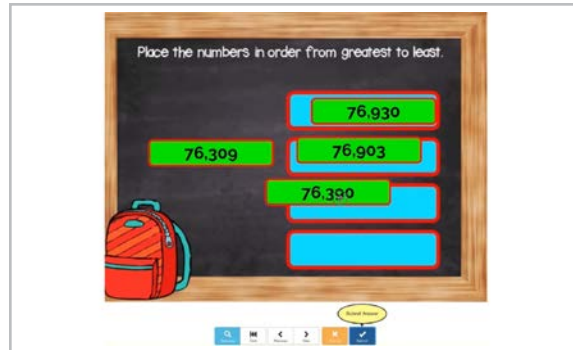
We gave this one its own box because it's a little different from the others. This platform, built into [Nearpod](#), allows teachers to use quizzes to create fun games that can be played by a whole class or individual students. Teachers can use pre-created games or create their own, answers can be picture prompts or text, making it accessible to younger learners, and teachers get the data from the activity to use for formative assessment. A Nearpod account is required.



BookWidgets

bookwidgets.com

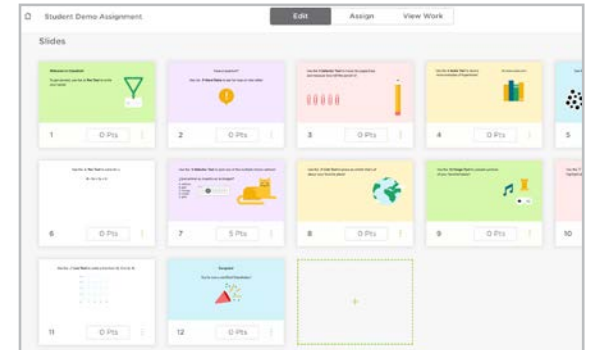
This tool allows you to create “widgets,” interactive exercises like flashcards, crossword puzzles, a hangman game, matching games, and many more. These can be shared with students through a URL or embedded into another site. Most widgets are self-graded, allowing you to check for student understanding right away.



Boom Learning

wow.boomlearning.com

On Boom Learning, teachers create decks of “Boom Cards,” digital, self-grading exercises on your course content. Cards can contain multiple choice, fill-in-the-blank, or multi-picture responses. If you would rather not make your own card, you can also purchase some from the Boom Learning Store. You can also create and sell your own decks in the store.



Classkick

classkick.com

Classkick blends the best of interactive teaching platforms and screen monitoring software. Create lessons and easily share with students — no accounts needed. Lesson options include drawing, multiple choice, manipulatives, and more. Teachers can provide instant feedback as students are working, and students can privately raise their hand to ask for help. Fully-featured free version along with enhanced pro version available.



Class Responder
classresponder.com

From the pre-made activities to the create-your-own options, this platform is ideal for reading assignments for grades K-6. The standards-based activities include multiple choice, true/false, and short answer. Student work is recorded in real time for teachers to utilize, and activities can be played in class or assigned as homework.



Deck.Toys
deck.toys

On this platform, teachers create interactive lessons called Decks. These are pathways (almost like visual [HyperDocs](#)) students follow to complete different activities that teach them about a topic or test their understanding. Pathways can be created with locks, so that students must complete one activity in order to unlock the next, or they can be more open, allowing students to choose activities.

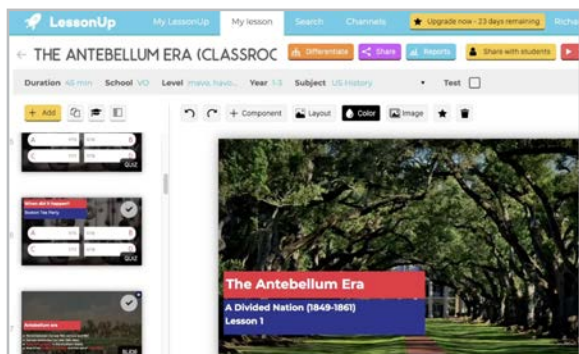


Genially
genial.ly

With this tool, you create simple games, infographics, interactive modules (like stand-alone kiosks where you click on images and information pops up) and click-through instructional units. Use it for blended learning or for student-created interactive presentations. While content is presented in an interactive way, statistics are only available in the paid plan.

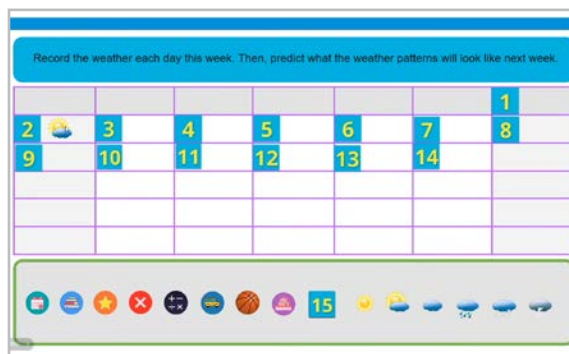
Similar: [GoConqr](#), [Educaplay](#)

BookWidgets | Boom Learning | Classkick | Class Responder | Deck.Toys | Genially | LessonUp | Lumio | oodlü | Wizer



LessonUp
lessonup.com

This platform gives teachers the tools to create dynamic lessons that get students engaged with features like polls, embedded videos, quizzes, drag-and-drop activities, mind maps, images with clickable hotspots, open response questions, and spinners for random item selection. Teachers create their own lessons from scratch, use one of LessonUp’s templates, or borrow from their library of teacher-created lessons from 50 different countries.



Lumio
smarttech.com/lumio

With Lumio, you can pull together your own PDFs, videos, PowerPoints, or Google Slides into one lesson, add interactive quizzes, polls, graphic organizers, manipulatives, and games, or choose from their library of ready-made activities. As students work, you can monitor and give feedback from your own dashboard. Lumio is made by the SMART company but it works on any device — no need to own a SMART board!



oodlü
oodlu.org

On this site, students answer content-based questions in a basic quiz format. These can be questions you enter yourself or pulled from a bank of thousands of teacher-created questions. If they get the answers correct, their reward is to spin for a chance to play one of oodlü’s games. In other words, the questions aren’t part of the game; the game play comes after answering the questions.



Wizer

wizer.me

On Wizer, teachers create digital versions of worksheets. These can contain multiple choice, fill-in-the-blank, and open-ended questions, matching and sorting tasks, and image-based questions. The worksheets can include external links, videos, and other types of embedded content. Teachers can see and give feedback on student responses, and you can share and use worksheets created by other teachers in the Wizer community.

10

GOOGLE ADD-ONS TO CHECK OUT

Add-ons are mini-apps that add extra capabilities to the Google tools you already use, like Docs, Slides, Forms, and Sheets. To find them, open a file (like a Google Doc), click **Extensions**, click **Add-Ons > Get Add-Ons**, then explore from there. Or browse the [Google Workspace Marketplace](#), where you'll find hundreds to choose from. Here are 10 we think are worth a look.

[Certify'em](#)

Generate and send certificates online

[Form Notifications](#)

Email messaging automated from Forms responses

[Form Publisher](#)

Generate documents from Forms submission data

[Icons for Sides & Docs](#)

Free icons to use in your docs and slides

[Import Playlist for Slides](#)

Import YouTube playlists and videos into Slides presentations

[MathType](#)

Math editor and equation writer

[Music Snippet](#)

Music notation and tablature snippets

[MyBib](#)

Generate APA, MLA, Harvard, and other bibliographies automatically

[OrangeSlice: Teacher Rubric](#)

Automate and simplify rubric creation and scoring in Docs

[Pear Deck](#) or [Nearpod](#) for Google Slides

Allows use of either of these tools from inside Slides



Interactive Posters

An interactive poster is an online image that contains clickable elements, allowing the viewer to activate sections of the poster to reveal text, links to outside sources, or other embedded items such as audio clips or videos. The tools in this section help users create these posters to dramatically enhance the learning experience.

TEACHER USES

- Make interactive posters for teaching content. For example, a series of photos from the Great Depression, tagged with text information, embedded videos, audio recordings from music of that period, maps of key areas, and links to related articles.

- Create interactive photos of classroom spaces, embedding text in key areas to explain how to use them, or video to demonstrate procedures.
- Share photos of classroom activities online with parents, embedding text or audio to describe what’s happening in the picture.
- Use an interactive poster as a kind of [HyperDoc](#) to organize components of a unit.

STUDENT USES

- Demonstrate learning with a poster that serves as a portfolio of art, spoken word, or music projects; a timeline of historical events or a documentation of the stages of an independent project; an instructional poster to teach someone how to perform a task; even an interactive, content-based game, where answers are embedded in audio or video clips.
- Create personal posters as a “getting to know you” activity at the beginning of the year; all posters could be housed in a student gallery.



Buncree

buncree.com

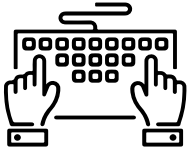
Interactive slideshow presentations can be built with text, images, animations, and embedded items like video and 360 images.



ThingLink

thinglink.com/edu

Start with an image (maybe from [Canva](#)) and add interactive text, video, audio, maps, and so much more.



Keyboarding

Students today are deeply immersed in digital content and technology tools. Using these tools has made keyboarding an essential skill for our 21st century learners. Just as handwriting was a requirement in elementary school, some educators feel keyboarding should be required as well.

Learning to touch type has [many advantages](#), including greater speed in accomplishing schoolwork, more accuracy in that work, reduced fatigue and better overall health for your back, neck, and eyes. Students have the added benefit of reduced stress when it's time to take online assessments or complete work for remote learning.

The tools in this section offer curricula, games, and other creative ways to learn and practice keyboarding skills. What's nice about these is that many of them can be fit into short bursts of time, like when students finish other class work early or when there is a disruption to the normal school day.

Two sites featured here, **Nitro Type** and **Dance Mat Typing**, offer fun games for typing practice, but use them with care: Both sites are not without ads or security risks, so be cautious about sharing personal information.

OTHER SITES THAT OFFER TYPING PRACTICE

- [ABCya](#)
- [EduTyping](#)
- [Learning.com](#)
- [QwertyTown](#)

SITES TO TEST YOUR TYPING SPEED

- [Monkeytype](#)
- [TypingTest.com](#)

KEYBOARDING, DYSLEXIA AND DYSGRAPHIA

Touch typing has been found to be helpful for students with dyslexia. Read more here:

- [How Can Typing Help People with Dyslexia?](#)
- [How to Spot Dyslexia and What to Do Next](#)

The tool [Touch-type Read and Spell](#) has been specifically designed to teach touch typing to students with dysgraphia.



Dance Mat Typing

bbc.co.uk/bitesize/topics/zf2f9j6/articles/z3c6tfr

Fun typing games for young beginners where animated characters encourage players to hit the right keys.



Epistory – Typing Chronicles

epistorygame.com

In this adventure game for desktop computers, players use only the keyboard to play. This game doesn't teach typing, but it offers a fun way to practice.



Nitro Type

nitrotype.com

Players in this addictive online game use their typing skills to “race” in cars to see who is the fastest.



Typesy

typesy.com

This paid site offers a structured typing curriculum, fun games, adaptive lessons, and reports and analytics.



TypingClub

typingclub.com

This free site offers lessons, videos, and games to teach typing in a fun way with added accessibility options like voice narration, font choices, and contrast settings.



Typing.com

typing.com

Another free option that offers lessons on typing complete with reports for teachers, plus lessons on digital literacy, coding, and word processing skills.





Language Study

Technology has given us many gifts that make it easier to learn new languages in the 21st century.

The first is better access to people who speak different languages. Tools like **italki** facilitate those interactions, connecting users with native-speaking tutors online.

Second, we have apps that offer language lessons we can access at any time on any device, plus games that make it more fun to learn.

Duolingo is one of the most popular tools for this kind of practice.

Third is access to authentic content. Millions of videos, podcasts, songs, articles, and books are created in different languages every day. Sites like **LingQ**, **FluentU**, and **Lupa** curate these so we can immerse ourselves in real language use.

Finally, we have translation tools that can at least approximate the work that once could only be done by a human interpreter. **Microsoft Translator** offers that service to us now.

The great thing about all these options is that you don't have to choose just one approach: People who want to learn a language can take advantage of different types of tools, giving themselves a rich, multilayered language study experience. And language teachers can share many of these tools with students to reinforce and extend the learning they are doing in class.

The final page of this section covers tools that would be especially helpful for EL teachers, offering resources to help students learn English.

AN APP FOR SPEAKING ASSIGNMENTS

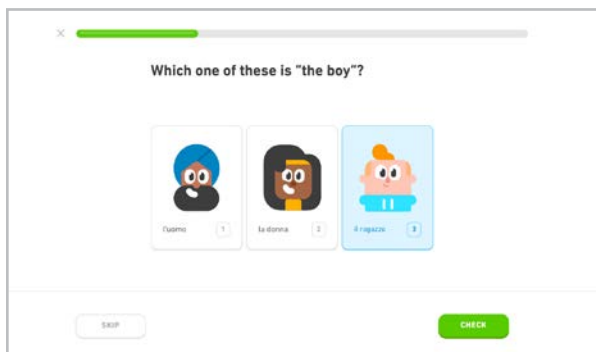
[Extempore](#), in our Speaking & Discussion section, is a tool that allows teachers to create and collect speaking assignments from students — great for language class!



Drops

languagedrops.com

In just five minutes a day, anyone can learn a language with Drops. Learn more than 45 different languages via a variety of games and activities. The free platform includes five minutes a day and includes the chance to earn bonus minutes. There is a built-in picture dictionary with more than 2,500 illustrations and audio recordings to assist learning.



Duolingo
[duolingo.com](https://www.duolingo.com)

Duolingo has perfected the gamification of language learning. Offering free self-paced courses in over 30 languages, this tool breaks courses into small lessons that can be completed in less than 10 minutes on any device. Every time you complete a lesson, your progress is tracked visually, which provides an incentive to keep going. [Duolingo for Schools](#) has more education-specific features.

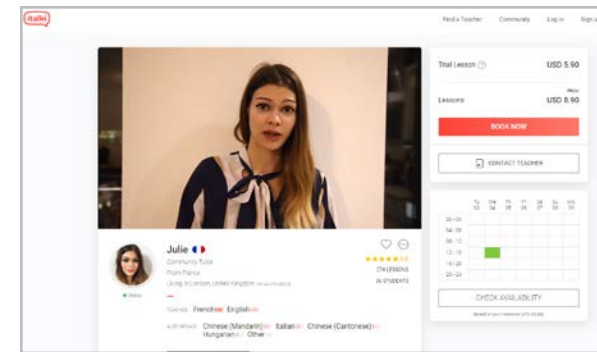
Similar: [Babbel](#), [Busuu](#), [Fluent Forever](#), [Lingvist](#), [Mango](#), [Memrise](#)



FluentU
[fluentu.com](https://www.fluentu.com)

On this site, you can watch authentic videos of people speaking in different languages in a natural context, not actors doing scenes for instructional purposes. The videos come from movies, music videos, news shows, even commercials. Each video has subtitles for the language spoken along with the viewer's native language, and you can hover over any word to get a definition.

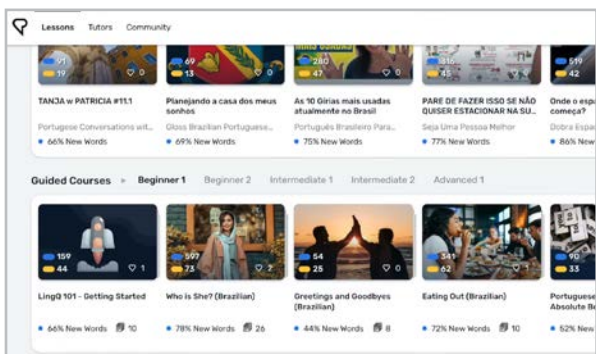
Similar: [FluentKey](#), [Yabla](#)



italki
[italki.com](https://www.italki.com)

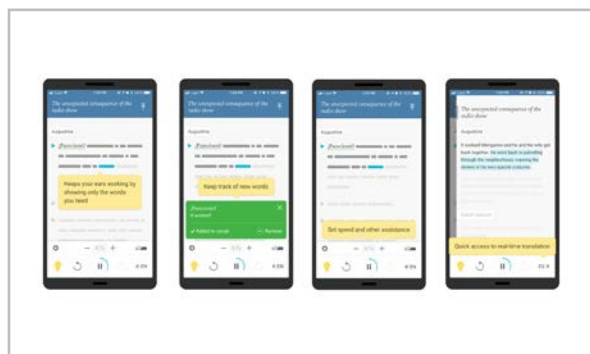
While the other tools in this section help you learn language independently, italki focuses on connecting users with real people. Learners on italki can grow their language skills through paid one-on-one lessons with native speakers or by having conversations with other learners in the italki community.

Similar: [HelloTalk](#), [HiNative](#)



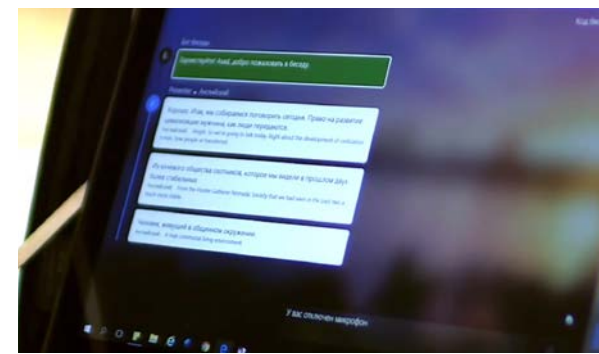
LingQ
lingq.com

Pronounced “link,” this site was created by linguist Steve Kaufmann and is based on the comprehensible input method for language learning. Users choose what they want to read or listen to from a huge library of articles, books, videos, songs, and more — “natural content” that floods the brain with authentic language — then save the words they’re learning. An online community and on-demand tutors add more support.



Lupa
lupa.app

Also based on the comprehensible input approach, this app for Spanish learners offers a library of episodes from the NPR podcast [Radio Ambulante](http://radio.ambulante.org). As users listen, they can slow down the speed, toggle between a Spanish transcript and an English translation, and get definitions and hints provided by the app. As you continue to use Lupa, the app will keep track of the words and phrases you’re learning.

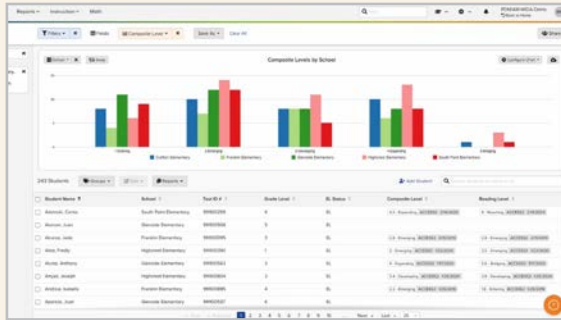


Microsoft Translator
microsoft.com/translator/education

Using artificial intelligence, this tool transcribes and translates teachers’ speech into other languages in real time; the transcript is built while the teacher is talking. Using an app on their phones, students read the transcript in whatever language they choose, and they can type or speak into the app to contribute their own comments or questions; these will automatically be translated back to the language of the presenter.

Similar: [Google Translate](http://google.com/translate) offers a more “rough” translation in a pinch.

ESPECIALLY FOR EL TEACHERS



Ellevation

ellevationeducation.com

Ideal for ELL leaders and specialists managing ELL compliance obligations, this comprehensive platform organizes student data, monitors processes, and supports instructional planning for multilingual students. Analyze student data on a district or school level to make informed decisions about goals and progress. You can also assign goals, track progress, align standards, create parent letters, run reports, and more.



Off2Class

off2class.com

Created for EFL teachers and tutors, this site offers a big library of lesson materials, homework assignments, and a placement test to help you choose the right assignments for your students. Lessons are provided for grammar, reading, writing, speaking, listening, and vocabulary: choose individual lessons or follow a full curriculum. Signing up also gives you access to an online community of EFL teachers and tutors who share ideas and support each other.

OTHER TOOLS FOR ENGLISH LEARNERS AND EL TEACHERS IN THIS GUIDE

Quite a few tools in this guide have built-in features for English learners or would be useful for EL teachers:

[Actively Learn](#) (Content Libraries)

[Aloud](#) (Video Animation & Production)

[Baamboozle](#) (Games)

[CommonLit](#) (Content Libraries)

[Fathom Reads](#) (Content Libraries)

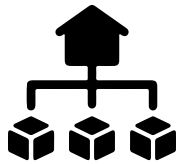
[Listenwise](#) (Content Libraries)

[NameCoach](#) (Classroom Management)

[Newsela](#) (Content Libraries)

[Reading Difficulty Power Tools](#) (Special Ed)

[TalkingPoints](#) (Parent Engagement)



Learning Management Systems

A learning management system (LMS) takes tasks that were once done by hand and puts them in a central, online location. A typical LMS will often include:

- An **assignment** feature, where the teacher can create assignments and collect student work.
- A **messaging** system, where teachers can post announcements or message students.

- A **grading** feature, where the teacher can record student grades and students can check them.
- **Assessment** tools, where instructors can create and give tests and quizzes right inside the LMS.
- **File storage**, where documents can be stored for downloading by students and teachers.
- Some kind of **social interaction** through discussion boards, work groups, or social media-style commenting.

This section features a few of the most popular LMS options for K-12, and they are here mostly as a general overview; choosing an LMS is complicated and is often handled at the administration level after much research and discussion. Articles like [this one](#) can be helpful in that process.

TOOLS TO PAIR WITH YOUR LMS

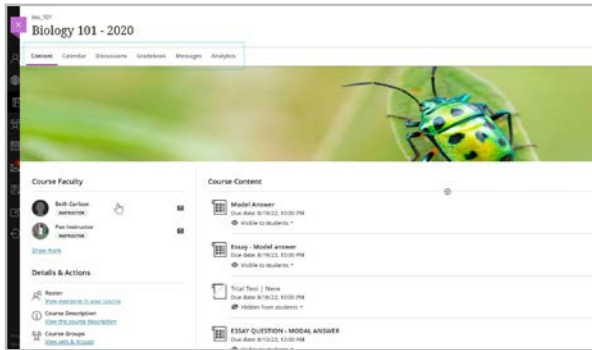
Google Assignments

This tool for collecting, grading, and giving feedback to student work is already “baked in” to Google Classroom, but it can also be integrated into other LMS platforms. Learn more in [this video](#).

Top Hat

[Top Hat](#) has some of the features of an LMS, but isn’t quite all the way there. Built for higher education, Top Hat has a response feature similar to [Poll Everywhere](#), spaces for student-to-student discussion, a content management system where educators can access open educational resources, and a testing feature that will lock students out if they attempt to leave the testing platform. Recently, Top Hat acquired [Aktiv Learning](#), which offers robust digital resources to support STEM learning. Learn more about Top Hat [here](#).

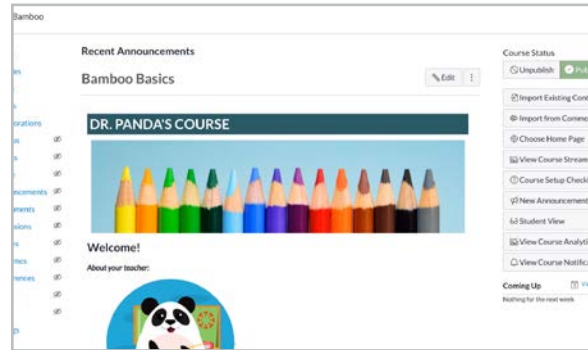
Blackboard Learn | Canvas | D2L Brightspace | Google Classroom | Hapara | Microsoft Teams | Schoology | Schoolytics



Blackboard Learn
blackboard.com

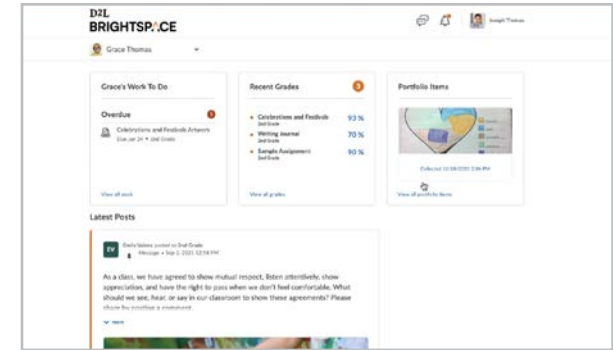
If you're ready to move beyond the capabilities of a free LMS and invest in a more robust system, Blackboard is worth a look. Its LMS tool, called Blackboard Learn, is one of the most widely used in the world, especially at the university level. It offers a full suite: assignment creation, assessment tools, content management, text-based and video discussions, and communication tools.

Similar: [Moodle](#)



Canvas
instructure.com/canvas

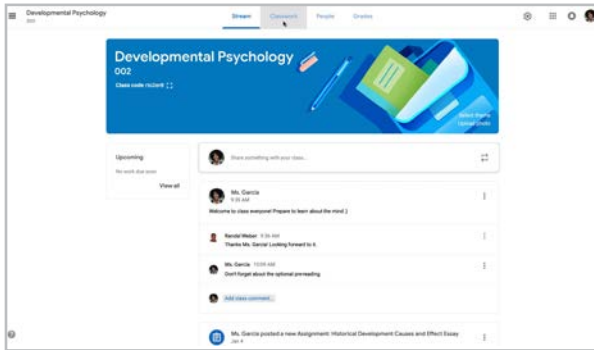
This dynamic, open-source platform gives time back to the educator by reducing time spent on assignments and tasks. Canvas easily integrates with hundreds of tools such as [Google](#), [Quizlet](#), [Nearpod](#), [Newsela](#), and [Zoom](#). The Learning Tools Interoperability (LTI) feature allows educators to access their favorite third-party apps to create a customized learning experience. Families can also track student progress online or by using the mobile app.



D2L Brightspace
d2l.com/brightspace

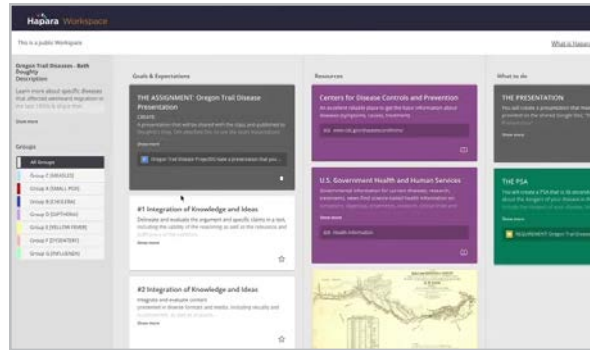
The D2L Brightspace LMS is a tool that has built-in differentiation to ensure all learners will be able to navigate their classes, whether in-person or remote. Many organizations and institutions use this LMS to offer customized professional development courses in a flexible, collaborative learning environment. Key features include student portfolios, LMS integrations, outcome-based assessments, and the ability to personalize course content.

Blackboard Learn | Canvas | D2L Brightspace | Google Classroom | Hapara | Microsoft Teams | Schoology | Schoytics



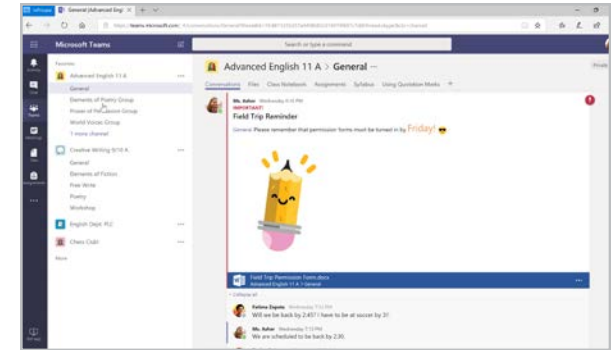
Google Classroom
classroom.google.com

With the might of Google behind it and a host of connected apps that users are already familiar with, Classroom is a popular LMS option. To use it, you have to be a user of [Google Workspace for Education](#). Classroom adds LMS functionality to these tools, allowing teachers to set up classes, create and grade assignments, give feedback to students, post announcements, and distribute course documents. [Google Classroom 101 for Teachers](#) is a remarkable playlist for learning more.



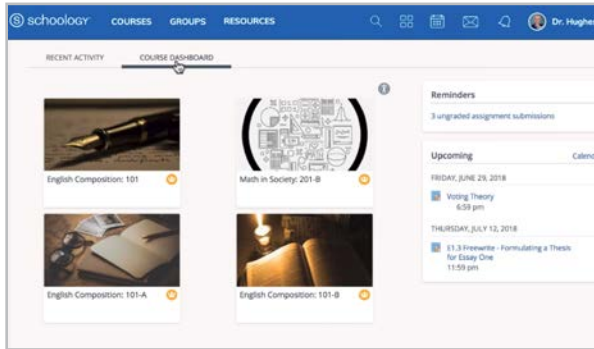
Hapara
hapara.com

One of the most unique features of this New Zealand-based site is how it gives you a bird's-eye view of student work in Google Workspace. One glance at the teacher dashboard tells you where students are in their assignments, speeding up formative assessment. The platform also offers tools for lesson planning, monitoring student screen activity, and student executive functioning.



Microsoft Teams
microsoft.com/education/products/teams

On this platform teachers can create and grade assignments, send messages or post announcements, conduct text-based discussions and video meetings, and share [OneNote](#) Class Notebooks. When you need added features, you can use some of the most popular apps in education right inside the Teams environment, including [Nearpod](#), [Quizlet](#), and [Flip](#).



Schoology

[schoology.com](https://www.schoology.com)

Acquired by [PowerSchool](#) in 2019, Schoology offers all the basic features of an LMS, distinguishing itself by going the extra mile to enhance collaboration between students, teachers, and parents. Its solid course-building and assessment tools, personalized learning capabilities, and integration with other apps have made it a popular choice for years; now that it's part of PowerSchool we should see even more capabilities from Schoology in the future.

Class Name	Grade Average (Weighted)	Assignment Completion (%)	Missing Assignments
Thermodynamics I	70.15%	81	3
Physics I	69.25%	71	6
Physical Science I	67.11%	66	6



A DATA MANAGEMENT SYSTEM THAT WORKS WITH YOUR LMS

[Schoolytics](#) is a student data platform that integrates with other learning platforms to provide a complete picture of student learning. From instant insights to day-to-day monitoring, Schoolytics uses an automated system to notify teachers, students, and parents of student progress. Completely free for teachers, Schoolytics paid subscriptions are available for entire schools and districts. Explore the interactive demo or set up a free teacher account to explore.



Literacy

The ability to read and write effectively is a fundamental skill that is essential for success in school and beyond. In pre-K-12th grade education, literacy is often taught through a combination of explicit instruction and incidental learning, giving students access to a wide range of age-appropriate books and other reading materials, and helping them develop the skills and strategies they need to comprehend and analyze complex texts.

Literacy instruction also involves supporting students who may struggle, including those with dyslexia or other reading challenges.

Technology integration into K-12 literacy education has grown dramatically over the

years, with platforms designed to enhance and support students' reading and writing skills. These include things like ebooks and ereaders, but also include tools that assess students' reading as well as provide remediation and support. It can also involve using online learning resources, such as videos, games, and interactive activities that can help students learn and practice reading and writing skills.

This section includes assessment tools, libraries, tools, and more, including a list of tools that are mentioned elsewhere in the guide that are also literacy support tools.

MICROSOFT'S COMMITMENT TO LITERACY

Microsoft has a plethora of reading support tools for students of all ages, including [Immersive Reader](#), [Reading Coach](#), [Reading Progress](#), and [Education Insights](#). Microsoft is constantly fine-tuning their current tools and adding new tools to the list.

OTHER LITERACY TOOLS IN THIS GUIDE

[Duck Duck Moose Tools](#) (Early Learners)

[Epic](#) (Content Libraries)

[Hairy Phonics](#) (Early Learners)

[Immersive Reader](#) (Special Ed)

[Reading Difficulty Power Tools](#) (Special Ed)

[Seesaw - Lessons](#) (Digital Portfolios)

[Square Panda](#) (Early Learners)

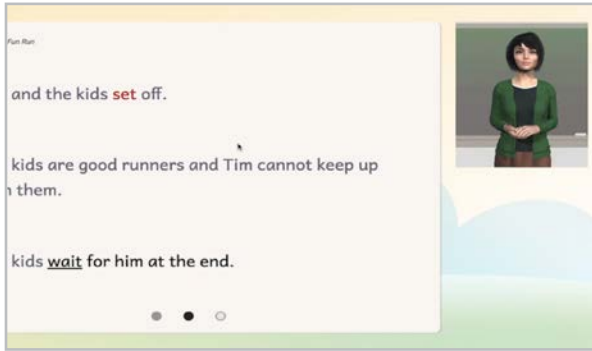
[Storynory](#) (Early Learners)

[Storyline Online](#) (Early Learners)

[TumbleBooks](#) (Early Learners)

ANOTHER GREAT ONE FROM OSMO

[Osmo](#) is already known for its tangible play, blending hands-on tools with screen time. Their newest tool, [Reading Adventure](#), is supported by interactive books that level up as students become more proficient readers. The kit's crystal wand adds a magical twist to the experience.



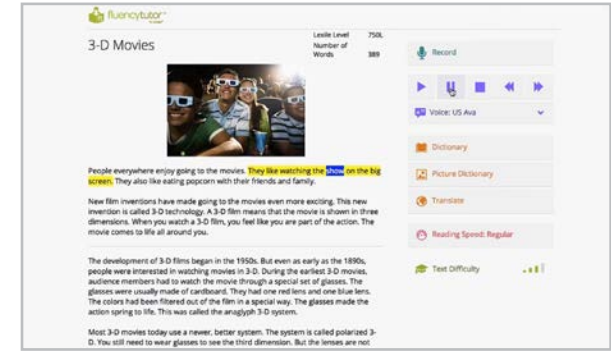
Amira Learning
amiralearning.com

Amira’s AI tutor listens while K-3 students read passages aloud and helps them when they get stuck. After the reading, Amira generates actionable diagnostics for teachers. Because each session is recorded, teachers can hear the nuances from the read-aloud and if desired, they can change the way a passage is scored.



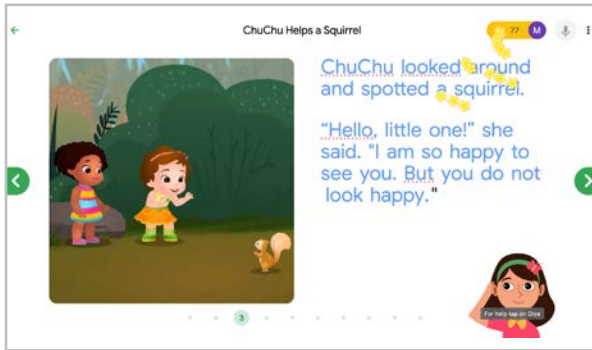
Beanstack
beanstack.com

If you’re looking for a platform to build enthusiasm for reading and help your school develop a culture of readers, Beanstack can help! From summer learning to monthly reading challenges, even school-wide year-long reading challenges, Beanstack can help build that zest for reading. As an added bonus, Beanstack can be used to create a reading fundraiser!



Fluency Tutor
texthelp.com/products/fluency-tutor

Available on any device with the Google Chrome browser, this extension lets students practice oral reading skills without the pressure of an audience, offering support tools like text-to-speech, a dictionary, and translation tools. Students can record themselves reading any passage, assigned or found online, then send that reading to their teacher.



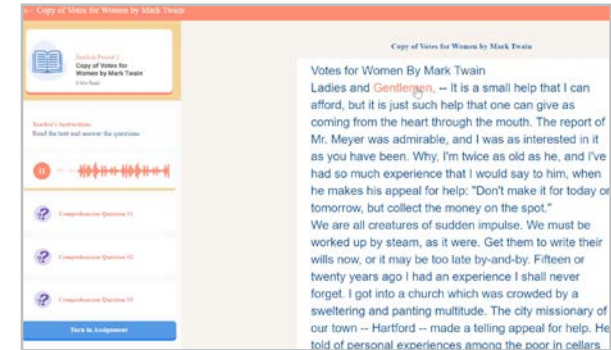
Google Read Along
readalong.google

Formerly only available on Android phones and tablets, Google’s Read Along is now available via Chrome browser. Students read books with Diya, the in-app reading buddy. She listens to students as they read, providing corrections as they arise. Book levels range from phonics/ alphabet and beyond.



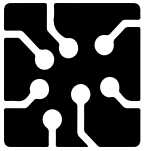
Raz-Kids
raz-kids.com

Raz-Kids is a platform that has hundreds of leveled ebooks for kids of all ages. Books have accompanying quizzes for comprehension checks, and kids are engaged in the interactions with the motivating characters that keep them hooked on the platform. Raz-Kids is part of Learning A-Z, a company that has many different resources for literacy.



Readlee
readlee.com

Readlee listens while students read from thousands of leveled passages included on the platform, from teachers’ own uploaded passages, or even from a regular book, then measures speed, accuracy, completion, and pacing. Each activity provides insights into who completed the task and how well they did, then utilizes a smart scaffolding system to support all readers. Useful for home and school and all levels of learners, including English language learners.



Makerspaces

What is a makerspace? According to [Makerspaces.com](https://makerspaces.com), it is “a collaborative work space inside a school, library or separate public/private facility for making, learning, exploring and sharing that uses high tech to no tech tools.” This broad definition is open to interpretation, and it is not uncommon for educators to disagree about what constitutes a “true” makerspace.

To help us get this section right, we enlisted the help of [Nerdy Teacher](#) blogger Nick Provenzano, author of the book [Your Starter Guide to Makerspaces](#).

WHAT TOOLS GO INTO A MAKERSPACE?

Makerspaces can be so broadly defined; they can include things like masking tape and Post-it Notes, sewing and knitting tools, LEGO blocks and Play-Doh, just to name a few.

Since this is a tech guide, we’ll stick just with the tech-related tools. Nick started by listing the tools he sees and hears about most often in makerspaces. Those are described on the following pages. He also recommended that we sort them into four groups. Since then, we added a fifth one. Here they are...

3D PRINTING & DESIGN

3D printers are not required for makerspaces, but they show up often in that context. The tools in this section support users as they learn to design projects, while others also include printing features. To learn more about the instructional benefits of 3D printing, read [7 Benefits of Using 3D Printing Technology in Education](#).

CODING

These tools teach students computer programming. Why are schools teaching coding?

- On a practical level, coding is a skill that is more in-demand in the workplace now than ever before, and equipping students with this skill gives them more opportunity for satisfying, substantive employment.
- Learning the thinking behind programming is just good for the brain — grasping the structures that lie underneath the digital world students engage with every day puts their thinking on a whole different level.
- It’s empowering: Developing the ability to actually make things happen — things you once thought were strictly in the realm of adults — is a pretty big confidence builder.

ELECTRONICS

These tools involve connecting physical circuits and other electronic components, often combined with programming that gets these components to “do stuff.”

ROBOTICS

Programming physical objects helps students understand that coding goes beyond what we can see on a digital screen. The tools in this group give students a chance to experience that.

SCREEN-FREE CODING

These resources allow students to learn coding without the use of digital screens, but with other manipulatives instead.

OTHER MAKERSPACE RESOURCES

Maker Ed

makered.org

Professional development and resources for anyone integrating maker education into a learning environment.

Makerspace Master Course*

[This course](#) by John Spencer covers everything you need to know about setting up and running a makerspace. Listen to my podcast interview with John in [What Is the Point of a Makerspace?](#)

*I am an affiliate of the Makerspace Master Course and receive a commission on purchases made with this link.

DIY

diy.org

If students are short on ideas for things to make, this subscription-based site offers a video library full of project ideas.

BOOKS

There are more excellent books on makerspaces than we can list here, but we have curated a list over on Cult of Pedagogy. [Click here](#) to explore that list.

TWO MORE THAT ARE WORTH A LOOK

Although not technically makerspace tools, both would be of interest to teachers with makerspace tendencies.

[TeachEngineering](#) offers tons of fantastic lesson plans, activities, and maker challenges that teach engineering concepts.

[UL Xplorlabs](#) has students solve real-world problems through interactive videos, instructional experiences, hands-on activities, and creative challenges.



OK GO SANDBOX

MUSIC VIDEOS BECOME STEAM LESSONS

This is a resource that doesn't fit into any other category. The music videos created by the band [OK Go](#) are famous for out-of-this-world Rube Goldberg machines, and they've taken their concept to the web for teachers to use in the classroom.

[OK Go Sandbox](#) is a platform that offers STEAM lessons and inquiry challenges built on the band's music videos. Each lesson is connected to NGSS standards and includes vocabulary and guiding questions.

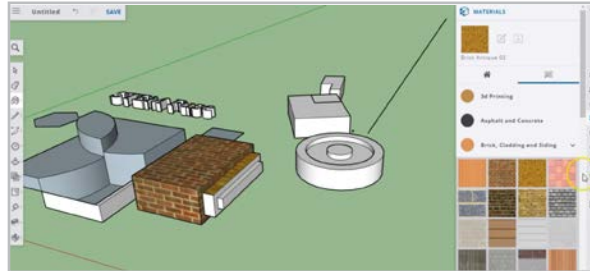
3D PRINTING & DESIGN

3D Printing & Design | Coding C-G | Coding I-S | Coding T-U | Electronics | Robotics | Screen-Free Coding



3Doodler
the3doodler.com

The 3Doodler works just like a 3D printer, except the “printing” comes out of a pen. 3Doodler EDU offers projects, lesson plans, and other ideas to make the most of your pens.



SketchUp for Schools
sketchup.com/products/sketchup-for-schools

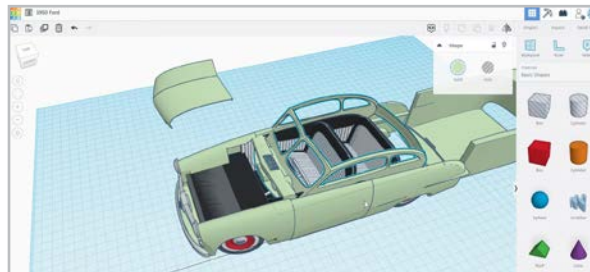
This tool makes it possible to design 3D models at any level, taking it further with variables such as time, season, and elevation. Free for G Suite and Microsoft Education users.



Thingiverse
thingiverse.com

Download and modify designs from this huge library of 3D designs from all over the world.

Similar: [Printables](#)



Tinkercad
tinkercad.com

Tinkercad is a very basic, free CAD program that is perfect for beginners of all ages. It can also convert designs into Minecraft objects to upload to games.



WHAT ABOUT PRINTERS?

3D printers are a fixture in many makerspaces, but the expense and the number of options might make purchasing one an intimidating prospect. These resources can help you do the research you’ll need to make the decision that’s right for your school:

[Guide to 3D Printing in Education](#)

[7 Best 3D Printers for Schools to Inspire Creativity and Learning](#)

3D LESSON PLANS FOR PRIMARY AND ELEMENTARY SCHOOLS

A subscription site with 3D design lesson plans and other resources, [Makers Empire](#) supports teachers who are ready to dive deep into design thinking.

CODING C-G

3D Printing & Design | Coding C-G | Coding I-S | Coding T-U | Electronics | Robotics | Screen-Free Coding



Codecademy

[codecademy.com](https://www.codecademy.com)

This site offers a huge catalog of free, self-paced coursework in languages like JavaScript, Python, Ruby, and HTML.

Similar: [Treehouse](#), [W3Schools](#)

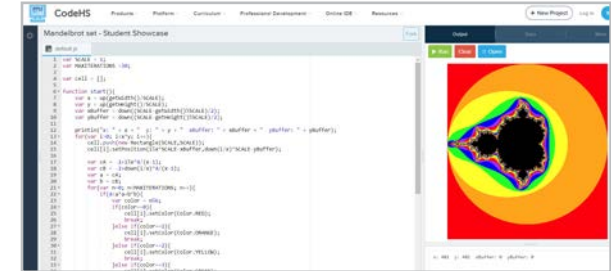


Code.org

[code.org](https://www.code.org)

Code.org is building a comprehensive set of completely free materials to teach kids how to code.

Similar: [Codelicious](#)



CodeHS

[codehs.com](https://www.codehs.com)

This comprehensive coding and computer science platform for grades 6-12 offers instructional videos, assignments, professional development, and its own LMS.



EarSketch

earsketch.gatech.edu

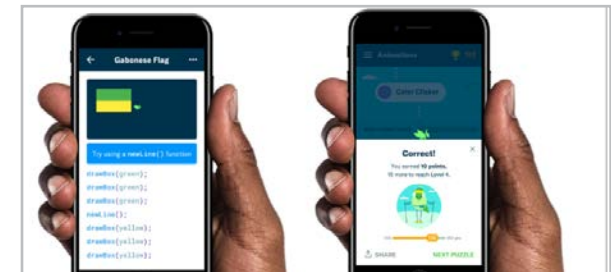
EarSketch combines coding with making music in a free web-based application. Create beats, add loops, and remix audio effects to design a unique track.



Elementari

elementari.com

On this platform, students can write, illustrate, and use coding to add animation to their stories before publishing and sharing them anywhere.



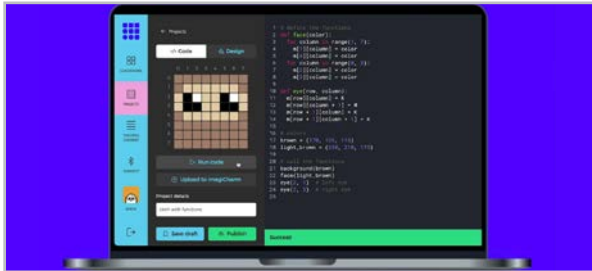
Grasshopper

grasshopper.app

Kind of like a Duolingo for coding, this free app uses games to teach users how to code in JavaScript. Also available on web browsers.

CODING I-S

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imagi
imagilabs.com

With this tool, students use Python to program animations on an illuminated cube. imagi is beginner friendly and prides itself on working to close the coding gender gap.



Kodable
kodable.com

This site offers a complete K-5 coding curriculum for teachers who have no coding experience. Lessons are linked to games students play to practice with the focus area.



Let's Start Coding
letsstartcoding.com

In a simple, tackle-box style kit, Let's Start Coding introduces coding by having users manipulate gadgets, including electronics, sensors, and lights.



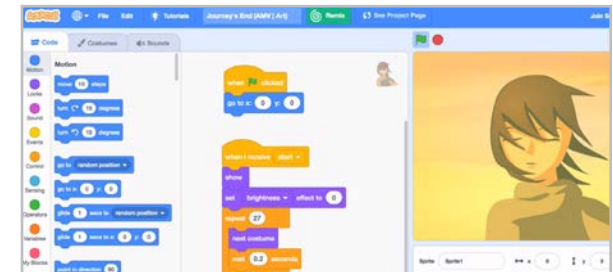
MIT App Inventor
appinventor.mit.edu

This platform provides the tools needed for students of all ages to create fully functional iPhone and Android apps.



Phidgets
phidgets.com/education

Plug these USB sensors into your computer, then use coding to program them to interact with the real world. There are light, humidity, pH, and spatial sensors, just to name a few.



Scratch
scratch.mit.edu

Scratch users create animations, games, and other digital media with visual blocks of code. Finished projects can be shared and remixed from within the Scratch community.



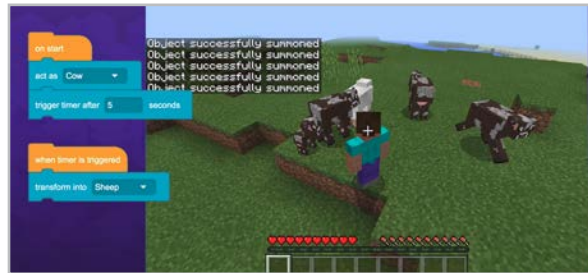
CODING T-U

3D Printing & Design | Coding C-G | Coding I-S | Coding T-U | Electronics | Robotics | Screen-Free Coding



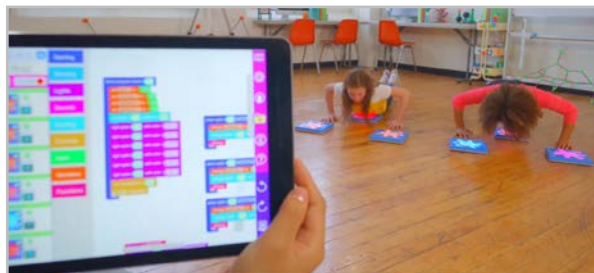
Trinket
trinket.io

This browser-based coding environment was designed for education. Users can write code, save it to their account, then share it. Supports Blocks, Python, HTML5, and GlowScript.



Tynker
tynker.com

Students start coding with blocks, then move into languages like Python. Learning paths allow students to design games, program for robotics toys, and even create Minecraft mods.



Unruly Splats
unrulysplats.com

Splats are programmable pads that light up, make sounds, and sense when they are stomped on. Students use block coding to program their own games with the Splats.

OTHER CODING SITES

All Star Code
allstarcode.org

Black Girls CODE
blackgirlscod.com

CodeMonkey
codemonkey.com

CoderZ
gocoderz.com

Girls Who Code
girlswhocode.com

Google CS First
csfirst.withgoogle.com

Khan Academy
khanacademy.org/computing/computer-programming

SCS
scs.gg

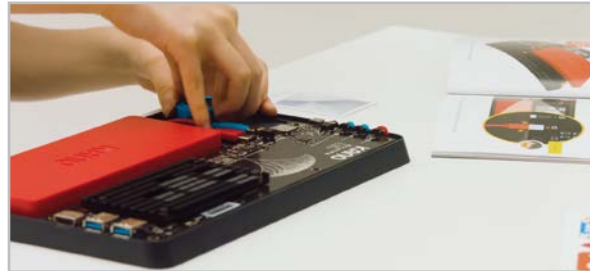
ELECTRONICS

3D Printing & Design | Coding C-G | Coding I-S | Coding T-U | Electronics | Robotics | Screen-Free Coding



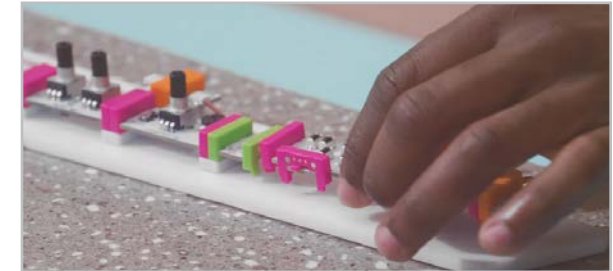
Arduino
arduino.cc

An Arduino board is a circuit board with a chip that can be programmed using Arduino software to interact with buttons, LEDs, motors, speakers, and much more.



Kano
world.kano.me

This kit pulls together everything you need to build and program your own computer. The above link is to the Kano community. Kits seem to be for sale at kano.tech, but that site was somewhat confusing in late 2022.



littleBits
sphero.com/collections/all/family_littlebits

littleBits uses safe magnets that easily connect bits to complete a circuit. This allows students to constantly iterate their designs without having to rewire or solder.



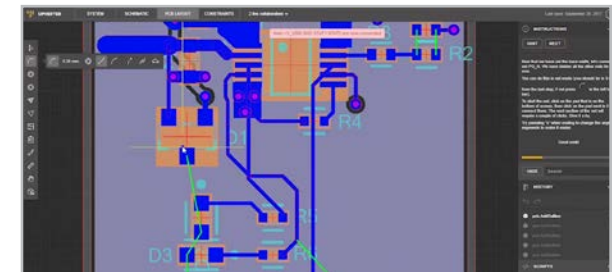
Makey Makey
makeymakey.com

By connecting clips from this computer board to anything conductive (coins, paperclips, foil, even bananas), items can become part of interactive computer projects.



Raspberry Pi
raspberrypi.org

Program this affordable, fully functional Linux-based computer to do just about anything, from digital clocks to full retro gaming tables. [pi-top](https://pi-top.com) is a computer that runs on Raspberry Pi.

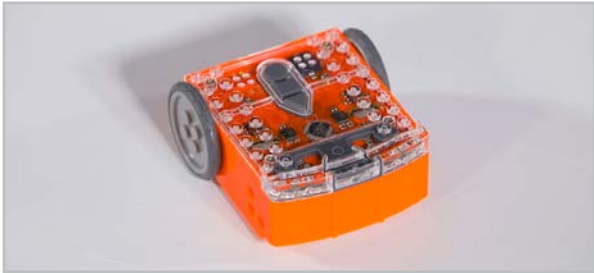


Upverter Education
education.upverter.com

This site offers free online courses to learn electronics and engineering essentials using the [Upverter](https://upverter.com) app, a browser-based electronic design tool for developing circuit boards.

ROBOTICS

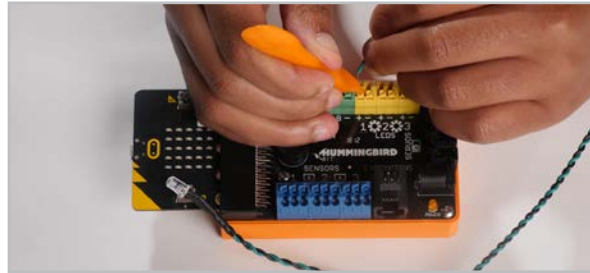
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Edison

meetiedison.com

The Edison platform provides a complete STEM experience for students, and the robot integrates with LEGO bricks, providing endless opportunities for expansion.



Hummingbird Robotics Kit

birdbraintechnologies.com/products/hummingbird-bit-robotics-kit

This kit lets students in grades 4 and up design, build, and program a robot out of any materials, with any device, in multiple languages.



LEGO Education

education.lego.com

With LEGO Education products, students can build, code, and drive their own robot, program the movement of a train set, and complete other fun robotics projects.



Sphero

sphero.com

Sphero is a ball-shaped robot you can program with code, teaching kids how individual lines of code interact with real life robots.

Similar: [Ozobot](#)



Wonder Workshop Dash Robot

makewonder.com/dash

Dash is one of three Wonder Workshop robots that teach kids how to code. Also check out [Dot](#), their smaller robot, and [Cue](#), their most advanced robot.

SCREEN-FREE CODING

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Code & Go Robot Mouse

learningresources.com/item-stem-robot-mouse

Students use physical buttons to code the mouse to complete puzzles or navigate [mazes](#).

Similar: [Bee-Bot](#)



KIBO

kinderlabrobotics.com

KIBO teaches coding to kids ages 4-7 by letting them build, decorate, and then use coding to program their own robot.



Matatalab

matatalab.com

A complete coding package, Matatalab's sets teach multiple aspects of coding, from basics to advanced, without screens.



Turing Tumble

turingtumble.com

By arranging the movable plastic parts on this "mechanical computer," students program different paths and patterns for marbles to follow.



ASSISTments | Boddle Learning | Citizen Math | Desmos | GeoGebra | Illustrative Mathematics | Magma Math | The Math Learning Center | Mathshare
MyScript Calculator | NCTM Illuminations | Photomath | Skew the Script | Toy Theater | Wolfram|Alpha | Woot Math | Would You Rather Math | Zearn



Math

The tools in this section support math instruction in a few different ways. Some of them offer improved, digital versions of tools that have been used for generations: graphing calculators like **Desmos** and **GeoGebra**, apps like **MyScript** and **Photomath** that can perform operations when looking at handwritten problems, and sites like **The Math Learning Center** and **Toy Theater** that provide digital versions of math manipulatives. And **Wolfram|Alpha** is a little bit like Google for math problems.

Other sites featured here, like **Boddle Learning**, **Citizen Math**, **Illustrative Mathematics**, **NCTM Illuminations**, and **Zearn** offer activities and

curricula that let students experience math more fully, while **Skew the Script** and **Would You Rather Math** place math firmly in the real world.

Finally, a few of these tools — **ASSISTments**, **Magma Math**, **Mathshare**, and **Woot Math** — provide a platform for math learning that allows for better feedback, discussion, and collaboration.

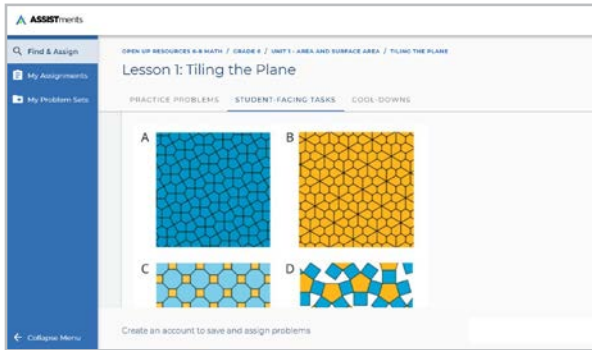
WHAT ABOUT KHAN?

Although teachers should not treat [Khan Academy](#) as a substitute for actively and creatively experiencing math in the classroom, the site's huge collection of free materials can be an outstanding support for math instruction. Their [Mastery System](#), which allows learners to track their progress in a course of study, helps teachers personalize learning for each student and use class time more effectively. [Khan Academy Kids](#) offers thousands of original activities, books, videos, and lessons in many subjects for children ages 2-6.

FIVE MORE TO CHECK OUT

- [Buzzmath](#) offers fun, engaging on-demand practice problems for elementary and middle school students.
- [ClassCalc](#) is an app that does scientific, graphing, and matrix calculating. The paid version lets you lock students into the app during a test to prevent them from accessing other apps.
- [Equatio](#), an extension stored in your browser (or in [Microsoft Word](#)), lets users type, handwrite, or dictate any expression, then convert it into digital math. Watch this [video demo](#).
- [Math Whiteboard](#) is a free collaborative whiteboard designed specifically for mathematics teaching and learning. See example whiteboards [here](#).
- [Next Gen Personal Finance](#) offers an algebra curriculum and other math resources along with its finance content.

ASSISTments | Boddle Learning | Citizen Math | Desmos | GeoGebra | Illustrative Mathematics | Magma Math | The Math Learning Center | Mathshare
MyScript Calculator | NCTM Illuminations | Photomath | Skew the Script | Toy Theater | Wolfram|Alpha | Woot Math | Would You Rather Math | Zearn



ASSISTments

[new.assistments.org](https://www.new.assistments.org)

Homework platform that gives students immediate feedback and provides teacher analytics

On this free platform, students do homework assigned by their teacher or from the site's bank of problem sets. As they work, students get real-time feedback on their responses. The teacher then gets analytics on which skills students need help with the next day.

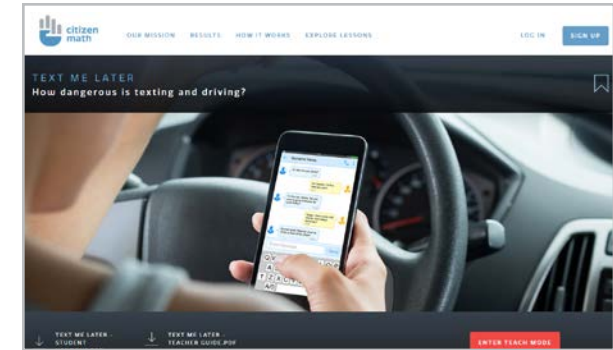


Boddle Learning

[boddlelearning.com](https://www.boddlelearning.com)

Fun, gamified math practice and assessment

Boddle uses an interactive 3D game environment to make learning math fun and personalized for K-6 kids. Teachers can align assignments to state standards, differentiate activities, and share parent access to keep guardians up to date on their child's progress. Practice sets include a link to a video explainer that walks students through how to work through the question.



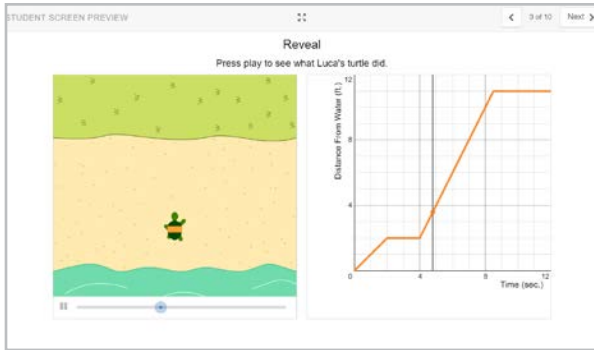
Citizen Math

[citizenmath.com](https://www.citizenmath.com)

High-interest math lessons

The lessons on this site (formerly known as Mathalicious) offer a great way to begin the shift away from rote, drill-and-kill math classrooms and into “Why do you think that is? What would happen if...?” Their lessons deal with relevant, real math, and many of them challenge students to think about the world. Learn more about the name change [here](#).

ASSISTments | Boddle Learning | Citizen Math | Desmos | GeoGebra | Illustrative Mathematics | Magma Math | The Math Learning Center | Mathshare
MyScript Calculator | NCTM Illuminations | Photomath | Skew the Script | Toy Theater | Wolfram|Alpha | Woot Math | Would You Rather Math | Zearn

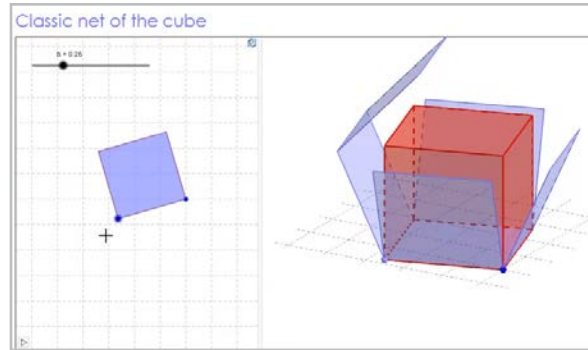


Desmos

[desmos.com](https://www.desmos.com)

Online graphing calculator and classroom activities

Along with its free graphing calculator, scientific calculator, and other tools, Desmos offers classroom activities at [teacher.desmos.com](https://www.teacher.desmos.com) and a [curriculum](#) for grades 6–8. Their YouTube channel features a solid collection of free [webinars](#) that show teachers how to best use their platform.

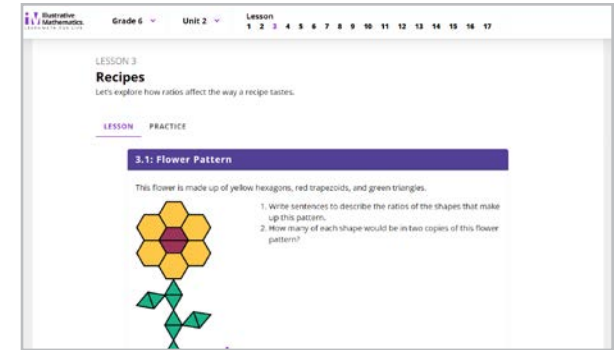


GeoGebra

[geogebra.org](https://www.geogebra.org)

Online graphing calculator for functions, geometry, algebra, statistics, and 3D math

This site started as a free dynamic graphing calculator, but has evolved to include activities, exercises, lessons, and games for grades 6–12. Through their partnership with Illustrative Mathematics (see next entry) users can create [Google Classroom activities](#) with any Illustrative Math lesson through the site.



Illustrative Mathematics

[illustrativemathematics.org](https://www.illustrativemathematics.org)

Math curriculum and professional learning resources

Provides open resources, professional services, and community for math educators. Their K–12 open resources can be used as an online textbook or you can power up your experience to include assessments, interactives, and the teacher dashboard via their certified partners [Imagine Learning](#), [Kendall Hunt](#), and [McGraw Hill](#).

ASSISTments | Boddle Learning | Citizen Math | Desmos | GeoGebra | Illustrative Mathematics | Magma Math | The Math Learning Center | Mathshare
MyScript Calculator | NCTM Illuminations | Photomath | Skew the Script | Toy Theater | Wolfram|Alpha | Woot Math | Would You Rather Math | Zearn



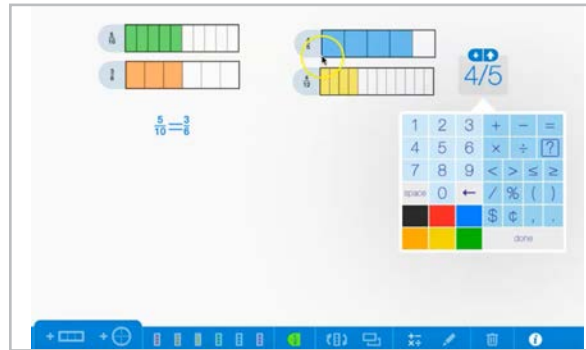
Video is in Swedish; turn on subtitles for English. 

Magma Math

maggamath.com

Interactive whiteboard for math

Magma believes that math is best learned by hand. Using a touchscreen device, students can submit hand-drawn solutions for over 40,000 Common Core-aligned tasks. With real-time access to student solutions, teachers can use the playback button to watch stroke-by-stroke video of each student’s solution, screencast student work anonymously, and use the heatmap feature to analyze student data.



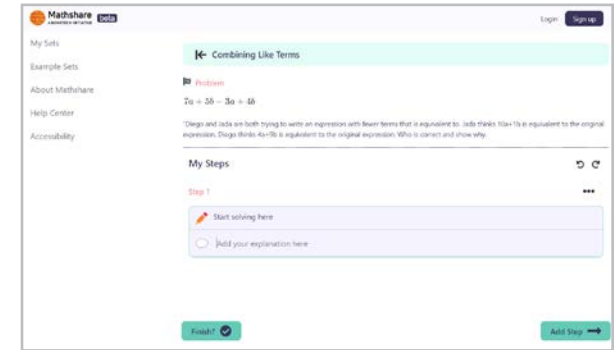


The Math Learning Center

mathlearningcenter.org

Math manipulatives, curriculum, and professional development

This website offers a collection of free interactive apps that provide students with virtual math manipulatives. Most of the apps are available as web versions, in Chrome, or on iOS devices. They also offer a paid pre-K-5 curriculum, [Bridges in Mathematics](#), that integrates the site’s apps.





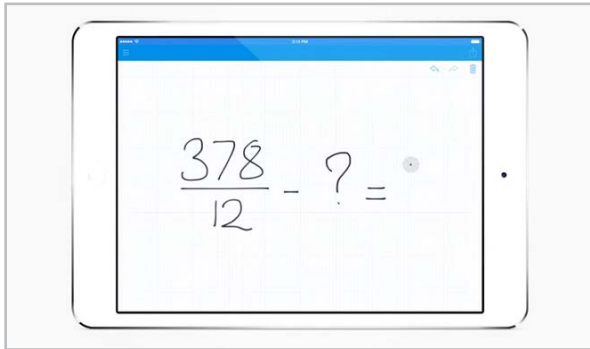
Mathshare

mathshare.pearlspotsystems.com

Allows students to digitally show their work on math problems

Mathshare makes math more accessible by giving users the tools to show in digital form how they work through every step of a math problem. Text-to-speech and speech-to-text tools are available. This platform is currently changing hands and should be stabilized at the above URL by 2023. Learn more about the changes [here](#).

ASSISTments | Boddle Learning | Citizen Math | Desmos | GeoGebra | Illustrative Mathematics | Magma Math | The Math Learning Center | Mathshare
MyScript Calculator | NCTM Illuminations | Photomath | Skew the Script | Toy Theater | Wolfram|Alpha | Woot Math | Would You Rather Math | Zearn

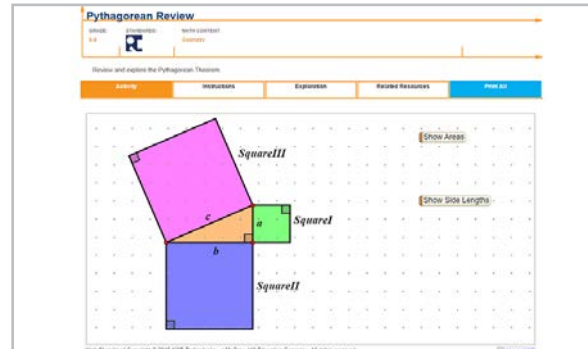


MyScript Calculator

myscript.com/calculator

Handwriting recognition calculator

This tool allows students to write in math problems, then get an answer back. If you already allow calculators in your classroom, this would be another alternative.



NCTM Illuminations

illuminations.nctm.org

Free math lessons and activities

This site houses a collection of digital math lessons and interactives, searchable by grade level and NCTM or Common Core standards. A few cautions: Some of the tools are based on older software, so check their functionality with the devices you plan to use with students. You also need an NCTM membership to access many of the lessons.



Photomath

photomath.com

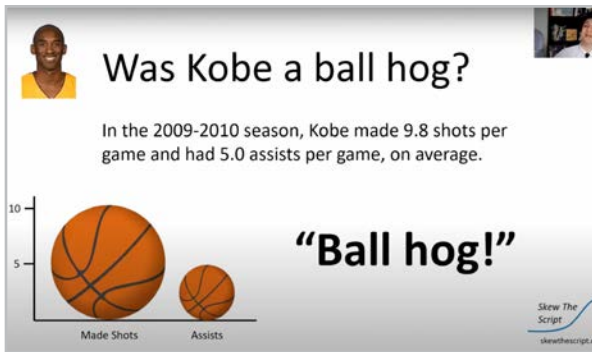
Smartphone camera calculator

With this app, users can scan or input a math problem and get a solution, along with a step-by-step explanation of how the problem was solved. Making room for this type of tool in the math classroom means teachers will be challenged to give students more complex, real-world problems to solve, rather than sticking just to those that can easily be solved with their phones.

Similar: [Socratic](#)

After exploring the tools here, keep learning by following the conversations on Twitter using the hashtag [#MTBoS](#) (“Math Twitter Blogosphere”).

ASSISTments | Boddle Learning | Citizen Math | Desmos | GeoGebra | Illustrative Mathematics | Magma Math | The Math Learning Center | Mathshare
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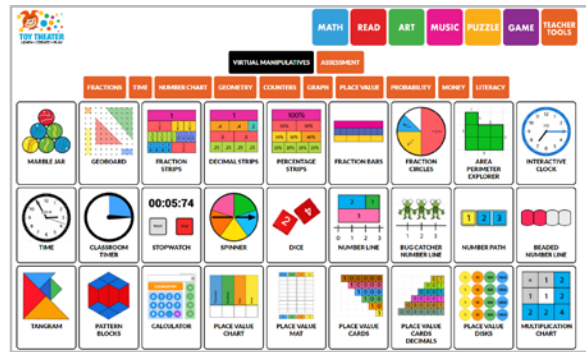


Skew the Script

skewthescript.org

Relevant and authentic math curriculum

This website offers a free Algebra I/II and AP Statistics curriculum with lessons that are related to authentic, real-world situations. Some of the lessons explore sociopolitical contexts using statistics and mathematics, but all are bipartisan.



Toy Theater

toytheater.com/category/teacher-tools/virtual-manipulatives/

Math manipulatives

Ideal for elementary grades, this free site offers a large collection of games, puzzles, and other interactives, but the math manipulatives are especially useful: You'll find manipulatives for place value, fractions, graphing, money, probability, and more. No account needed — just choose a manipulative and start playing.

Similar: [Didax](#)



Wolfram|Alpha

wolframalpha.com

Search engine for computation

This is a computation engine where you put in an equation, system of equations, or even a search term like “U.S. Population” and you get back all kinds of statistics, charts, and graphs related to that topic. It would be good for any statistics class or any class that wants to use numbers to make sense of something. Google can do some of these things, but Wolfram|Alpha takes the numbers and representations and puts them all in place.



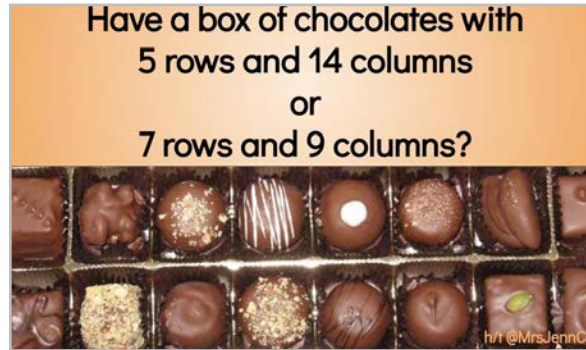
ASSISTments | Boddle Learning | Citizen Math | Desmos | GeoGebra | Illustrative Mathematics | Magma Math | The Math Learning Center | Mathshare
MyScript Calculator | NCTM Illuminations | Photomath | Skew the Script | Toy Theater | Wolfram|Alpha | Woot Math | Would You Rather Math | Zearn



Woot Math
[wootmath.com](https://www.wootmath.com)

Real-time formative assessment for in-class math activities

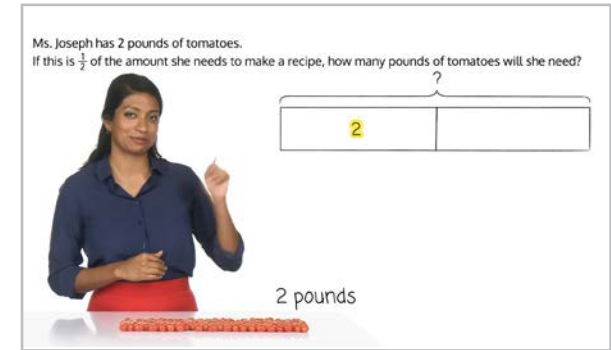
Similar to [Formative](#), Woot Math allows teachers to give a problem to a whole class, then look at individual student answers all at once. The platform indicates which students got the answer right or wrong and shows the work done to arrive at an answer, so the teacher can determine where the error in thinking occurred. Woot Math also offers [self-paced](#) and [peer-to-peer](#) activities.



Would You Rather Math
[wouldyourathermath.com](https://www.wouldyourathermath.com)

Quick math dilemmas get kids thinking

Run by high school math teacher [John Stevens](#), this site offers a ton of real-world, either/or math questions for students to take a position on. These would make fantastic starters for mini-debates to get kids talking and caring about using math to make everyday decisions.



Zearn
[about.zearn.org](https://www.about.zearn.org)

Interactives and videos to supplement math instruction

Designed to work alongside regular instruction, Zearn offers engaging videos, visual models, and digital manipulatives to help students understand concepts and practice applications. Each digital lesson has fluency, guided practice, independent practice, and bonus activities. Free for individual teachers with a class of 35 students. Schools and districts can subscribe for access to additional features.



Media & News Literacy

The term *fake news* has gotten a lot of mileage over the past few years, and for good reason. We're living in a time when *anyone* can publish *anything* and our students spend the bulk of their days consuming user-created content. All of us are bombarded with information and things that *look like* information all day.

On top of that, algorithms work hard to show us more of the stuff we agree with and less of what we don't. It's no longer enough to simply know how to read; we need to be critical thinkers who understand how media works. The resources in this section can help.

- **Checkology** and **Common Sense Education** offer lessons about the First Amendment, quality journalism, and detecting bias.

- **AllSides** and **ProCon.org** provide texts from different points of view, allowing students to study their differences and make up their own minds.
- **The Learning Network** offers lessons built around articles and other media from The New York Times.
- **The Living Room Candidate** takes a close look at political ads from the last 60 years.

MORE RESOURCES TO CHECK OUT

PBS LearningMedia has a [News & Media Literacy Collection](#) that includes resources on fake news, navigating the web, and fact-checking.

Teaching Kids News offers a collection of "[Fake News](#)" resources to help students avoid fake news and foster critical thinking.

Media Literacy Now is an [organization](#) whose mission is to work at the policy level to ensure that every student gets a strong media literacy education.

ELSEWHERE IN THIS GUIDE...

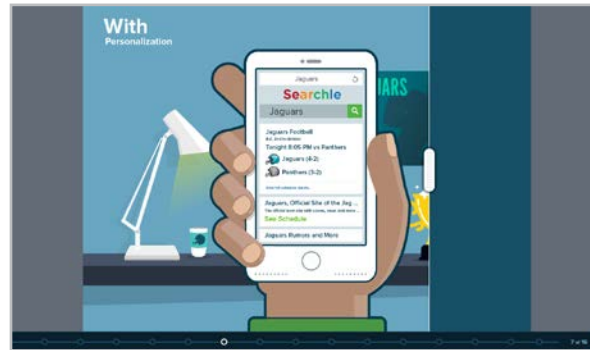
The tools in this section were created specifically for teaching students to be more critical consumers of news, but three others also offer good media literacy resources:

- [The Choices Program](#), in history & social studies, offers monthly lessons in [Teaching with the News](#) that get students to closely examine current events.
- [NewseumED](#), in content libraries, has a collection of activities, lessons, and other [resources](#) to teach media literacy. They also offer free [virtual classes](#) on a variety of topics.
- The [Stanford History Education Group](#), in history & social studies, offers a [Civic Online Reasoning](#) curriculum to teach students how to evaluate online information.



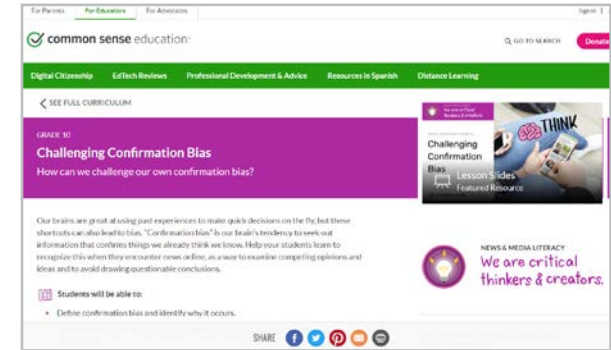
AllSides
[allsides.com](https://www.allsides.com)

Offering news from all sides of the political spectrum, this free site lets users compare how different publications and websites report on the same stories. It also includes free classroom activities like a Red Blue Translator, topic pages with background information on popular current events topics, and lesson plans for teachers.



Checkology
[get.checkology.org](https://www.get.checkology.org)

This free site offers more than a dozen interactive lessons on news media bias, misinformation, conspiratorial thinking and more taught by professional journalists, plus other support activities to extend the learning in the lessons. Check out the other educator resources offered by the [News Literacy Project](https://www.news-literacy-project.org).



Common Sense Education
[commonsense.org/education/digital-citizenship/curriculum](https://www.common Sense.org/education/digital-citizenship/curriculum)

Inside Common Sense's larger curriculum on digital citizenship are lessons on news and media literacy for every grade level, covering topics like credibility and the connection between advertising and disinformation. Also check out the [curated picks](https://www.common Sense.org/education/digital-citizenship/curriculum) in their News and Media Literacy Resource Center.



The Learning Network
[nytimes.com/section/learning](https://www.nytimes.com/section/learning)

A branch of The New York Times website, this free resource offers a huge collection of resources to supplement the Times. Their daily current events lessons, news quizzes, writing prompts, contests, and other activities all build on the articles, photography, videos, podcasts, and infographics that the Times produces on a daily basis. The site also offers professional development webinars to help teachers get the most of their materials.



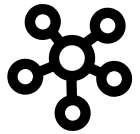
The Living Room Candidate
livingroomcandidate.org

This online exhibition houses more than 300 TV commercials from every election year since 1952, including the 2020 election. The site includes a searchable database and features commentary, historical background, election results, and navigation organized by year, type of ad, and issue. Lesson plans on political ads are also available for download.



ProCon.org
procon.org

This site presents “the pro and con arguments to controversial issues in a straightforward, nonpartisan, freely accessible way.” Topics include gun control, defunding the police, school vouchers, and illegal immigration. Each topic is further broken down into sub-categories, and multiple voices speak for each side, giving readers a granular, nuanced look at every issue.



Mind Mapping

Graphic organizers, or “mind maps,” make thinking visual by organizing concepts to show how they are related. Research has shown that when graphic organizers are incorporated into instruction, student learning improves (Hall & Strangman, 2002).

The tools in this section make it possible to create these organizers with text, images, videos, and links to outside sources, making them a rich multimedia experience. They also

allow multiple users to work on the same map simultaneously, even from different locations.

To read a detailed discussion of all the ways graphic organizers can be used in the classroom, read [The Great and Powerful Graphic Organizer](#).

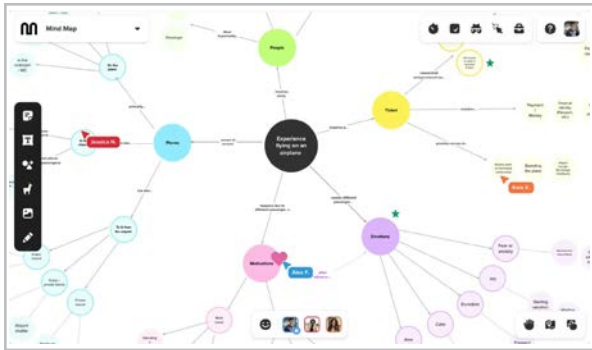
TEACHER USES

- Present content to students with mind maps, showing it as visual support for a lecture, at the beginning of a unit, or to illustrate a difficult concept.
- Assess student understanding with a mind map. Students could be given a list of terms and build a mind map to show the relationships between those terms.
- Use mind maps to brainstorm with students, either on a content-based topic or to solve a classroom problem.
- When introducing a unit to students, show them how the parts of the unit fit together with a graphic organizer. Not only will this give them a sense of where you are in the unit at any given time, it should also help them understand why they are learning the individual parts.

- Put common classroom rules or procedures into graphic organizer form to help students remember them better.
- Conduct [retrieval practice](#) sessions by having students “brain dump” everything they can remember about a topic into a graphic organizer.

STUDENT USES

- Use as a pre-writing tool to organize ideas prior to drafting.
- Think through a complex topic with a mind map. After learning about an event in history, for example, build a map that outlines its causes and effects, adding additional resources for support.
- Use a graphic organizer to illustrate a complex topic in an informational or expository writing piece.
- Use mind maps to outline text structures while reading. Research has shown that when students study text structures before and during reading, their comprehension improves. Read more in [When We All Teach Text Structures, Everyone Wins](#).



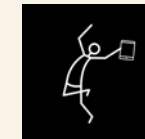
Mural
mural.co

This collaborative whiteboard platform offers a fresh, modern design and some mind mapping features that aren't available on other sites, like sticky notes, a library of icons, GIFs, images, and hundreds of customizable templates. [Education plans](#) offer robust free options.



Sketchboard
sketchboard.io

With maps that look like hand-drawn sketches, Sketchboard has a lot of the same features as the other tools in this section: Users can collaborate on a map, you can add unlimited items to a map, and individual parts can be moved around. But the items can take all kinds of shapes: squares, circles, computer screens, people; you have over 50 icons to choose from. If you don't find what you need, use the freehand tool to draw it yourself. This tool also integrates with Slack, Github, and Google Drive.



DEVELOP GREAT MIND MAPPING LESSONS IN JUMPSTART

Mind mapping is the focus of one of the 10 modules we study in JumpStart, our online technology course for teachers. Learn about the course [here](#).

SIMILAR TOOLS

To check out more tools beyond the ones featured here, try one of these:

[Creately](#)

[MindMup](#)

[Gliffy](#)

[SpiderScribe](#)

[MindMeister](#)



Music

This section was originally developed with heaps of support from [Katie Wardrobe](#), a musician and teacher who runs the website [Midnight Music](#). Visit her site to explore her work and continue to deepen your musical teaching experiences.

The music industry has long been a leader in leveraging technology and digital tools to achieve that “perfect” sound or pitch; the cha-cha preset on an 80’s electric keyboard could make anyone feel like a rock star.

The tools in this section are a definite upgrade from that keyboard, and they are more accessible than ever, giving more students the capacity to create masterpieces or at least have loads of fun trying.

This collection includes:

- **Editing and composing tools** like GarageBand, Groove Pizza, Hooktheory, Incredibox, Noteflight, and Soundtrap
- **Music lessons and curriculum** on sites like Musicca and Quaver
- **Musicians’ practice and training tools** like Anytune, Functional Ear Trainer, Solfeg.io, and TonalEnergy

WHEN MUSIC MEETS CODING

Check out [EarSketch](#) in the Coding section of our Makerspace tools. It’s a platform designed to teach coding through music composing and remixing.

#	TITLE	ALBUM	DATE ADDED	DURATION
1	It Takes Two Rob Bee & DJ EZ Rock	Pushin' The Hits	Jan 19, 2018	8:01
2	Get Up, Stand Up The Wailers	Bandit	Jan 19, 2018	3:18
3	Wonderwall - Remastered Oasis	(What's The Story) Morning Glory...	Jan 19, 2018	4:18
4	The Writing's on the Wall OK Go	Hungry Ghosts	Jan 19, 2018	3:34
5	Irreplaceable Beyoncé	Irreplaceable	Jan 19, 2018	3:00
6	Walk Like an Egyptian The Bangles	The Essential Bangles	May 8, 2018	3:04
7	Welcome Back (Theme from Welc... John Williams	Welcome Back	May 8, 2018	2:00
8	Come Together - Remastered 2009 The Beatles	Abbey Road (Remastered)	Jan 19, 2018	4:19

PLAYLISTS IN THE CLASSROOM

With apps like [Spotify](#) or [Apple Music](#), it’s easy to design playlists that invigorate your classroom. One clever use comes from [Ed Campos, Jr.](#), who has created a [playlist](#) to cue his students to take action! Play “Walk Like an Egyptian”...the students line up and get ready to move. Or if they hear “Come Together” by the Beatles, up they go to gather at the meeting spot.

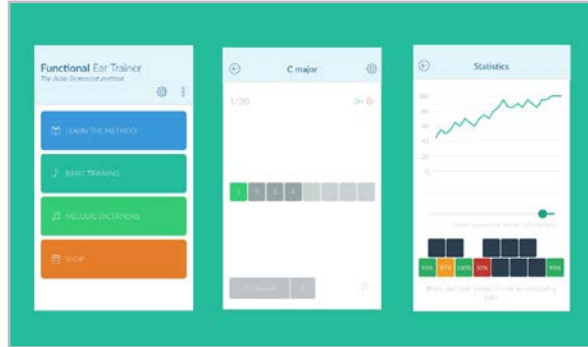
Other classrooms have voted on a “theme song” for the start of their classes. Who wouldn’t be ready to take on a writing class when the theme from “The Office” kicks off the period?



Anytune
anytune.app

Music “slow-downer” for targeted practice

This app assists musicians in learning to play music by ear. Add songs from your own music library, then slow them down, isolate or mute instruments, record your performance and locate mistakes, and break songs into sections you can loop for practicing tricky spots. Many features are free; [teachers are eligible](#) for Pro+ features at no charge.



Functional Ear Trainer
fet.kaizen9.com

Gamified ear training app

Based on Alain Benbassat’s ear training method, this free app helps users learn to identify tones in a given key, and allows you to track your progress over time.

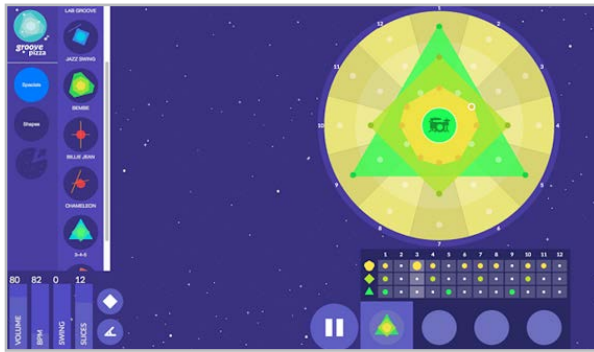


GarageBand
apple.com/garageband

Digital audio workstation for composition, recording, and editing

GarageBand is a versatile music creation studio that is a stalwart tool for Mac and iPad users. It’s simple to use but very rich in features and is great for songwriting, remixing, film scoring, composing video game music, and recording projects.

Similar: [Audacity](#)

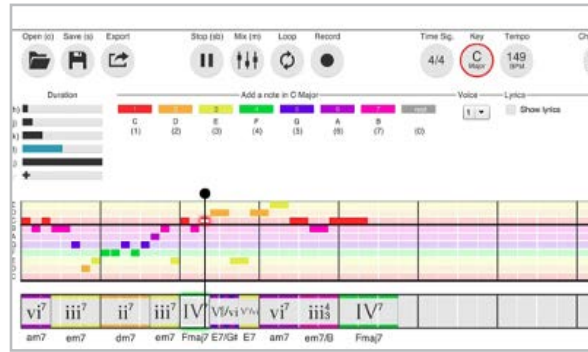


Groove Pizza

musedlab.org/groovepizza

Simple and effective free online drum sequencer

Groove Pizza allows you to create drum patterns using a pizza-shaped circular interface. You can have up to three independent parts playing at once — like a kick drum, snare drum, and hi-hat — and you can control the tempo, the volume, the amount of “swing,” and more. Once you’re finished with your beat, you can export it to another software program.



Hooktheory

hooktheory.com

Digital songwriting “sketchpad” for writing melodies and chord progressions

Hooktheory is a site with resources to help you write and analyze songs. The Hookpad app has useful features for students: an option to see which melody notes will fit well with a given chord, plus a chord palette to narrow down harmonic options. The Theorytabs section lets you explore the harmonic progressions of thousands of pop songs.

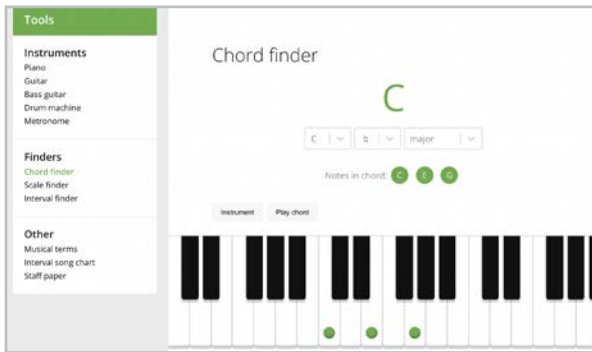


Incredibox

incredibox.com

Easy-to-use beatbox song builder

This interactive website and iPad app is lots of fun! You can use it to introduce beat-boxing, discuss texture in music, explore remixing, and discover effective arranging techniques. Students can record their own remixes and then play their “performance” for the class. To see how Incredibox could work in your classroom, try this free lesson plan: [Teaching Beatboxing Basics with Incredibox](#).



Musicca

[Musicca.com](https://www.musicca.com)

Free lessons and exercises to learn music theory

Musicca makes it easy to learn music theory with its interactive lessons, online exercises, and instruments. This site is an all-in-one powerhouse that has exercises that combine music theory and notation, ear training, and keyboard identification with instruments such as guitar, bass guitar, piano, and drums.



Noteflight

[noteflight.com](https://www.noteflight.com)

Online music notation software that works on any device

Noteflight is easy-to-learn software that lets you create your own sheet music. Students can use it for composition projects — from simple melodies through to orchestral scores — and teachers can use it to create assignments, music worksheets, and arrangements of ensemble pieces.

Similar: [Flat](#)



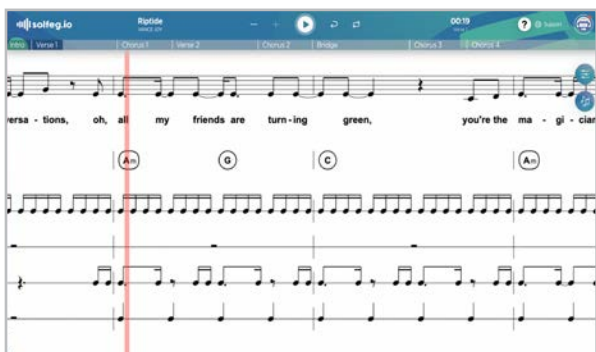
Quaver

[quavered.com/music](https://www.quavered.com/music)

Comprehensive, fully digital music curriculum

This web-based platform provides a comprehensive K-8 curriculum, relevant resources, interactive activities, and even professional development. Navigate the teacher dashboard for a full lesson with assessments or just launch a fun class play using one of the hundreds of pre-loaded songs. Quaver Music offers lessons and activities for vocals and musical instruments so every student can enjoy.

Anytune | Functional Ear Trainer | GarageBand | Groove Pizza | Hooktheory | Incredibox | Musicca | Noteflight | Quaver | Solfeg.io | Soundtrap | TonalEnergy

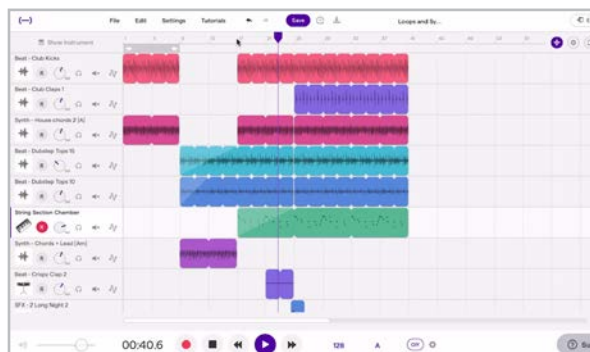


Solfeg.io
solfeg.io

App to support learning to play songs by sight

An interactive app that teaches music by sight through a huge library of popular and traditional songs. Within the song, as students are learning to play, they can adjust the volume of any or multiple instruments on the track, change the visualization from notation to piano to ukulele, and more! The entire song library is free to schools.

Similar: [SolfaSinger](#)



Soundtrap
soundtrap.com

Cross-platform online digital audio workstation

Soundtrap is an online alternative to GarageBand for non-Mac users. It's fantastic for composition, editing, and recording, and it really shines for collaboration: Multiple students can work on the same project from different locations, with each contributing different parts of a music or narration-based project.



TonalEnergy
tonalenergy.com

A flexible tuner and metronome app

This must-have tool for music teachers can teach students about intonation and sound quality. With the analysis function, students can “see” their sound as a waveform and evaluate their performance in real time. Was the note steady? Was the articulation and release of the note clean? TonalEnergy's instant visual feedback helps students adjust their playing more accurately. This app is only available for mobile devices.



Notetaking

Digital notetaking tools are a lot more than high-tech versions of the paper we might ordinarily use in the analog world. They come with all kinds of features that really take them to another level.

Some are more like binders, helping us organize notes into sections, giving us handy pockets to store documents we receive from other sources, and so much more. Some allow us to layer notes — or annotations — on top of existing documents or even web pages. Others allow us

to use our natural handwriting, voice recordings, or video to make the notes a truly multimedia experience.

WHAT DOES THE RESEARCH SAY?

Is notetaking even important anymore? The research says YES. Not only is notetaking important for learning, but [this overview](#) of the research on notetaking summarizes best practices.

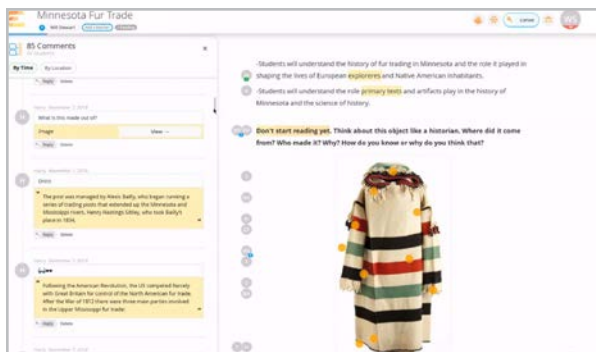
TEACHING STUDENTS TO TAKE GOOD NOTES

Humans aren't born knowing how to take notes, so if we want them to do it well, we need to teach them how to do it.

We recommend that you show students several methods and let them experiment until they find a style that works for them. [This video](#) from College Info Geek reviews five different notetaking strategies, and [this station rotation method](#) is an excellent way to introduce students to the different styles.

CLASSROOM USES

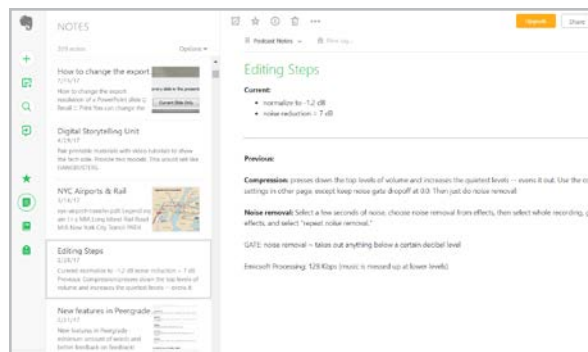
- Use **Evernote**, **Google Keep**, or **OneNote** to keep your “teacher stuff” organized. Students can use these to organize their own notes and documents. For big projects, they can sort notes into tabs or sections, then share them with you through a link.
- Students can annotate PDFs for close reading or research with a tool like **Kami**. They can do the same with online articles using tools like **Hypothesis**. If you want to watch your whole class comment and annotate a reading together, try **Edji**.
- Teach [sketchnoting](#) or graphic note-taking with tools like **Notability**.
- Students who prefer handwritten notes may want to invest in a reusable **Rocketbook** notebook and upload notes to the cloud.



Edji

edji.it

This group annotation tool is fantastic for close reading. Teachers create a reading from a PDF or pasted from a website. As students read, they add written or audio comments and questions. The teacher can see all comments at once, and can even make them visible to everyone, so students can discuss the text together. It also works with an image or GIF, where students can click directly on the image and add a related comment.

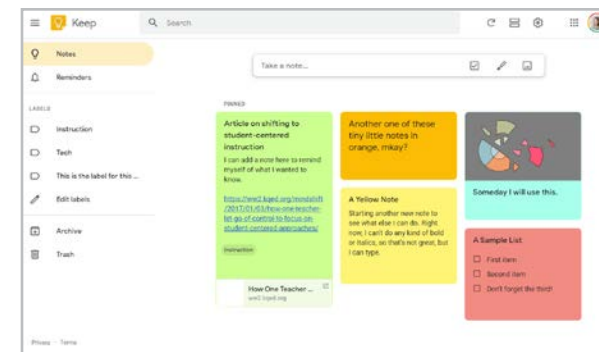


Evernote

evernote.com

Evernote lets you type searchable notes, collect web clippings or screenshots, scan documents or images, attach files, and record audio notes. Notes can be sorted into notebooks and tagged by topic, making Evernote great for organizing tons of notes across many areas of life. This tool is packed with features — check out [this playlist](#) for a more complete overview.

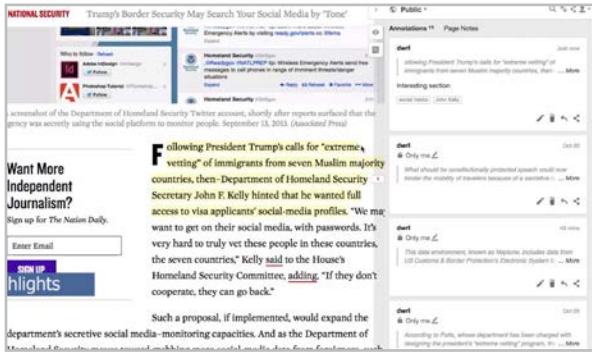
Similar: [Joplin](#), [Notion](#), [Simplenote](#)



Google Keep

keep.google.com

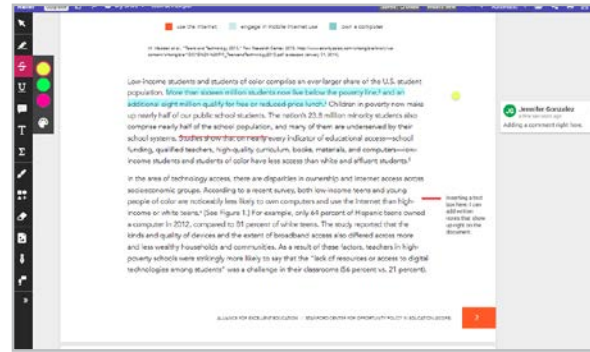
Simpler than many of the other tools in this section, Google Keep is kind of a corkboard where you add notes. A note can contain regular text, a checklist, an image, a drawing, even a voice memo that can be converted to text. Once a note is written, it is added to your Keep as a tile. You can label notes, add collaborators to them, and add reminders to specific notes. Keep comes built-in to Google accounts, so if you have one of those, you can try it right away!



Hypothesis
hypothes.is

This browser extension allows you to highlight and take notes on any web page. You can make your posts public or private or share them in a group, tag them to make them easier to sort, and view public notes taken by other people on the same pages. Your Hypothesis profile page will keep track of all your notes and highlights across the web, so you can revisit them at any time. This makes Hypothesis a great tool for online research and discussion.

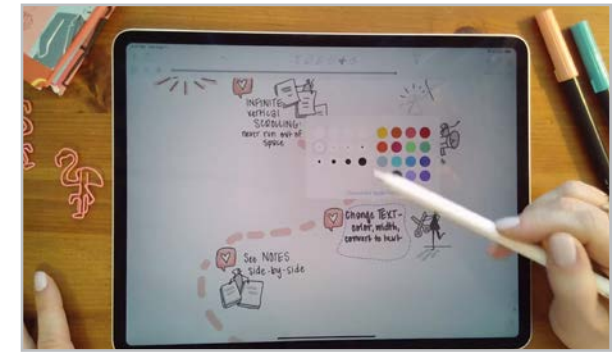
Similar: [Beanote](#)



Kami
kamiapp.com

Kami is an online document annotation and markup tool. Starting with a PDF or any other type of document, users can highlight, strike through, and underline text. They can also insert text boxes, add text, voice, or video comments, and even draw and add shapes, which would be helpful if students are learning how to “code” certain types of text. Great for schools trying to use less paper!

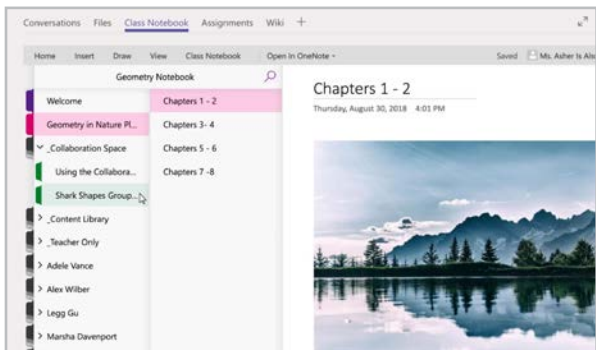
Similar: [DocHub](#)



Notability
notability.com

This iPad app combines the best of paper and word processing: With the text feature, notes can be typed with text formatting options, a variety of fonts, and math and science symbols. Using a pen or stylus, users can handwrite notes and create sketches and diagrams in different colors and pen widths. Users can also add images, GIFs, sticky notes, web clips, and even audio notes.

Similar: [Penultimate](#), [Squid](#) (Android/Chrome)



OneNote

products.office.com/onenote

Microsoft's note-taking tool is set up like a binder with colored tabs, making it great for organizing lots of notes. Along with formatted text, you can add images, handwritten notes or drawings, clipped content from online sources, files, audio notes, and videos. The [Class Notebook](#) add-in allows teachers to create notebooks accessible to whole groups of students.



Rocketbook

getrocketbook.com

The Rocketbook is a physical notebook that you write in using washable ink, transfer the notes to the cloud by capturing them with a phone or device camera, then erase the book and start over. QR codes at the bottom of the notebook's pages can be set up to align with user-created folders in cloud storage such as Google Drive. The notebook comes in different sizes with different layout options (including an academic planner) and other features.

Similar: [Wipebook](#)



Parent Engagement

Can technology get parents more involved? The creators of these tools think so. By taking the same kinds of parent-teacher conversations we've been having throughout history and giving us new, digital ways to communicate, the tools in this section simply make things easier, faster, and more aesthetically pleasing.

Bloomz and **ClassTag** are complete platforms that streamline your parent communication system, making it easy to get in touch with parents with just a few clicks.

Remind sets up teacher-parent communication via text message, without anyone having to

give out their cell number. (It's also good for contacting students!)

SignUp.com helps teachers create online sign-up sheets, making it easier to organize class parties, fundraisers, or conferences.

Smore helps you create beautiful newsletters that can be sent via email or social media.

TalkingPoints is a message translation app that allows teachers and parents to message one another in whatever language they prefer.


None of these tools can replace good communication, and they won't make a busy parent's schedule suddenly clear up. But they make communicating much easier, and because they work through digital channels, they allow everyone to participate in the conversation whenever it's convenient for them.


Keep in mind that some families will not have the devices or internet access needed to use these tools, so always have a paper alternative available, and look for more solutions in our feature [When Your School is Short on Tech](#).

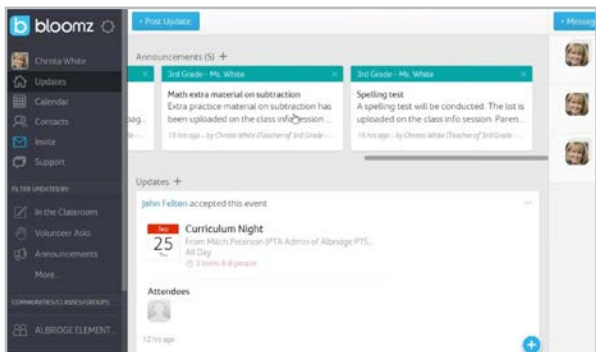


TOOLS FOR ARRIVAL, DISMISSAL, AND TRANSPORTATION

Getting students to and from school safely can be a big logistical challenge for staff and parents. These apps offer solutions.

Carpool to School 
carpooltoschool.com

Pikmykid 
pikmykid.com



Bloomz
bloomz.com

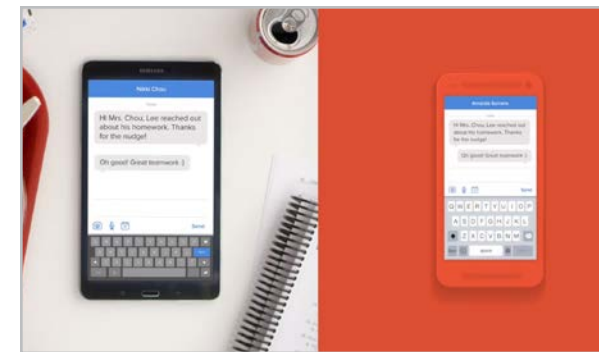
On this all-in-one platform, teachers can send announcements, messages, and updates to all parents or directly to individual parents, create a shared event calendar, post photos and videos of class activities and build student portfolios, coordinate parent volunteers and donated items, schedule parent/teacher conferences, and keep parents informed about their child’s conduct in class.

Family Activity						
FAMILY	STATUS		SITE USE			
Ann Sanders Bill Sanders	Emerging	Volunteered: 4 RSVP Yes: 7 Completed: 2 Overdue: 0	High	Items Viewed: 12% Visits: 15 Summaries read: 24% Announcements read: 51%	Take Action	
Bennet Edwards Jon Edwards Juliet Edwards	Strong	Volunteered: 4 RSVP Yes: 7 Completed: 2 Overdue: 0	High	Items Viewed: 23% Visits: 43 Summaries read: 36% Announcements read: 50%	Take Action	
Ann Sanders Bill Sanders Jennifer J. Sanders	Thriving	Volunteered: 4 RSVP Yes: 7 Completed: 2 Overdue: 0	Medium	Items Viewed: 18% Visits: 15 Summaries read: 25% Announcements read: 38%	Take Action	Email Parents



ClassTag
classtag.com

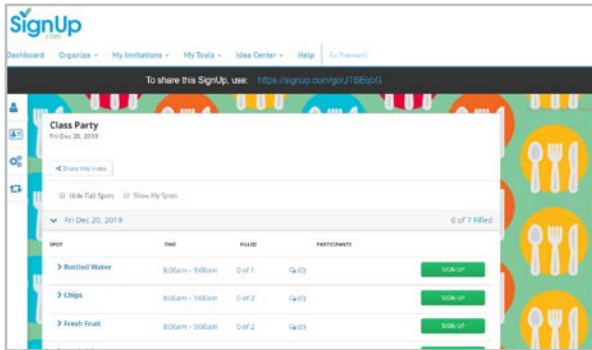
ClassTag is a free platform that allows you to automate and schedule messages ahead of time (and have them automatically translated into dozens of languages), manage parent/teacher conferences and donated items, create a parent directory that allows parents to contact each other for collaborating on special projects, and view analytics that show you which parents are reading your emails, responding to invitations, and volunteering to help.



Remind
remind.com

Remind allows teachers to send text messages directly to parent and student cell phones without anyone having to give out their number. Recipients join a class by texting a code to a given number, and from there, the teacher can send and receive texts through that class. Parents can use the Remind app or just receive regular text messages.

Similar: [BAND](#), [GroupMe](#), [SchoolsBuddy](#), [TeamSnap](#)



SignUp.com
signup.com

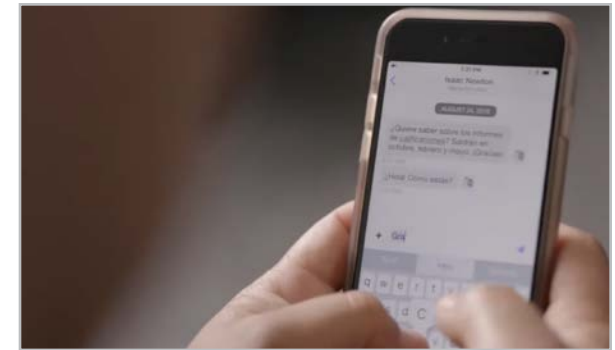
SignUp.com streamlines the process of organizing events and volunteers. Just create the event, listing time slots and items that need to be brought, then send everyone a link and you're done. As slots are filled, they close, so no one can sign up for the same slot or volunteer to bring the same thing. SignUp.com will even send an email reminder to volunteers as the date approaches.

Similar: [Calendly](#), [SignUpGenius](#)



Smore
smore.com

Smore helps you create attractive digital newsletters that you can send via email, embed in a website, or share via social media. Newsletters come in a wide range of templates and can contain blocks of text, photos, embedded videos, event announcements, audio clips, and clickable buttons to send readers to outside links. With a premium plan, you can also give parents the ability to translate the newsletter into a different language.



TalkingPoints
talkingpts.org

This app allows teachers and parents to message each other in their preferred language: The teacher can send out a message in English, and the parent can have it translated into one of over 100 languages. They can also respond in their preferred language and it will be translated back for the teacher. Available as a mobile app or text-only, for parents who do not have smartphones.

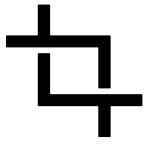


Photo Editing

Photos in school are no longer just taken with the intent of using them for the yearbook; in fact, bringing images into our classroom for our day-to-day teaching can make a world of difference. And with the addition of smartphone and tablet cameras, we don't have to bring them to the local pharmacy to be developed! Photos are easier to take and share than ever before, and because so much of what we do with technology includes images, photo editing has become an important 21st-century skill.

The gold standard in photo editing is [Adobe Photoshop](#), but its high price keeps it out of reach for many. Fortunately, plenty of free photo editing apps are available to get the job done, and we've featured some of the best ones here.

CLASSROOM USES

- Have students learn to edit photos — their own or downloaded from a royalty-free site like the ones in our [Images & Icons](#) section — then use them in videos, presentations, blogs, books, or as podcast cover art.
- Encourage students who show an interest in photography to develop their skills with projects in photojournalism or creative photo editing. Point them to sites like [Flickr](#) for storing and sharing photos and sites like [Portfoliobox](#) for building online portfolios.
- [#BookSnaps](#), an idea created by Tara Martin, is a way for students to take a picture of a piece of text and annotate it creatively with bitmojis and a [Snapchat](#)-like feel.
- Design a photo scavenger hunt, asking students to take pictures of ideas from your content or broad concepts like *peace*, *equity*, or *joy*.
- When students need images for slideshows or presentations, encourage them to not head to the internet to find what they need but take the images themselves, if possible.

- Edit photos of classroom events or projects prior to sharing them on your own website or through social media.
- Create [memes](#) to illustrate an idea or understanding of a concept.
- Learn more about legal image use in the post [Teaching Students to Legally Use Images Online](#).

RETOUCHING REALITY

While photo editing is amazing, it is also important to talk with students about the harm it can do. Retouching photos on social media has gone far beyond just removing red-eye; it can fundamentally change a person's looks, warping the viewer's perception of what real people look like and leading to issues with self-esteem and body image. Two starting points for an examination of this issue are this [article](#) and this Common Sense Media [lesson plan](#).



Adobe Lightroom Mobile

adobe.com/products/photoshop-lightroom/mobile.html

Want to dip into the wonderful world of Adobe’s mobile photo editing tools? This is for you. Adobe has designed Lightroom for ease of use for beginners, making editing and sharing photos to social media a snap. *Platforms:* Android, iOS

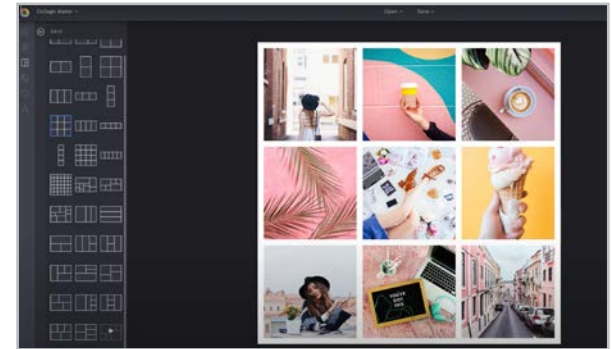


Adobe Photoshop Express

adobe.com/products/photoshop-express.html

At first glance, this app seems similar to Lightroom (at left) but Photoshop Express has more editing features such as borders, stickers, and frames, and it allows you to choose image resolution when you export. [This article](#) offers an overview of the differences. *Platforms:* Android, iOS

Similar: [Snapseed](#)

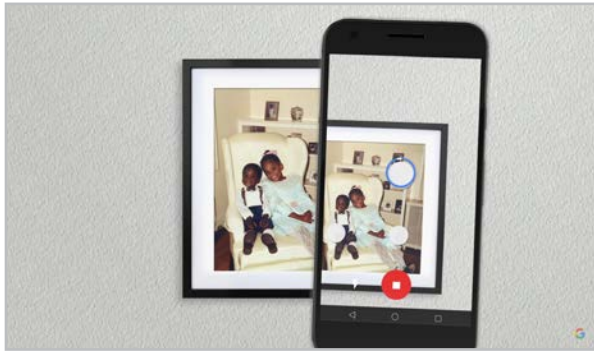


BeFunky

befunky.com

Photo editing, collage maker, and graphic designer are all built into this application. The photo editing is wonderful, and the collage-making is an added feature that can be pretty fun. Also, you can import Google fonts or upload your own fonts! *Platforms:* Android, iOS, Web

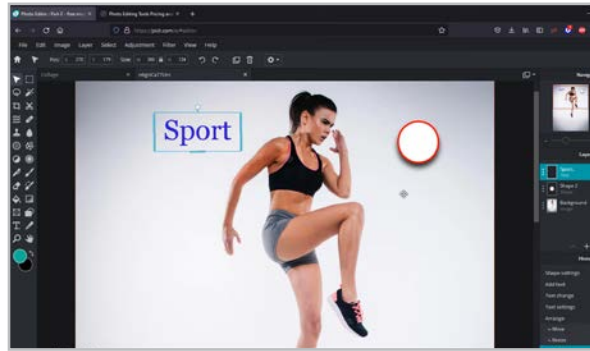
Similar: [Image Candy](#), [PicMonkey](#)



PhotoScan by Google

google.com/photos/scan

PhotoScan stitches multiple images of a photo together to remove glare and improve the quality of your scans. There are also some simple editing tools, but if you use [Google Photos](https://google.com/photos), you can continue with some basic editing. *Platforms:* Android, iOS



Pixlr

pixlr.com

Like many other photo editing applications, Pixlr offers incredible tools, but what makes this app impressive is the capacity to easily leverage it on a Chromebook. *Platforms:* Android, iOS, Web

Similar: [Photopea](https://photopea.com)



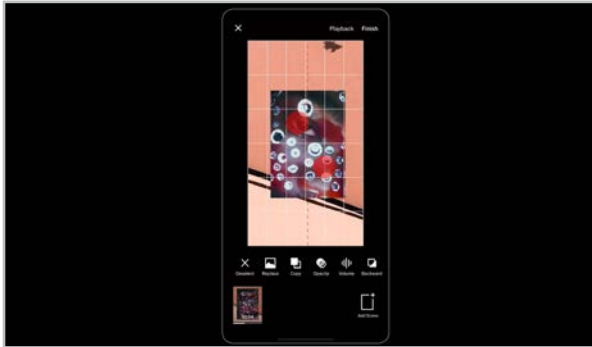
Prisma Labs

prisma-ai.com

Prisma has expanded its application into two programs: [Lensa](https://lensa.ai) for simple photo editing with easy-to-use sliders, and [Prisma](https://prisma-ai.com), which turns your photos into art with a wide range of filters. Both apps are powered by AI, which takes some of the guesswork out of photo editing. *Platforms:* Android, iOS, Web

SOMETIMES YOU JUST NEED THE BACKGROUND REMOVED

Ever take a picture and think “That would look so much better if I cleaned my kitchen in the background?” Many of the apps in this section have features to support that task but if you want a quick remedy, visit remove.bg. Upload a photo, click remove background. Tada!



VSCO

[vSCO.CO](https://vSCO.co)

On this app, you get lots of options for photo editing plus social sharing, where you can display your photos and follow others. These communities are not designated solely for students and may contain mature images, so this would not be an appropriate app for school use. Check out their [YouTube Channel](#) for how-to's and inspiring videos from VSCO creators.

Platforms: Android, iOS

WHAT THE MEGAPIXEL? MOBILE PHOTO TERMS TO KNOW

Achieve that perfect shot by understanding common terms of mobile photography.

Burst Photos: Taking lots of photos of the same image so you can choose the best option.

Exposure: The amount of light allowed to reach your camera's sensor.

Filter: Artistic overlays which range from beauty features to putting a cartoon party hat on you in your photo.

HDR: *high dynamic range*. adds detail from the dark and light areas to provide better photos. Often the default on camera apps.

Megapixel: Digital images are made up of tiny dots called *pixels*. A *megapixel* is simply a million pixels. The more pixels there are, the more the image looks real or accurate.

Panorama: Wider portrait mode images. These require a steady hand as you move your camera along a guideline while the camera takes many photos stitching or connecting them along the way into single, landscape photos. Other terms to look for are **Photo Sphere** (especially for Android users) or **360-degree panorama**.

Portrait Mode: This creates a depth-of-field effect, giving photos a sharp focus in one area and a blurred background.

Rule of Thirds: According to this classic rule, an image is split into nine equal blocks to form a three-by-three grid. The goal? Get the most interesting parts of your image near the corners of these segments. A camera app will overlay a grid on your image so you don't have to imagine the lines!

Timelapse: A collection of still images, usually taken every few seconds and when played back as video makes time appear to speed up.



Physical Education

Even though the whole point of physical education is to get bodies moving through space — the antithesis of sitting motionless with a device in one’s hand — there are tech tools that can enhance the experience.

In 2019, when we [put the call out on Twitter](#) for apps and digital tools for PE, we got some great

responses, and many of the tools suggested in that thread are featured here, along with some updates.

Some of the tools are digital versions of the things PE teachers need all the time: timers, bracket makers, and team formation apps. Some allow teachers and coaches to fine-tune their movement instruction through video. Others offer libraries of instructional videos to help users learn athletic skills or simply move more.

Aside from the tools shown here, [QR codes](#) were mentioned by several teachers as useful for PE instruction. [This post](#) from The Physical Educator explains how that works.

Several teachers said they use [Plickers](#) in their instruction, and some are exploring the use of [virtual and augmented reality](#).

Finally, the topic of [animated GIFs](#) came up quite a bit. To get started with these in PE, check out [this post and video](#) from The Physical Educator.

PE + TECH WEBSITES

These excellent websites explore the intersection of physical education and technology.

Chromebooks in Health and Physical Education

cbhpe.org

Ed Tech Fitness

edtechfitness.com

The PE Geek

thepegeek.com

The PE Specialist

thepespecialist.com

Phys Ed Review

physedreview.weebly.com

The Physical Educator

thephysicaleducator.com



OnForm

onform.com

This video analysis app allows athletes and coaches to closely analyze and correct movement patterns.

Similar: [Video Delay Instant Replay](#)



Sanford fit

fit.sanfordhealth.org

A fully featured and free health and wellness curriculum designed by Sanford Health. Two tools, [fitBoost](#) and [fitFlow](#), are movement programmers built right into the platform.



Sworkit

sworkit.com

This app contains a library of exercises that require little to no equipment. K-12 teachers can get [free access](#) to a paid subscription.



Team Shake

rhine-o.com/www/iphone-apps/team-shake

This app makes choosing teams a breeze. Create a class list, fill in student details, then shake the device and your teams are formed.



OTHER HANDY TOOLS

Bracket builders like [My Bracket](#) make it much easier to manage tournaments and share results quickly. For Android users, [Bracket HQ](#) is a good option.

Nutrition apps like [MyFitnessPal](#) allow users to track macronutrients, calories, water intake, and even exercise.

Timers like [Seconds Interval Timer](#) offer customizable timers for interval training. Great for HIIT, Tabata, and circuit training.

Workout trackers like [RepCount](#) give users a place to log weight lifting and exercise sessions. [Strava](#) tracks many different kinds of exercise, and [MapMyRun](#) is a tracking app specifically for runners.



Podcasting

A podcast is an audio recording consisting of spoken word rather than music. It is usually delivered in the form of an MP3 audio file. People most often listen to podcasts on their computers or through a smartphone app (learn how [here](#)).

Usually, when someone says they “have a podcast,” they’re talking about a podcast series, a show that has regular episodes released daily, weekly, or monthly. Episodes can run anywhere from five minutes to two hours depending on the host and the topic.

This section will cover all aspects of podcasts: We’ll share tools you and your students can use to record, edit, and share podcasts with an audience, other resources to help you enhance those podcasts, and ways you can enjoy podcasts created by others.

TEACHER USES

[This article](#) offers a comprehensive list of all the reasons podcasts make a great addition to the classroom. Here are a few more:

- Record podcasts to deliver content for a flipped, blended, or remote lesson.
- Assign podcasts as homework. Students can write a response, participate in a discussion, or take a quiz about the podcast the next day. Instead of showing a movie the next time you need a catch-up day, have everyone plug into a podcast instead. [Listenwise](#) has a growing collection of outstanding podcasts to choose from.
- Listen to podcasts for your own professional development. On [The Cult of Pedagogy Podcast](#), educators talk about teaching best practices and other topics related to teaching. To find others, visit the Education category on your podcast player.
- Record reading passages for students with learning disabilities.

- Record yourself pronouncing words correctly for language study.
- Use [QR codes](#) to link students to podcasts of you giving instructions for classroom procedures or other tasks.
- Publish a regular podcast newsletter to keep families updated.

STUDENT USES

- Respond to a reading assignment with a solo podcast or discussing the text with a classmate.
- Submit a writing project as a podcast — a book review, persuasive “essay,” short story, or even a how-to piece.
- Interview a classmate or community member as part of a research project.
- Build a podcast like [Be Loud Studios](#) that is intended for an audience outside of school.
- Have students participate in a contest like [The New York Times Annual Student Podcast Contest](#).

CREATING YOUR OWN PODCAST

To get started with producing podcasts, check out these resources:

- [Tips for Starting a Podcast](#) is our guide that covers everything from the tech to how to plan your content.
- [The Teacher’s Guide to Podcasting in the Classroom](#), a PDF created by Listenwise.
- [How to Start a Podcast – A Step-by-Step Podcasting Tutorial](#), a video series geared more toward general podcasters; great for anyone who wants to do a “real” podcast.
- Cult of Pedagogy’s guide to [Equipment and Tools for Producing Classroom Videos and Podcasts](#) for recommendations on microphones.
- What about video? In this section, we focus on audio-only podcasts, but many podcast [creation platforms](#), like **Anchor**, **Podbean**, and **Zencast**, support video as well. If you’re trying to decide which direction to go, [this article](#) will help.

ADDING MUSIC

Most podcasters use music for their show intro and “outro” (the bit at the end). The tricky part is making sure you do this legally; if you don’t, you can get fined for copyright infringement. To learn more, read [Using Copyrighted Music and Media in Your Podcast](#).

What most podcasters do is buy a license to use royalty-free stock music from sites like [Epidemic Sound](#) and [Storyblocks](#), where you can browse thousands of tracks, then download them for use after paying the license fee.

You can also use free music licensed through [Creative Commons](#); just pay attention to the license requirements. A good site to find these is [Free Music Archive](#). And if you’re looking just for sound effects, try [Freesound](#).

Anchor allows creators to use Spotify music in Anchor podcasts. Learn more [here](#).



LEARN THE BASICS OF PODCASTING IN JUMPSTART

Podcasting is the focus of one of the 10 modules we study in JumpStart, our online technology course for teachers. Learn about the course [here](#).

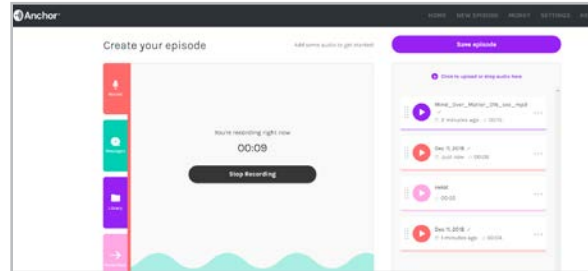
FUN EXTRAS

- [Headliner](#) allows you to layer your podcast episode over an image or video, which could include closed captions.
- [Anchor](#) podcasters can add polls and Q&As at the bottom of their episodes on the [Spotify](#) mobile app.
- With [Fireside](#), hosts can design interactive experiences for the audience by allowing them to ask questions and leave emoji responses and comments.

CREATION TOOLS

Creation Tools | Listening Platforms

These tools give you everything you need to create a podcast. Recording and editing is the first step. Once you have the final file, you then need to publish it somewhere. Some platforms, like **Anchor** and **Podbean**, let you do all of these steps in one place, but sometimes their tools have some limitations. For more advanced options, you can edit your files with a tool like **Audacity**, then publish them on a separate platform.



Anchor
anchor.fm

Owned by Spotify, this platform lets you record your podcast into “segments,” arrange segments into episodes, then publish on Anchor or distribute it to a range of platforms.



Audacity
audacityteam.org

This popular, free software is used to record and edit audio files, not for publishing. More challenging than apps like Anchor.

Similar: [GarageBand](#), [Soundtrap](#)

OTHER PUBLISHING PLATFORMS

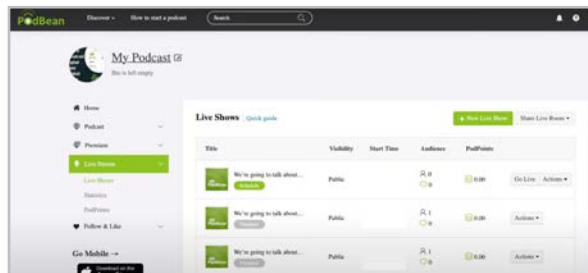
Similar to Anchor and Podbean, these platforms offer similar publishing features, and many also host podcasts to listen to. Be aware that none have any kind of filters for children, so inappropriate material is easy to stumble on.

[Audioboom](#)

[Spreaker](#)

[Podomatic](#)

[Transistor](#)



Podbean
podbean.com

Use this app to quickly record, edit, and publish your podcast right from your cell phone. If you want to broadcast in real time, try their live streaming option.



Zencastr
zencastr.com

This is a great solution for doing interviews. Talk via videoconferencing, and when you’re done, download each person’s voice on a separate MP3 file for easy editing.

LISTENING PLATFORMS

Creation Tools | Listening Platforms



Kids Listen
kidslisten.org

This platform is dedicated to curating podcasts for kids. They currently have 28 member shows that have been carefully screened for appropriateness. Topics include stories, animals, news, geography, science, mindfulness, and more. Episodes can be listened to on desktop or through the app.

Similar: [Leela](#)



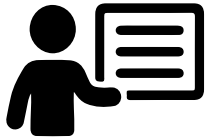
Pinna
pinna.fm

Listen to student-friendly podcasts, audiobooks, and music all in one place with Pinna. This platform differs from the other podcast platforms because it offers curriculum-aligned teaching resources to promote and improve literacy skills for all students. Reduce student screen time and nurture a love for reading and listening with original content from Pinna or curated content from all over the world.



The Walking Classroom
thewalkingclassroom.org

Combining learning with exercise, this unique program supplies curriculum-aligned podcasts for students to listen to during 20-minute walks through the program's pre-loaded audio players or mobile app. Content is available for grades 3-8 in ELA, social studies, and science.



Presentation

Once upon a time, we only had PowerPoint to create presentation slideshows. But now, other web-based tools give us different ways to add visual support to our presentations. Online platforms such as Canva and Emaze allow us to easily design epic presentations, building our visuals around bigger concepts that serve as metaphors for our ideas.

The tools in this section will help you and your students create presentations that can be given in person, via videoconferencing software, or turned into pre-recorded videos with the help of [screencasting](#) tools.

One caution: Many of these tools are web-based, so presentations made with them only work if you're connected to the internet. Fortunately, many of these platforms give

you the ability to download and deliver presentations offline, but it doesn't happen automatically; to avoid last-minute problems caused by a poor internet connection, look for an offline option and set it up ahead of time.

To make sure your presentations are as good as they can be, read the tips in the post [Let's Make Better Slideshows](#).

AN EASY WAY TO SHARE A LINK WITH YOUR AUDIENCE

Sometimes when you're presenting, you need to quickly send your audience to a specific website, but giving a long, complex URL isn't efficient. The website [yellkey](#) allows you to convert a longer URL into something quick and easy to type into a browser. No account needed, because the link is only temporary — you can set it to expire in 5 minutes or up to 24 hours. See how it works in [this video](#).

LIKE YOUTUBE FOR SLIDESHOWS

If you'd like to share your presentation with a wider audience or explore the work of other creators, check out [SlideShare](#), where users upload their slideshows for public consumption. (For users age 16 and older.)

SICK OF THE SAME OLD TEMPLATES?

On sites like [SlidesCarnival](#) and [Slidesgo](#) you can find hundreds of free templates for PowerPoint and Google Slides.

PRESENT WITH OTHER TOOLS IN THIS GUIDE

Quite a few other tools in this guide also offer presentation capabilities. Here are a few to try:

[Genially](#)

[Piktochart](#)

[Explain Everything](#)

[Sutori](#)

[Lucidchart](#)

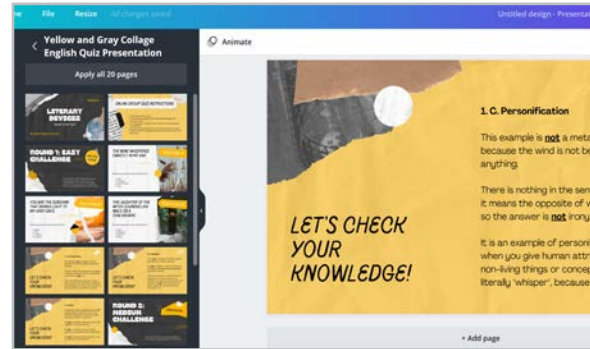


AhaSlides

ahaslides.com

AhaSlides makes any presentation interactive with colorful, eye-catching live polls, quizzes, word clouds, brainstorming activities, spinner wheels and other interactives that gather real-time feedback and engage participants. You can start from scratch with one of AhaSlides’ templates, or import your own PowerPoint or Google Slides presentation, then add interactive slides in between your content slides.

Similar: [Mentimeter](#), [Slido](#)



Canva

canva.com

Are you looking for beautiful designs and layouts for your LMS course, website, or lesson slides? Canva has curated thousands of customizable templates that you can easily make your own or use as is. You can add text, hi-res stock images, animations, and other interactive elements such as QR codes. Students can also create their own presentation with designs from scratch or using a template you send them, then submit it as an assignment within [Canva for Education](#).



Emaze

emaze.com

If you like the cool movement transitions you can get in a Prezi, you’re going to love Emaze. Using this web-based tool, users create presentations with one of Emaze’s creative templates. Slides appear as paintings in an art gallery, as different sections of a newspaper, and so on. This offers something fresh that your audience may not be used to, and it’s an opportunity to play with metaphor as a structure for your presentation.



Google Slides

google.com/slides/about

Similar to PowerPoint, Google Slides is a simple presentation tool with extensive possibilities for any project, lesson, or activity (even [interactive notebooks](#)). Ideal for Google-based schools, Slides allows students to collaborate and share their work easily. You can create polls, word clouds, and other activities using add-ons from [Slido](#), [Nearpod](#), or [Pear Deck](#) to add a layer of engagement right within Slides. And to make a presentation easier to run in class, try the app [Remote for Slides](#).



Haiku Deck

haikudeck.com

If you're a fan of the movement that sprang from the book [Presentation Zen](#), you'll love Haiku Deck, which gently nudges you to create slides that are driven by images rather than text. To help with that, they offer a huge library of beautiful images you can pop right into your slides and an easy notes feature that puts your text in the presentation, not on the slides. For teachers, [Haiku Deck Classroom](#) offers privacy settings, Google Classroom integration, and other features.



Nearpod

nearpod.com

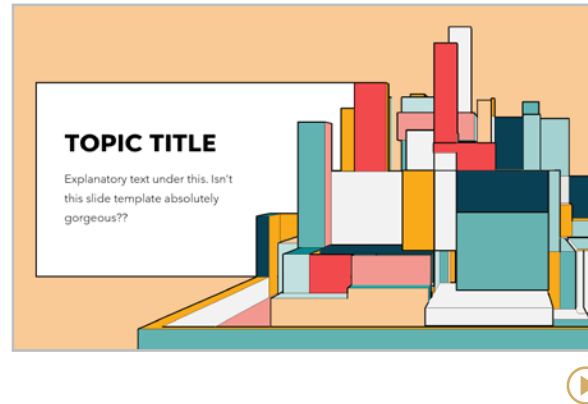
Nearpod allows you to take slides and project them onto student devices, add interactivity, then watch on your own device as students click on items, fill in blanks, work with simulations, and draw or write their responses. Insights come directly to your teacher dashboard, allowing you to adjust instruction or differentiate as needed. In addition to presentations, Nearpod now offers the ability to create [interactive videos](#).



Pear Deck

peardeck.com

Similar to Nearpod, Pear Deck lets you turn slideshows into engaging, interactive lessons to formatively assess student understanding as you go. Pear Deck has partnered with organizations to create ready-to-use decks based on adaptive news articles from [Newsela](#), Google's [Be Internet Awesome](#) digital citizenship curriculum, and slide templates created by [Canva](#). Learn about the [Google Slides Add-On](#) to utilize your existing slide decks.



PowerPoint

office.com/powerpoint

The granddaddy of slideshow tools does more than create presentations: PowerPoint offers collaboration, image editing, and video features that are easy to use. It even suggests design ideas customized to your content. You can use a desktop version or the online version under Microsoft 365 which comes with features such as [live translation services](#). And the [recording](#) feature allows you to turn a slide presentation into a video with recorded narration.

Similar: [Keynote](#)

SHARING IS LEARNING: SCREEN MIRRORING

Screen mirroring allows anyone with a device to share their entire screen over a wireless network on a larger display. This opens up so many instructional possibilities for collaboration and interaction. Students can share interesting things they found during a class project, demonstrate a tech skill, or share their writing or other documents for peer feedback.

Some tools that allow screen mirroring are [AirPlay](#), [Airtame](#), [Ditto](#), and [Vivi](#).

During hybrid and remote teaching, teachers used video conferencing platforms to share videos and music, which can also be an option for screen mirroring in a face-to-face classroom if everyone logs into a videoconferencing session. Learn more in these articles:

[Sharing Your Screen with Zoom](#)

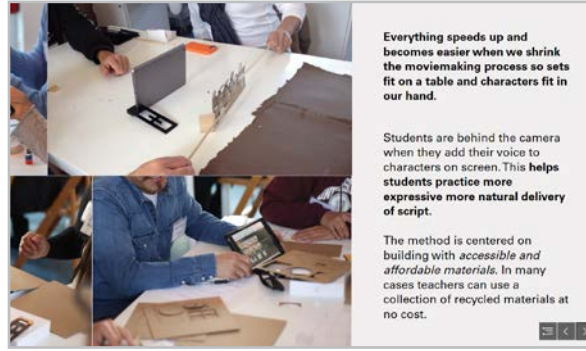
[Sharing Your Screen with Google Meet](#)



Prezi

prezi.com

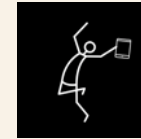
Instead of a deck of slides, presentations in Prezi are built around a single image: a map, a staircase, a tree with roots, a path of footsteps. On that image, the presenter places words, images, videos — but you don't see them at first; the presentation moves you in a path around the image, sliding left to right, rotating, zooming in on objects, then out again to show you where they fit in the big picture. Check out [Prezi Video](#) to record these presentations with your own video narration, and [click here](#) to learn about their educational pricing.



Sway

sway.office.com

Somewhere between PowerPoint, Prezi, and [Adobe Express](#) lies Microsoft's Sway. This unique platform helps you create a dynamic presentation that moves both horizontally and vertically and almost has the feel of a fresh, modern website. Start by typing all your information into a storyline, adding images, videos, and other content, then let Sway suggest a design for your presentation. Once you've fine-tuned your slideshow, hit "play" to present it online.



LEARN HOW TO MAKE BETTER SLIDESHOWS IN JUMPSTART

Slideshows are the focus of one of the 10 modules we study in JumpStart, our online technology course for teachers. Learn about the course [here](#).



Productivity & Planning

Although the tools in this section are not directly related to teaching, they help solve one of teachers' biggest problems: lack of time. And sharing the tools with students and parents can help everyone become more productive.

Boomerang helps you take control of your inbox with message scheduling.

Calendly, **Google Calendar**, **Microsoft To Do**, and **Today** help you keep track of the important tasks, appointments, and projects in your life.

All are paperless and work on all devices, making this process seamless, quick, and portable. You could use these tools to share calendars and lists with students and parents to keep everyone on top of important events, assignments, and projects. They could also be used to organize your life outside of school.

Clever groups all your apps onto one screen and gives you a single quick sign-on to all of them.

Forest helps you focus without distraction and grow a plant in the meantime.

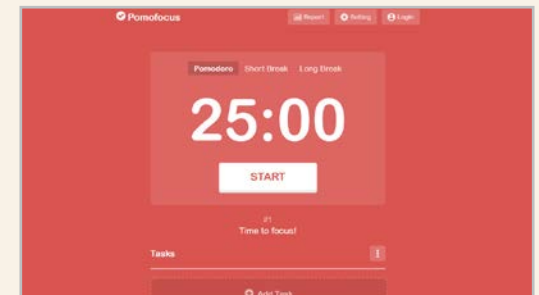
IFTTT sets up communication between the apps you use so you can automate the tasks you do over and over again. Not only can this streamline your personal apps, it could also help you and your students automate things like a class or school Twitter account.

Noisli provides custom white-noise blends you can play to block out distractions and improve your focus. This could be useful on your own time or during whole-class "quiet" reading or writing time.

Planboard makes lesson and unit planning fast, easy, and synced across all devices.

Text Blaze automates common chunks of text so you don't have to keep writing the same things over and over.

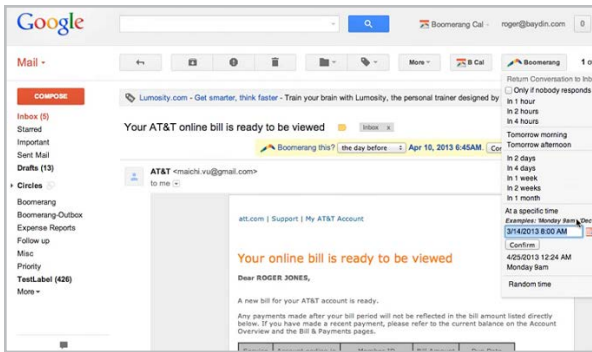
Togg! Track helps you easily measure how much time you spend on various tasks. Not only can this improve your own productivity, it could also help students better understand how they spend their free time.



THE POMODORO GOES DIGITAL

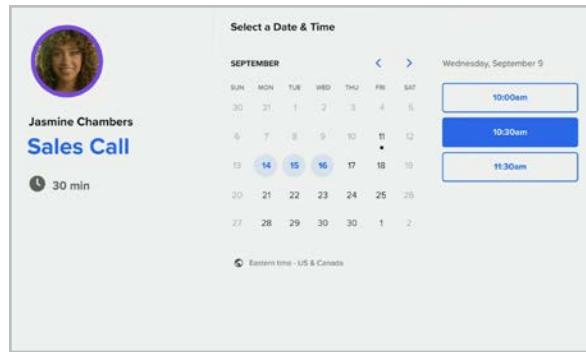
The [Pomodoro Technique](#) is a popular productivity strategy built on a 25-minutes on, 5-minutes off schedule. [Pomofocus](#) is a simple web-based timer that enables you to set up your own Pomodoro session.

Boomerang | Calendly | Clever | Forest | Google Calendar | IFTTT | Microsoft To Do | Noisli | Planboard | Text Blaze | Today | Togg! Track



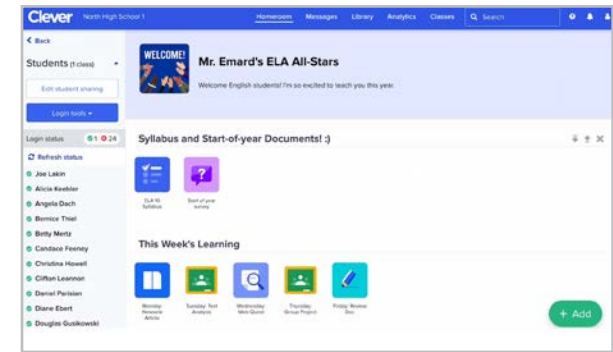
Boomerang
boomerangapp.com

This tool works as an add-in to Gmail or Outlook to give you better control over your email. It allows you to schedule emails to be sent at a later date, set up recurring emails, reschedule incoming emails to come back to you at a more convenient time, and control when new emails appear. Additional features include [Share Free/Busy](#), which allows others to see your availability at a glance, and [Respondable](#), which uses artificial intelligence to assist in crafting more effective emails.



Calendly
calendly.com

This meeting scheduling app saves you tons of time you'd otherwise spend going back and forth in emails. Users set up timeslots, share them through a link, and people sign up for the time that works best for them. As people take timeslots, they disappear so no one can double up. Calendly automatically switches available times to the time zone of the person viewing the schedule, so you don't need to worry about which person's time zone you're planning for.



Clever
clever.com

Clever helps you get all of the apps and tools you use with your students into one streamlined page. But it's more than just a bookmarking tool: Clever is integrated with hundreds of apps and tools, so you and your students can log in with a single sign-on, saving you time and energy that used to be spent hunting down lost passwords and helping students log into the apps they need.

Boomerang | Calendly | Clever | Forest | Google Calendar | IFTTT | Microsoft To Do | Noisli | Planboard | Text Blaze | Today | Togg! Track



Forest

forestapp.cc

Useful for teachers and students alike, this mobile app (which is inexpensive, but not free) keeps away distractions by having you set a period for focused work, during which time you keep the app open on your device. As you work, a sapling grows into a tree, but if you use your device for something else, the tree withers. Productivity is rewarded with coins and the satisfaction of growing your own forest.

Similar: [FocusByte](#)

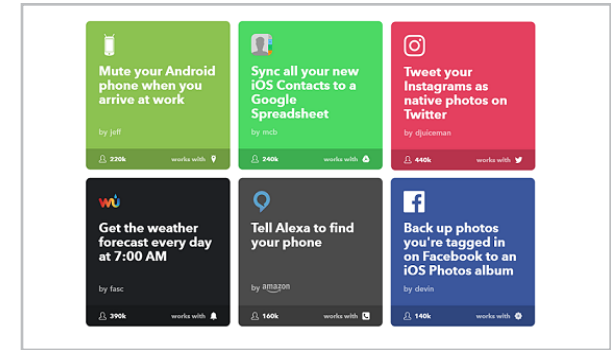


Google Calendar

google.com/calendar

This online calendar gives you a place to record important dates and create to-do lists. You can set reminders, invite others to participate in events, set events to repeat daily, monthly, or weekly, and create separate, color-coded calendars for different areas of your life. All items are synced across devices, making it easy to stay on top of your schedule. [This video](#) shows how to use Google Keep with Calendar.

Similar: [Preceden](#)



IFTTT (If This, Then That)

ifttt.com

IFTTT automates the tasks you do over and over by letting your tools talk to each other. It links them with “applets,” little programs that add automatic triggers: When one service does something (for example, “When I post a photo on Facebook...”), you tell the other service to do something else (“...automatically send that photo to Dropbox.”).

Similar: [Zapier](#)

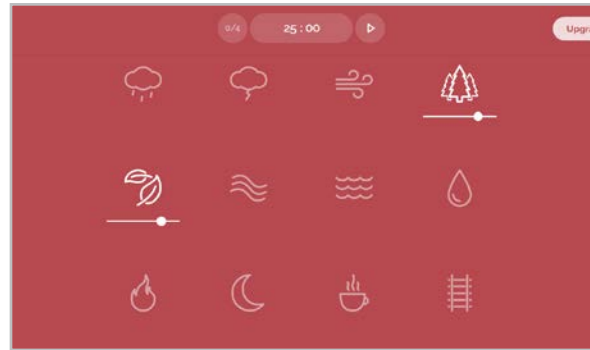
Boomerang | Calendly | Clever | Forest | Google Calendar | IFTTT | Microsoft To Do | Noisli | Planboard | Text Blaze | Today | Togg! Track



Microsoft To Do
todo.microsoft.com

This list-making app syncs across all your devices and lets you keep multiple lists and sub-lists for different areas of your life. Lists can be shared with others, and individual items can have due dates and reminders, notes, and attached files.

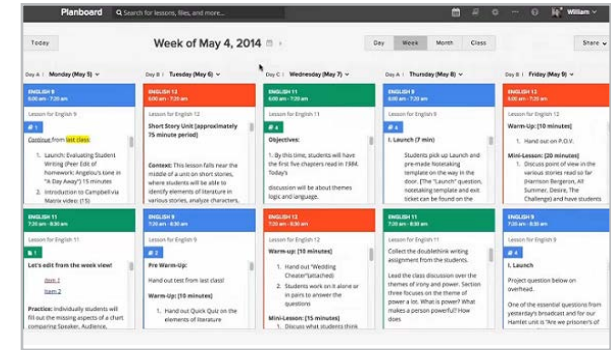
Similar: [Pomotodo](#), [Taskade](#), [Todoist](#)



Noisli
noisli.com

Noisli is basically a white-noise generator, offering a menu of sounds you combine to create background noise that can help you focus. Mix “coffee shop” with “rain” and “fireplace,” and you’re sitting by a fireplace in a coffee shop on a rainy day. Mix “forest” with “leaves” and you’re out for a walk on a crisp fall day. Use Noisli to boost your own concentration and help students block distractions during independent work. Now available as a [Chrome extension](#).

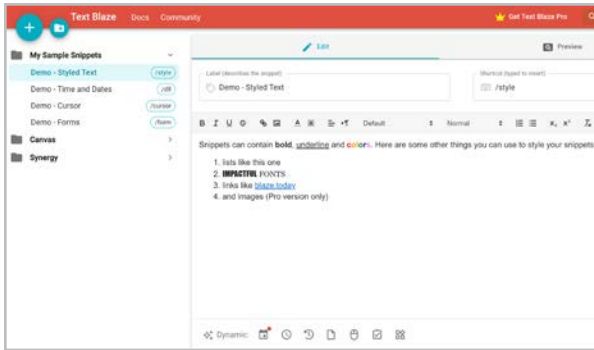
Similar: [Brain.fm](#)



Planboard
chalk.com/planboard

This free tool, which syncs across all devices, makes lesson planning a breeze. Blocks of time show what you’re doing during each class period, and you can rearrange them easily. Within each block you can create a rich, dynamic lesson plan that can include formatted text, bulleted lists, aligned standards, links to outside resources, and attached files. Now includes a gradebook where you can easily add students from Google Classroom or Schoology.

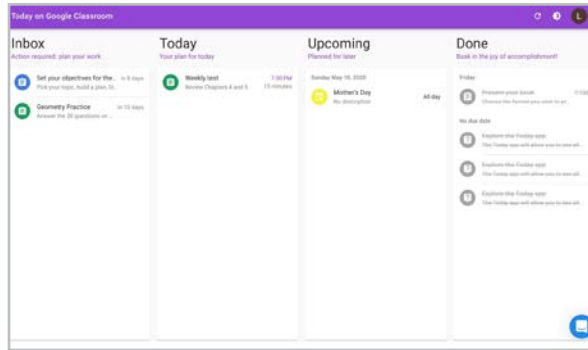
Boomerang | Calendly | Clever | Forest | Google Calendar | IFTTT | Microsoft To Do | Noisli | Planboard | Text Blaze | Today | Toggl Track



Text Blaze
blaze.today

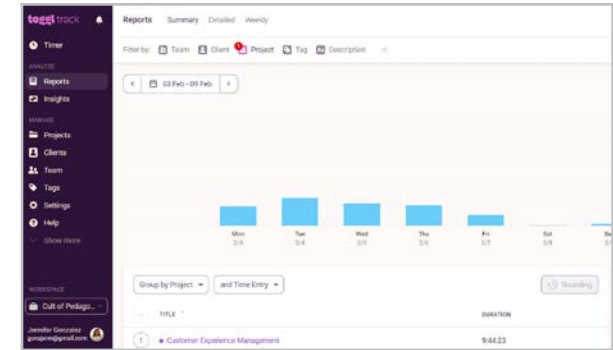
This Chrome extension will save time if you find yourself typing the same things over and over. Just create a snippet (something you wouldn't normally type, like /feedback), then write out longer text that will appear automatically any time you type that shortcut. Text Blaze works great with student information systems, learning management systems, and Chrome-based productivity tools (Google apps, email).

Similar: [Keyset](#), [Magical](#), [PhraseExpress](#)



Today
studyo.today

This procrastination-busting tool works with Google Classroom to help students plan and organize their assignments over the course of a week, estimating how much time they think each task will take, and dividing larger tasks into smaller ones.



Toggl Track
toggl.com/track

Tracking how you spend your time helps you learn how to use it better; this tool can help. With a single click, Toggl lets you keep track of how much time you spend grading papers, planning lessons, or any other task; daily and weekly reports help you see trends. Show students how to use the tool and encourage them to track the time they spend on schoolwork, exercise, social media, or anything else they'd like to measure.



QR Codes

QR codes (short for *quick response codes*) — those funny little black-and-white squares that seem to be on every kind of publication imaginable — are kind of an advanced version of bar codes. And because anyone can make their own, their use goes far beyond the grocery store or allowing us to read menus under COVID.

CREATING QR CODES

Just plug any URL or website address into a QR code maker ([like this one](#)) and it instantly gives you one of these little pictures. That picture can be put on anything: a PowerPoint slide, a poster, a piece of paper, whatever.

SCANNING QR CODES

Once the code has been placed somewhere, anyone with a mobile device can scan the code and the device will go straight to that URL. Watch this [video demo](#) to see how it works. Many smartphones already have QR scanners built in or as part of the camera; if yours doesn't, you may need to [install an app](#).

QR codes can also be created to store hidden text (like a secret note you write that can only be revealed when someone scans the code), to send contact information into a person's contact list, or to send a text message.

CLASSROOM USES

- Post QR codes around your classroom or school, linked to videos or text instructions for using specific equipment or following common procedures.
- Give parents your contact information with a QR code: When they scan the code, the information goes right into their contacts. Use QR codes in newsletters to put dates right into their calendars.

- Have students create their own QR codes to add text or links to essays or poster projects.
- Provide feedback or grades to students via QR codes, which keeps it private.
- Use QR codes to make your classroom more accessible for students with special needs. Read [Using QR Codes in the Special Ed Classroom](#) for a few ideas.

LINK SHORTENERS: ANOTHER EASY WAY TO SHARE

The beauty of the QR code is that it allows us to share things like long URLs more quickly and easily. Another way to share a long, complex link is with a link shortener. One popular link shortener is [Bitly](#).

These tools allow you to create a unique, short URL that will redirect to a longer one. [This article](#) explains how it works.



Research

Can technology do research for us? Not exactly: Good research skills must be taught and practiced. Technology can't replace the analytical thinking, careful discernment, and writing skills required for rigorous research.

What technology *can* do is make research more efficient, removing some of the drudgery and repetition from certain research-based tasks, especially when it comes to finding, keeping track of, and citing resources.

Long ago, researchers had to use card catalogs and the *Reader's Guide to Periodical Literature* in hopes of finding the right sources, citations were done by hand, and formatting in MLA, APA, or any other style was painstaking and

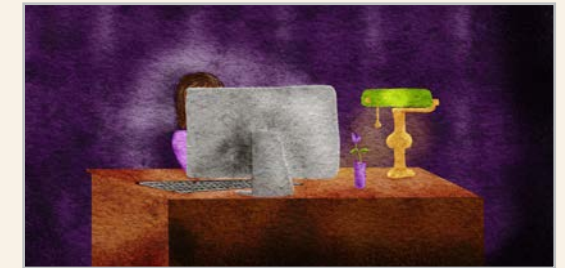
time-consuming. The tools in this section automate those tasks, allowing users to put more time and energy into learning.

CLASSROOM USES

- Teach students how to search for quality resources with a [student-friendly search engine](#), then do in-text citations and bibliographies with a tool like **MyBib**.
- Have advanced students find, read, and cite academic publications with **Google Scholar**.
- When producing a video, blog, book, or interactive poster that uses content from outside sources, get students into the habit of maintaining a list of those sources with a tool like **MyBib** and including that list in their final product.
- Collaborate with colleagues on research using shared resource libraries like those in **Zotero**.
- For more fantastic ways to teach research skills to students, download Kathleen Morris' free PDF, [50 Mini-Lessons for Teaching Students Research Skills](#).

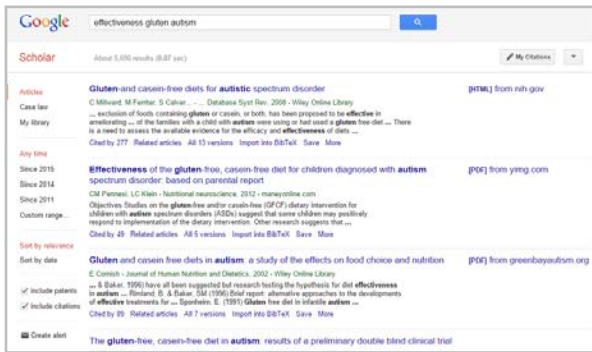
EXPLORE INSIDE GOOGLE

The [Explore](#) feature built into Google Docs, Slides, and Sheets allows you to research a topic and create a citation without ever leaving the file you're working on. [This video](#) shows you how it works.



BOOST YOUR ACADEMIC RESEARCH SKILLS

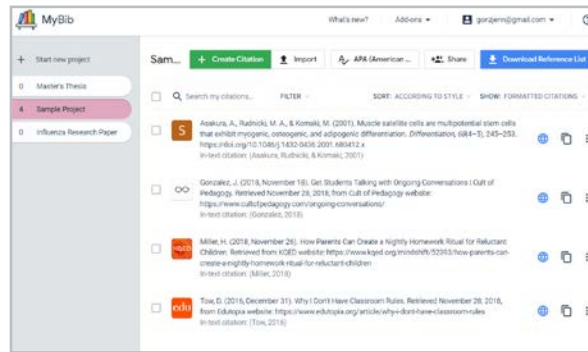
If you don't have a lot of formal training in academic research, but you want to get better, head over to [How to Find, Read, and Use Academic Research](#) for a blog post, podcast interview, and YouTube series that will sharpen your skills.



Google Scholar

scholar.google.com

Using the power of Google’s search engines, Scholar provides users with special filters and tools to make it easy to search for, organize, and cite academic research. Searches only return results from academic institutions and scholarly publishers: abstracts, books, articles, theses, and court opinions. Results also list whether the full text of the document is available through a public institution or a user-affiliated university library.

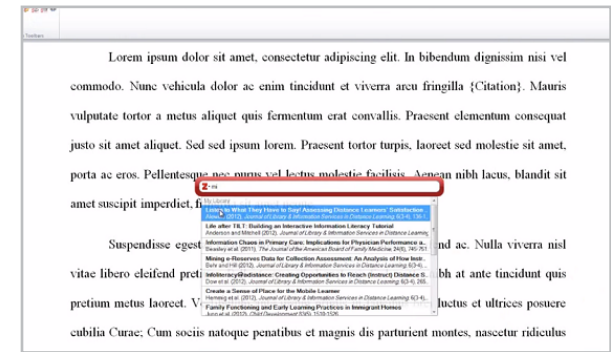


MyBib

mybib.com

Citing sources can be time-consuming. With MyBib, you can simply plug in a little bit of information about your source (such as the URL of a website) and get a fully formatted citation. If MyBib’s search engine can’t find a piece of information, they’ll tell you so you can fill it in. Citations are available in 11 different styles, including APA, MLA, Chicago, and Harvard.

Similar: [BibMe](#), [EasyBib](#), [ZoteroBib](#)

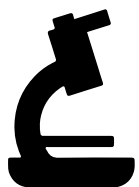


Zotero

zotero.org

Zotero helps manage complex research projects, even those that involve other people. When you find an online resource, click the Zotero icon in your browser to save the item in your Zotero Library. You can also set up groups where you can share resources in a group library and have discussions with other group members.

Similar: [Mendeley](#), [NoodleTools](#), [Papers](#)



Science

In the fall of 2017, we put out a [request on Twitter](#), asking people to recommend favorite tech tools for science. Since this section was first introduced to the guide in 2018, more tools and websites have been added every year.

It shouldn't have been a surprise that "science" covers a lot of territory. Putting the tools into sub-categories proved to be harder than it seemed at first, so they are just listed alphabetically. To help you navigate through them, here are some basic groupings of the kinds of tools and websites you'll find here:

- Some provide **lesson plans and other curricular materials**: BrainPOP Science, Gender-Inclusive Biology, HHMI

Biointeractive, Learn.Genetics, Mystery Science, OpenSciEd, Physics Classroom, and Viziscience.

- Some offer **interactive tools** that simulate, measure, or organize scientific phenomena like Algodoo, Arduino Science Journal, ExploreLearning Gizmos, PhET Simulations, and PTable.
- Then there are the **visualization tools** that give us a closer or clearer look at science: ArcGIS Online, Compound Interest, Google Earth, NASA's Eyes, PyMOL, Star Walk 2, and Visible Body.
- Finally, there's Zooniverse, which stands on its own as a unique platform for **crowd-sourced research**.

NEED SCIENCE IMAGES?

[BioRender](#), in the Images & Icons section, is an incredible platform that helps you build your own professional-looking science images.

NGSS RESOURCES

U.S. teachers should check out all the resources available at nextgenscience.org, where you can search the standards and find related resources.

[Next Generation Science Storylines](#) are lesson sequences driven by essential questions like [why antibiotics don't work like they used to](#). These thoughtfully designed, standards-aligned storylines are free to download.

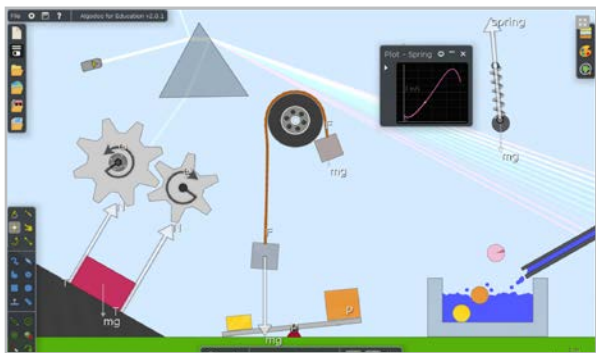
TWO MORE WORTH A LOOK

[Tabletop Whale](#) is a stunning collection of science-themed infographics, charts, and illustrations.

[Mosa Mack Science](#) offers a collection of animated, NGSS-aligned science mysteries for grades 4-8, plus lesson plans, hands-on labs, and more.

A

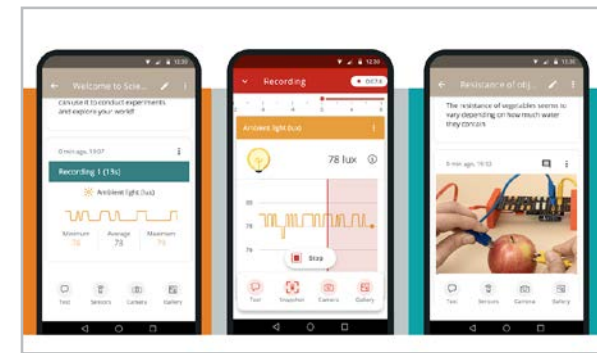
A | B-E | G-H | L-N | O-Ph | Pt-S | V-Z

**Algodoo**algodoo.com

On this 2D simulation platform, use simple [drawing tools](#) to create objects, then manipulate them by adjusting parameters like gravity and friction, or adding liquids, hinges, motors, and light rays. With your components in place, you can press “play” at any time and watch how they would naturally react in the physical world.

**ArcGIS Online**esri.com/en-us/arcgis/products/arcgis-online

With this cloud-based GIS software, users can build beautiful, interactive maps that make data visible. Teachers have access to standards-based lesson plans and other [resources](#) to support their teaching with the software.

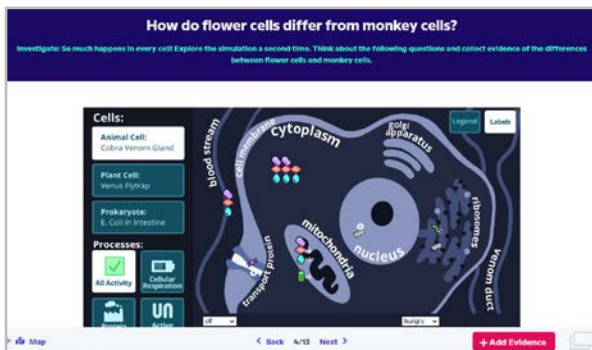
**Arduino Science Journal**arduino.cc/education/science-journal

Formerly Google Science Journal, this app is basically a measurement tool you keep on a smartphone, Chromebook, or tablet. Using the built-in sensors on these devices, users measure things like light, sound, and motion, then journal the results right in the app. To get a better idea of how this tool can be used, browse Arduino’s [experiments](#) page.

Similar: [Lab4U](#), [Physics Toolbox Sensor Suite](#)

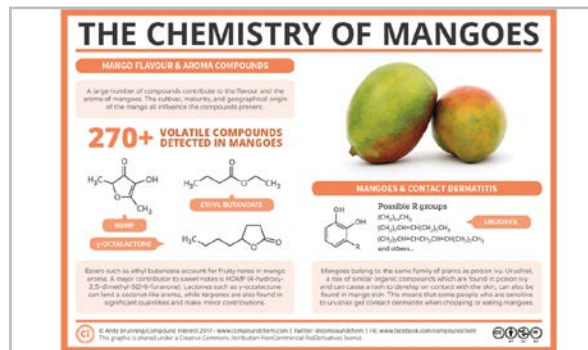
B-E

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BrainPOP Science
science.brainpop.com

BrainPOP's newest platform takes the magic of BrainPOP and focuses solely on grade 6–8 science. Aligned with NGSS and full of simulations, manipulatives, videos, and investigations, the platform includes classroom and school-wide reporting that provide insight into student performance. [BrainPOP](https://science.brainpop.com) also offers resources for other content areas and ages.



Compound Interest
compoundchem.com

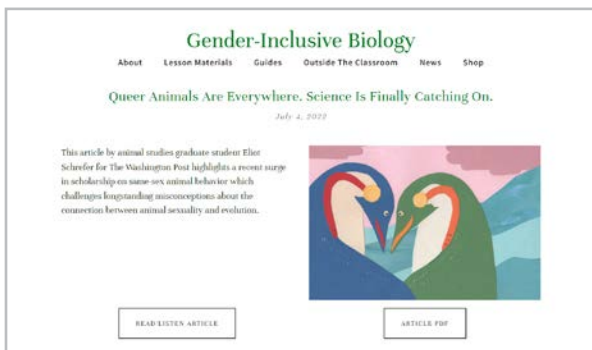
Chemistry teacher Andy Brunning runs this site single-handedly, and his goal is simple: to illustrate chemical compounds in visually appealing graphics. Brunning covers topics like “The Science Behind Anti-Aging Creams” and “Crime Scene Chemistry – Fingerprint Detection” with both written explanations and visually stunning design. All infographics are [Creative Commons](https://creativecommons.org/licenses/by/4.0/) licensed and free to download and print for educational use.



ExploreLearning Gizmos
explorelearning.com

These interactive math and science simulations were one of the most mentioned tools in our survey of science teachers. Sorted by grade level, topic, or standard, the Gizmos provide simulations of hundreds of concepts, things like heat transfer, cell division, gravitational force, and electrical circuits. Although a paid account gives you access to all Gizmos, ExploreLearning offers free access to select Gizmos, so you can check them out right away.

G-H



Gender-Inclusive Biology
genderinclusivebiology.com

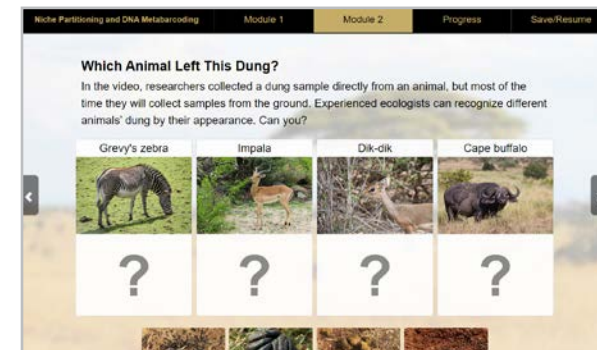
Run by three science teachers, the goal of this site is to curate biology resources that are more gender-inclusive. The site includes videos, lesson plans, teaching guides, and resources for outside the classroom as well.

Similar: [Project Biodiversify](#) aims to enhance diversity and inclusivity in biology courses.



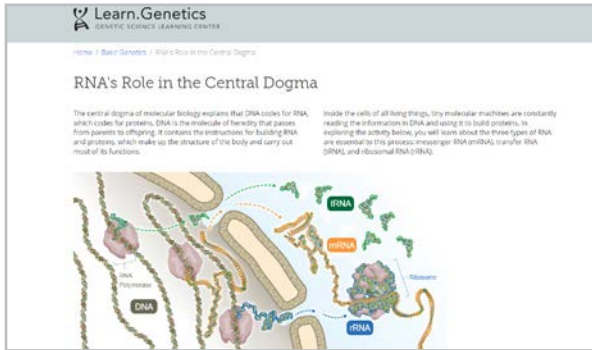
Google Earth
earth.google.com

For anyone teaching earth science, this free tool is indispensable. Get up-close views of any place on earth with views of topographic details, tools to measure distances, and the ability to go right down to street view in many places. For ideas and resources for how to use this tool, visit the [Google Earth Education](#) page. To stay on top of all Google Earth updates, visit [this page](#).



HHMI BioInteractive
biointeractive.org

This collection of science multimedia resources includes short films, virtual labs, teacher guides, and Click & Learns (pictured above), interactive tutorials that contain animations, images, and video clips. BioInteractive's videos can also be enjoyed on their [YouTube channel](#), with a handful available in Spanish. Be sure to also check out their [educator tips](#), a playlist of videos where real teachers talk about how they use the resources in their classrooms.



Learn.Genetics

learn.genetics.utah.edu

On this beautifully designed website, students can explore articles, interactives, and videos that teach the basics of genetics, plus other lessons on cell biology, human health, and neuroscience. See their companion website, [Teach.Genetics](#), for free downloadable lesson plans and other classroom resources.

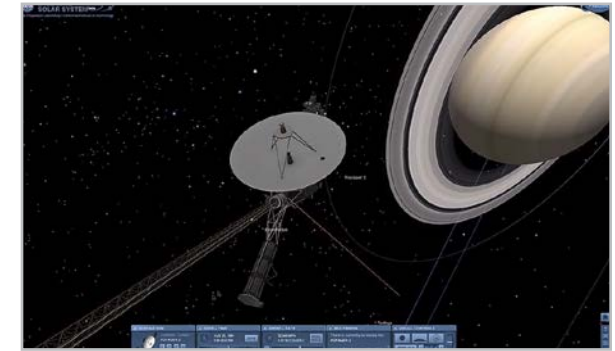


Mystery Science

mysteryscience.com

This fantastic collection of “open and go” lessons is a K-5 science teacher’s dream come true. Each lesson begins with a two-minute video that introduces a “mystery,” followed by discussion questions and a hands-on activity (using supplies that are easy to get, like plastic cups and straws) to explore the concepts that will help them solve the mystery.

Similar: [Microsoft Hacking STEM](#)



NASA's Eyes

eyes.nasa.gov

This software gives users detailed, simulated views of things in the solar system: spacecraft, planets, and other phenomena. These simulations are built on real data from NASA’s Jet Propulsion Laboratory. Teachers interested in going more in-depth on space-related lessons should also check out the Jet Propulsion Laboratory’s [education](#) page.

O-Ph

A | B-E | G-H | L-N | O-Ph | Pt-S | V-Z

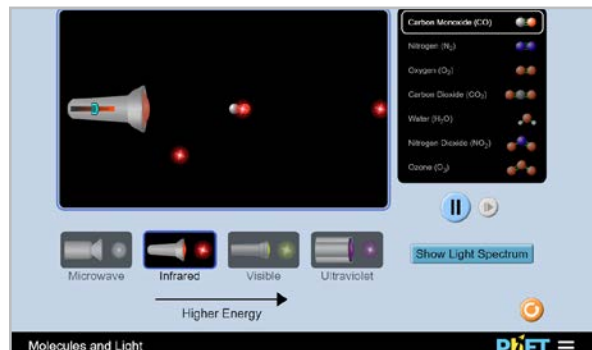


OpenSciEd

opensci.ed.org

This is a fantastic science site that provides free, locally adaptable units of study. In storyline fashion, each unit includes an overview, comprehensive plans, videos, and simulations. Units are designed to work for remote or in-person learning and are aligned with NGSS standards.

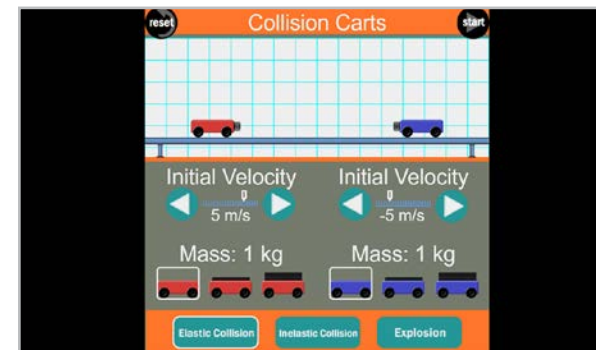
Similar: [TIES](#) resources are specifically designed for teaching evolution.



PhET Simulations

phet.colorado.edu

Hands down, this tool was the one most recommended by science teachers. Run by the University of Colorado at Boulder, PhET offers a huge library of free interactive simulations on science and math concepts. Each simulation allows you to manipulate different conditions — the molecules and light simulation lets you change the light's intensity and the types of molecules that are interacting with the light — and many concepts also come with free lesson plans.



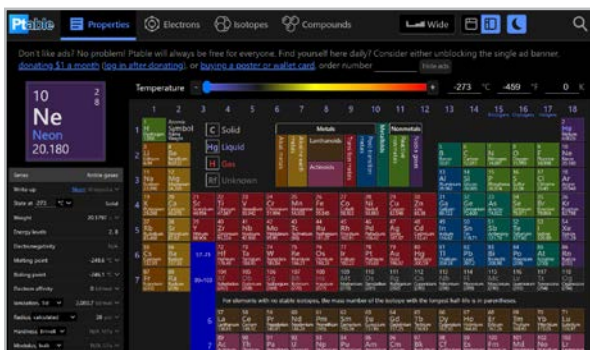
The Physics Classroom

physicsclassroom.com

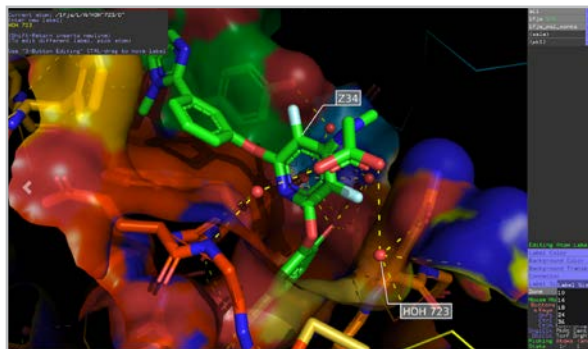
This site's incredibly comprehensive collection of resources gives physics teachers and students just about everything they need to learn basic physics. The tutorial section is written and organized like a good textbook, with written explanations and clear illustrations. Other sections include interactive simulations, concept builders (interactive learning activities on focused topics), and teacher toolkits.

Pt-S

A | B-E | G-H | L-N | O-Ph | Pt-S | V-Z

**Ptable**ptable.com

This interactive, web-based periodic table packs a ton of information in a small space. Click on any of the elements and a window pops up that gives a full description of the element, a photo of it, and other data. By changing the viewing preferences, you can show or hide types of information like weights and electrons, orbitals, isotopes, and compounds.

**PyMOL**pymol.org

Free for educators and students, PyMol is an interactive, open-source tool for visualizing molecules. These 3D images can also be downloaded as images or animations and added to presentations.

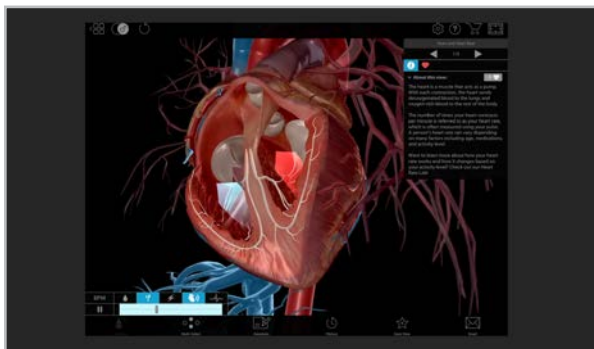
**Star Walk 2**starwalk.space

This app lets you point your smartphone or tablet at the sky and see exactly what constellations are overhead. Move the device, and your map changes accordingly. If you tap on an object, another window opens up with all kinds of information on the item. You can also do a search for a specific constellation and the app will find it for you. Also check out [Solar Walk 2](#) from the same company.

Similar: [Night Sky](#)

V-Z

A | B-E | G-H | L-N | O-Ph | Pt-S | V-Z

**Visible Body**

[visiblebody.com](https://www.visiblebody.com)

Created and constantly refined by a team of biomedical visualization experts, this suite of 3D models, animations, and illustrations gives users a stunning, up-close look inside the human body. The site also offers courseware, flashcards, and courses users can customize for their own use. A subscription is required to access most materials.

Similar: [Complete Anatomy](#)

**Viziscience**

[viziscience.com](https://www.viziscience.com)

The videos, lab simulations, activities, and interactive lessons on this site — currently available only by paid subscription — are designed to help students master general and advanced chemistry concepts. Teacher accounts give you access to student progress reports.

**Zooniverse**

[zooniverse.org](https://www.zooniverse.org)

Dubbed “people powered research,” this incredible platform houses a collaborative science community at your fingertips. It’s like crowdsourcing meets scientific research, where anyone can participate in furthering scientific discoveries. There are dozens of projects happening at any time that a student can join.



Social & Emotional Learning

Over the past few years, there has been a renewed focus on the importance of social and emotional learning (SEL), especially within the context of the global pandemic, which has [exacerbated an already intense need](#) for mental health support in students.

The [Collaborative for Academic, Social, and Emotional Learning](#). (CASEL, pronounced “castle”) has developed a framework that defines five core competencies of SEL: self-

awareness, self-management, social awareness, relationship skills, and responsible decision-making. Most SEL platforms, like the tools in this section, build their materials from all or part of this [framework](#). On these platforms, you’ll find activities, lesson plans, simulations, and real-world challenges that allow students to develop all five competencies in a safe, supervised environment.

Some tools in other parts of this guide also include SEL components:

- [Pear Deck](#) and [Nearpod](#) (in Presentation)
- [Classcraft](#) (in Classroom Management)
- [Bunceee](#) (in Interactive Posters)

One last thing to keep in mind: Nurturing students’ social and emotional development doesn’t have to come from a packaged curriculum, and it doesn’t have to happen separately from regular instruction. In this [insightful article](#), educator Wendy Turner shares how she integrates the five competencies into her classroom culture organically.

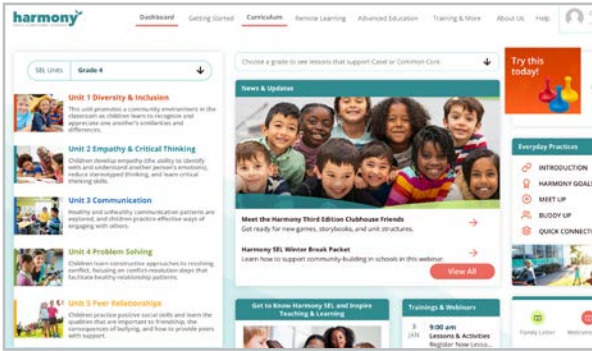
WHAT ABOUT THE BIGGER PROGRAMS?

This section focuses primarily on tools that individual teachers can use or try on their own, without having to adopt a larger school-wide program like the [RULER](#) approach or [Responsive Classroom](#). To more thoroughly research all options, spend some time on CASEL’s searchable [Program Guide](#).

INVESTMENT IN SEL

SEL programs can be costly, and many districts use ESSR funds, grants, or other specially available funding sources to purchase them. Comprehensive, meaningful, and engaging tools are much more readily available these days, even if they must be purchased. If schools and districts can dedicate the funds, the investment can be a powerful one.

Along | Better World Ed | Brighten Learning | Harmony SEL | Second Step | Sown to Grow | ThinkGive



Harmony SEL
harmonysel.org

Designed for grades pre-K-6, Harmony SEL is a free, comprehensive curriculum focused on valuing ourselves and each other, communication, supporting our community, and learning from each other. All lessons include accompanying printables and family communication tools. The site also offers videos, games, and other supplementary material, plus a variety of teacher PD options.



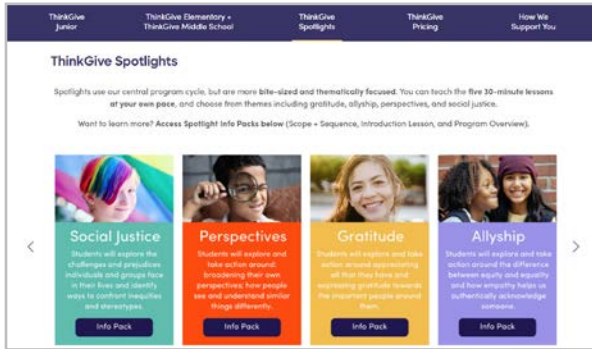
Second Step
secondstep.org

This site offers a full SEL curriculum for [elementary](#) and [middle school](#) plus a collection of [free resources](#) for pre-K-8 educators, schools, and families. The curriculum is offered in both in-person and digital formats and includes support materials for families as well. [Adult SEL](#) resources are also included that schools can use staff-wide.



Sown to Grow
sowntogrow.com

Designed to help students build perseverance, self-awareness, self-regulation, and self-efficacy, this platform has students set their own goals, then do regular check-ins to reflect on how they did, noting which strategies helped the most. Over time, students review the results of multiple cycles to see their growth and determine which strategies worked best.



ThinkGive
thinkgiveproject.org

This innovative SEL program for grades 4-8 works on a cycle of think-give-reflect-share, where students start by learning about a topic, then consider how they can give an act of kindness to another person. All the lesson plans are designed to integrate into current school curricula with a 12- or 16-week option and can work alongside more comprehensive SEL programs.

10

TED TALKS TEACHERS SHOULD WATCH

There are thousands of thought-provoking [TED Talks](#) online, but which ones are especially good for teachers? We asked this question on Twitter and although there were a few snarky replies (some teachers are *really tired* of TED Talks!), we also got [many excellent suggestions](#). We couldn't include them all here, but this list has some well-loved "classics" and a few you may not have heard of.

1. [3 Ways to Speak English](#)
Jamila Lyiscott
2. [Math Class Needs a Makeover](#)
Dan Meyer
3. [How Childhood Trauma Affects Health Across a Lifetime](#)
Nadine Burke Harris
4. [The Power of Believing That You Can Improve](#)
Carol Dweck
5. [The Puzzle of Motivation](#)
Dan Pink
6. [I'm Not Your Inspiration, Thank You Very Much](#)
Stella Young
7. [How Students of Color Confront Impostor Syndrome](#)
Dena Simmons
8. [Do Schools Kill Creativity?](#)
Sir Ken Robinson
9. [The Danger of a Single Story](#)
Chimamanda Ngozi Adichie
10. [Every Kid Needs a Champion](#)
Rita Pierson



Social Justice & Anti-Racism

Discrimination, racism, and other forms of injustice are nothing new, and organizations have always been around to fight them. But the killing of George Floyd in May 2020 raised public awareness to a critical mass, [igniting protests](#) all over the world and sending many more people, educators included, in search of materials and tools to educate themselves and actively work to fight injustice everywhere. Many others responded to the call by launching new websites, YouTube channels, webinars, and courses that served to complement the good resources that were already out there.

In October 2020, we [put out a request](#) for resources to build this category and got hundreds of replies. To keep the size of this section manageable and focused on education, we were not able to include all of them, but if you want more than we have featured here, those replies are still available for browsing.

Many of the listings in this section focus primarily on race, but others focus on disability awareness, LGBTQ-related topics, and religious discrimination.

TEACH WITH CARE

It's important to note that many of the materials in this section can cause strong emotions to arise in your classroom. This statement from [Teaching Beyond September 11th](#) offers important insights about how to best approach lessons like these:

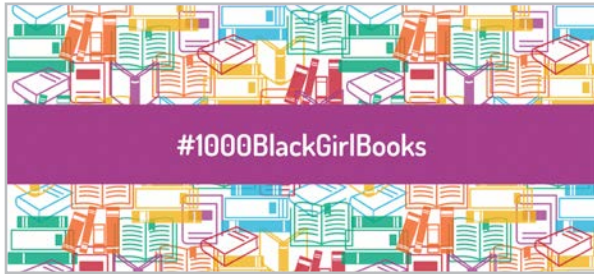
“A number of the topics that this curriculum covers may be emotionally demanding for students. Some lessons will challenge students’ worldviews, while others might cause discomfort, especially for students from impacted communities. As educators, we

believe that some of the best learning happens outside of one’s comfort zone; that being said, it is imperative for educators to approach these topics with sensitivity so as not to reinforce stereotypes or create tensions within groups of students or foster disinformation. Understanding who the students in your class are and the context of their lives will help prevent misunderstandings and better inform learning.”

To browse all materials on Cult of Pedagogy related to social justice, [click here](#).

THE BACKLASH AGAINST CRITICAL RACE THEORY

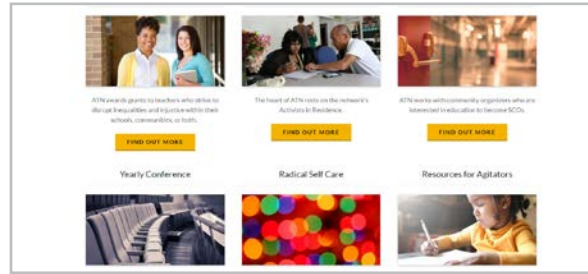
Teaching with the materials in this section will likely be met with resistance from some parents and community members. We discuss this more in the [History & Social Studies](#) section, and in the article [Teachers are being silenced. What can be done about it?](#)



#1000BlackGirlBooks

marleydias.com/1000blackgirlbooks

This growing database of books was built in response to student Marley Dias’ desire to read more books where Black girls are the main characters.



Abolitionist Teaching Network

abolitionistteachingnetwork.org

The ATN supports educators who fight injustice with grants and residencies, readings, videos, a podcast, an annual conference, and networking opportunities with other activists.



All4Ed

all4ed.org

This organization directly advocates for policies that will ensure high-quality education for marginalized students. Site visitors can take action by supporting these initiatives.



Americans Who Tell the Truth

americanswhotellthetruth.org

This site features portraits and narratives honoring citizens who courageously address issues of social, environmental, and economic fairness. Teaching resources are also included.



Anti-Racism Daily

the-ard.com

This site sends you one email a day with a specific anti-racist action you can take, plus detailed background information. The ARD now has a podcast and a YouTube channel.



Anti-Racist Art Teachers

antiracistartteachers.org

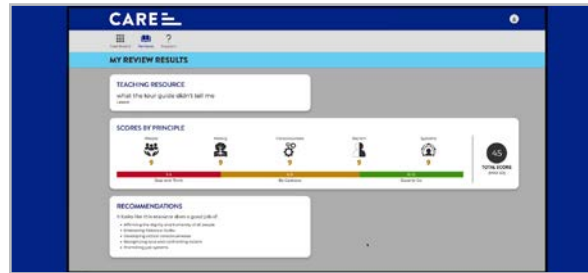
This gorgeous site, run by seven art teachers, offers resources to help art teachers “remove biases, stereotypes, and false narratives in art education.”





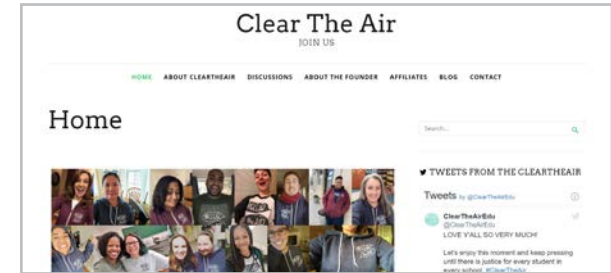
Black Lives Matter at School
blacklivesmatteratschool.com

This national coalition provides resources and support for educators, students, parents, and community organizations working for racial justice in education.



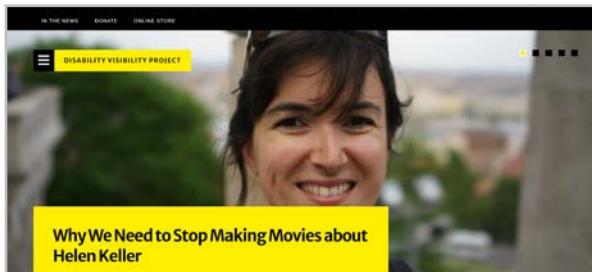
Center for Antiracist Education
antiracistfuture.org

Although this organization no longer offers professional learning, their resources for educators working toward anti-racist schools are still available online.



Clear the Air
cleartheaireducation.wordpress.com

They haven't been active recently, but these Twitter chats that give educators a space for conversations about social justice are still an interesting read.



Disability Visibility Project
disabilityvisibilityproject.com

This online community is dedicated to creating, sharing, and amplifying disability media and culture.



Diverse BookFinder
diversebookfinder.org

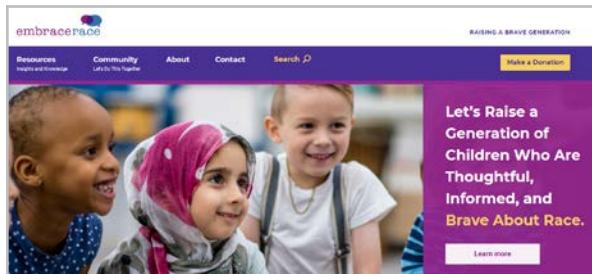
This site catalogs picture books with BIPOC characters, including an analysis of how each is portrayed and larger analyses of patterns and recurring themes.



Education Amplifier
amplifier.org/education

This site provides free artwork, lesson plans, and teaching tools that help facilitate non-partisan conversations around social justice in K-12 classrooms.





EmbraceRace

embracerace.org

This site offers resources, discussion spaces, and networks to meet the challenges of raising children in a world where race matters.



Family Diversity Projects

familydiversityprojects.org

The photo exhibits hosted by this organization aim to eliminate prejudice, stereotyping, bullying, and harassment by sharing real stories of diverse families.



GLSEN

glsen.org

This national network of educators and students works to ensure that every student has a safe, supportive, LGBTQ-inclusive K-12 education.



Leading Equity Center

leadingequitycenter.com

This center provides webinars, consulting, and a podcast all geared toward supporting educators with the tools and resources needed to ensure equity in their schools.



APPS FOR ACTIVISTS

Organizing social movements is time-consuming, often dangerous work, and technology can help. [This list of apps](#) for movement-building includes encrypted communication platforms, safety apps, and voter mobilization tools.

WHO NEEDS ANTI-RACIST EDUCATION?

Although this sentiment comes up less often than it used to, some educators who teach in mostly white schools believe their students don't need anti-racist or social justice education. Nothing could be further from the truth. For an exploration of this topic, read Sheldon Eakins' article, [Why White Students Need Multicultural and Social Justice Education](#).

GET THEIR NAMES RIGHT

Pronouncing students' names correctly is an important piece of respectful, culturally responsive teaching. [NameCoach](#) is a tool that can help you do this with ease.



Learning for Justice
learningforjustice.org

Formerly Teaching Tolerance, this site offers robust teaching materials built around the organization's powerful [social justice standards](#).



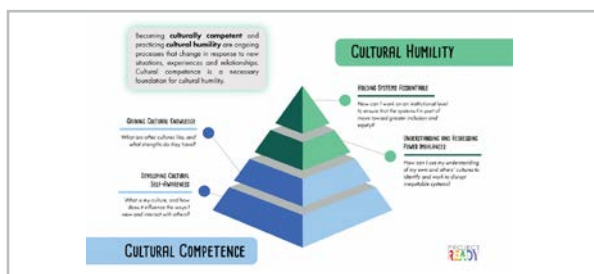
Native Knowledge 360°
americanindian.si.edu/nk360

Created by the Smithsonian's National Museum of the American Indian, this site offers resources that provide new perspectives on Native American history and culture.



A Pathway to Equitable Math Instruction
equitablemath.org

On this site you'll find resources to support equitable access to math standards for Black, Latinx, and multilingual students in grades 6-8.



Project READY
ready.web.unc.edu

This professional development curriculum is for school librarians and other educators focused on racial equity and culturally sustaining pedagogy.



The Race Card Project
theracecardproject.com

Former NPR host Michele Norris started this project in 2010 to collect people's short narratives of their experiences with race.



Rethinking Schools
rethinkingschools.org

This organization explores social justice topics through its quarterly magazine, books, and the [Zinn Education Project](#).





Small Bites
anchor.fm/hedreich

Educator Hedreich Nichols' podcast and [YouTube series](#) shares equity strategies that can be done in small chunks of time.



Talking About Race
nmaahc.si.edu/learn/talking-about-race

This is a collection of resources for having conversations about anti-racism, systems of oppression, and other topics for educators, parents, and others committed to equity.



Social Justice Books
socialjusticebooks.org

This project, from [Teaching for Change](#), identifies and promotes the best multicultural and social justice children's books and other resources for teachers.



Teaching Beyond September 11th
gse.upenn.edu/academics/research/september-11-curriculum

High school and college curriculum examining the ongoing global impact of 9/11 through critical inquiry and a social justice lens.



So*Just
sojust.net

So*Just houses a big collection of historic speeches, songs, poetry, letters, and other documents on human rights and social justice.



Teaching While White
teachingwhilewhite.org

This blog, podcast, and workshops are focused on conversations about anti-racism in teaching, understanding whiteness, and challenging and eliminating racism in education.



Uncomfortable Conversations with a Black Man

youtube.com/c/Acho

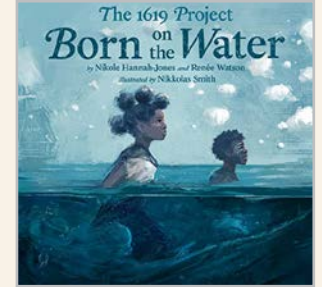
Emmanuel Acho talks through the questions “curious white people” have always had but were too nervous to ask.



We Need Diverse Books

diversebooks.org

This organization works to put more books featuring diverse characters into the hands of all children through grants, awards, anthologies, and other programs.



DON'T MISS THE 1619 PROJECT

The [1619 Project](#), featured in the history and social studies section, started as a web-only project, but has since expanded its reach with two published books and a robust [website](#) of teaching resources via the Pulitzer Center Education Program. [The 1619 Project: A New Origin Story](#), is a full-length book and [The 1619 Project: Born on the Water](#) is a picture book.



Woke Kindergarten

youtube.com/c/Wokekindergarten

This channel offers equity-minded read-alouds and other videos for primary students. Newer content is available on [Patreon](#).

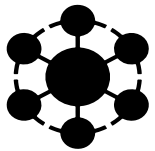


Your Black Friends Are Busy

yourblackfriendsarebusy.com

This app curates resources for educating yourself about race: books, articles, videos, podcasts, places to donate, and action items.





Social Media

Although it's hard to find a person without some kind of social media account these days, let's review the basics, just in case. Most social media platforms work this way: A person (or group) sets up an account. They create a profile on that account, which is just a page online with a picture and a few facts about that person in his or her own words. Then that person posts life updates, photos, comments on current events, etc. When other people follow that person, they see that person's updates in their own feed, a running stream of updates from all the people they follow.

Social media has lots of uses for educators:

- **For your own professional development.** By connecting with other educators on social media, you'll learn about research, news, and trends in education.
- **To communicate with families and students.** Teachers, clubs, teams, and whole schools can update stakeholders through social media streams.
- **To make relevant curricular connections.** Any time you can connect your content to social media concepts, you're helping students learn it better.
- **To help students make smart choices.** As trusted adults, we can help students navigate social media in safe, smart ways. Knowing the tools helps us do a better job.

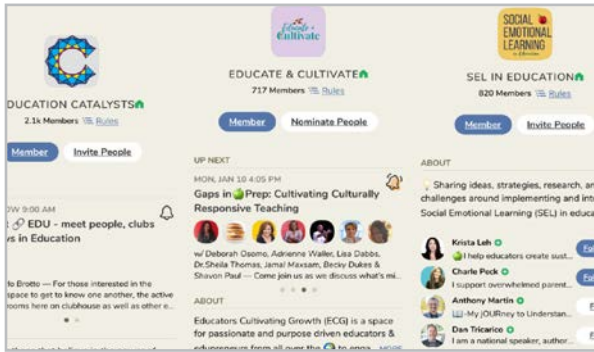
None of the sites listed here were designed specifically for schools, so they may not be good candidates for classroom use. Learn more about the laws surrounding student data, safety, and privacy in the [Know Your Legal Stuff](#) section of this guide.

HELPING STUDENTS BE SMART ABOUT SOCIAL

We all want our kids to be safe and smart online, but with social media changing so rapidly, it's hard to know where to even start helping them. Many of the resources in our [Digital Literacy](#) section address social media-related topics like online identity, safety, and media balance and well-being.

ALTERNATIVE PLATFORMS PROMISING FREE SPEECH

Over the past few years, some new social media platforms have emerged in reaction to the content moderation happening on the more established platforms. Two prominent ones are [Parler](#) and [Truth Social](#), who both promise much more freedom of speech. [This 2022 study](#) by the Pew Research Center analyzed the content and success of seven of these sites.



Clubhouse
[clubhouse.com](https://www.clubhouse.com)

New to the scene, Clubhouse is a “social audio” app that brings people from across the globe together to discuss topics they have in common. An interactive podcast-type experience allows users to create rooms and invite people on stage to discuss their chosen topic. A robust [educational community](#) holds daily discussion rooms on a variety of topics, many created and hosted by other educators via education-related clubs.

Similar: [Twitter Spaces](#)



Discord
discord.com

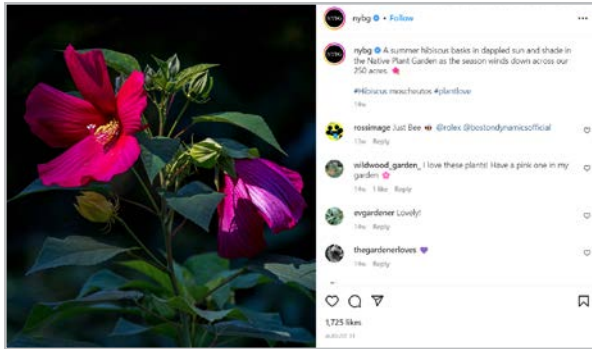
With a layout very similar to [Slack](#), Discord was originally created to give gamers a place to chat, but its use has started to expand to include other communities, some that are connected to academics. Users meet inside communities called Servers, where they can use text, voice, video, and screen sharing to chat.



Facebook
[facebook.com](https://www.facebook.com)

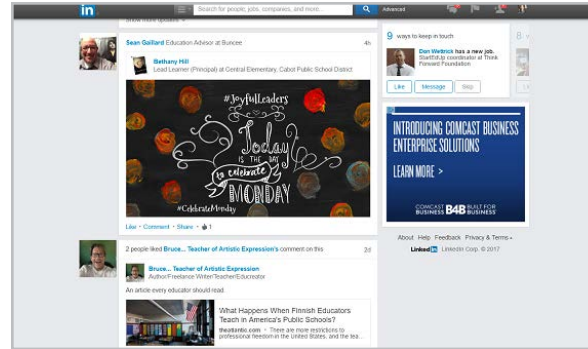
One of the first social media platforms, Facebook is a website where people mostly go to interact with friends and family. Users can also form and join groups based on common interests, schedule and invite others to events, even list items for sale. Businesses typically have a Facebook page that users can follow where they will also post news, links, and updates.

Similar: [Twiducate](#) is a safe social media platform designed specifically for use by students, with teacher supervision.



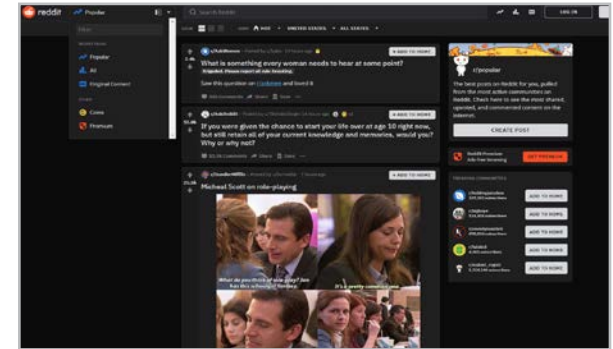
Instagram
[instagram.com](https://www.instagram.com)

On this platform that is still very popular with teens, users post photos or videos with written captions, and their followers comment on them. Users can also post live stream videos, photo galleries, or “Stories,” collections of photos and videos that play like a little movie, or **Reels**, which are short-form videos. You can also use the app to send direct messages.



LinkedIn
[linkedin.com](https://www.linkedin.com)

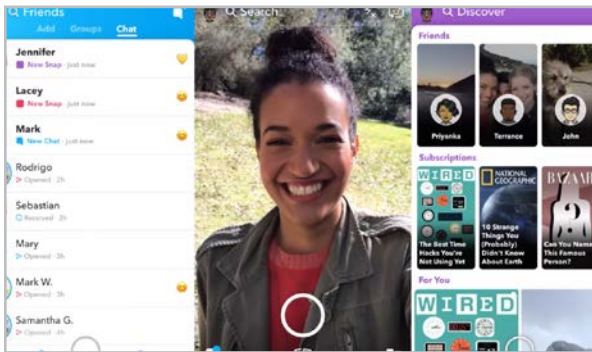
The main difference between LinkedIn and other social media platforms is that its focus is on professional networking. It’s social, in a way, but with a career-building flavor. Some unique features are a jobs board, where jobs that match your skills are posted, and an online learning platform called **LinkedIn Learning**, where users pay a monthly subscription fee for unlimited access to hundreds of online, career-building courses.



Reddit
[reddit.com](https://www.reddit.com)

Reddit is a massive discussion forum: Users post links, comments, or questions, and other users can comment on a post and vote it up or down, which gives the post a score and ranks it; the highest-ranked posts appear at the top of the page. Posts can be submitted to the general feed or to a **subreddit**, a smaller community focused on a specific topic. For more information, read **Reddit 101**.

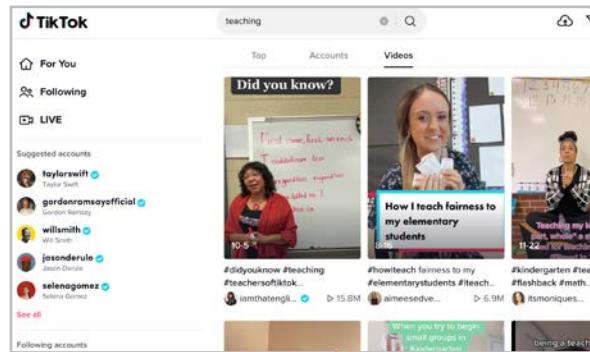
Similar: [Quora](https://www.quora.com)



Snapchat
[snapchat.com](https://www.snapchat.com)

At first, Snapchat was known as an app that allowed users to send content that would disappear seconds after it was viewed. This gave it a reputation as a sexting or cyberbullying platform. While the messages can still be set to disappear, Snapchat now **gives users more control** over how long messages last, plus other options that make it one of the **most popular** communication platforms for teenagers.

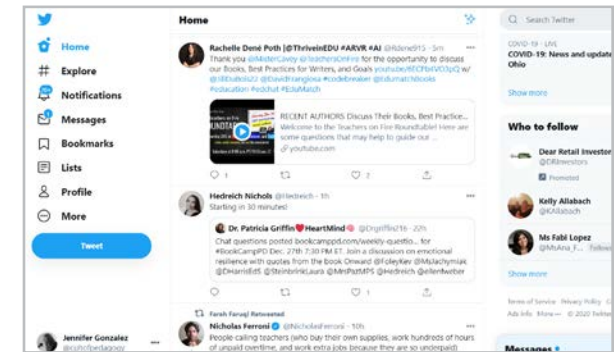
Similar: [BeReal](https://www.be-real.com)



TikTok
[tiktok.com](https://www.tiktok.com)

While TikTok may have started as an app for teens (and for that reason alone, it's good to be familiar with it), the concept of micro-teaching has launched it into the world of education. While the privacy settings can be intimidating, videos can be created on TikTok and shared via other, more secure platforms for students. The short length of videos make them ideal for single concepts, points, and mini-lessons that can engage and capture attention in a way only social media can do. [Learn more here.](#)

Similar: [Zigazoo](https://www.zigazoo.com) works similarly to TikTok, but it has a more educational focus and is COPPA certified. Learn more in [this video.](#)



Twitter
[twitter.com](https://www.twitter.com)

Although [Twitter has had a chaotic year](#) and its fate is still unknown, at the time of this printing, it was still alive. Twitter users send out tweets, posts limited to no more than 280 characters. In their tweets, users might also include a *hashtag*, a word or phrase with the hash (#) symbol, which makes their tweet more searchable. Hashtags are also used for Twitter chats, which is a way for people to “meet” on the platform. Lots of these chats are set up just for educators. To learn more, see [So You Have a Twitter Account. Now What?](#)



Speaking & Discussion

More technology means more time on our devices, and unfortunately, that means we are talking to each other less. But in a post-COVID world, we recognize more than ever how important it is to be able to connect, even if we have to do it over devices. The tools in this section help us make those connections.

- Sites like the **Better Arguments Project** aim to improve the quality of our arguments through training and curricular resources.
- Voice and video messaging tools like **Voxer**, **Flip**, and **Glide** allow for asynchronous conversations at any time.

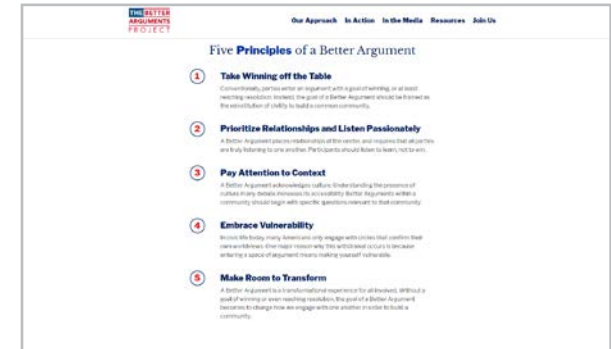
- Discussion monitors like **Equity Maps** show us who is participating, and how often.
- Discussion starters like **Kialo**, **Parlay**, and **StartSOLE** provide topics and structures to support deep discussion.
- A speaking assignment app like **Extempore** enables teachers to assess students' speaking skills away from the classroom.
- Video commentary sites like **VideoAnt** allow users to use video as a discussion starter.

CLASS DISCUSSION FORMATS

Maybe you love the *idea* of having class discussions, but you're in a rut. Check out [The Big List of Class Discussion Strategies](#), where you'll find tons of different ways to have a class discussion.

STUDENT TED TALKS

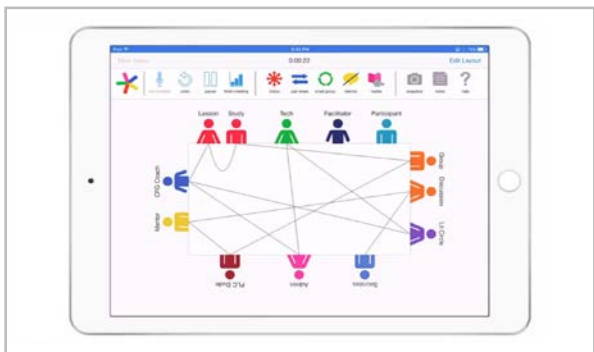
TED-Ed's [Student Talks](#) Program helps students develop their own TED-style talks.



The Better Arguments Project
betterarguments.org

This national civic initiative was created to help bridge divides by helping people have better arguments. Their [virtual trainings](#) and school [curriculum](#) teach participants five key principles for having respectful, productive conversations about challenging topics.

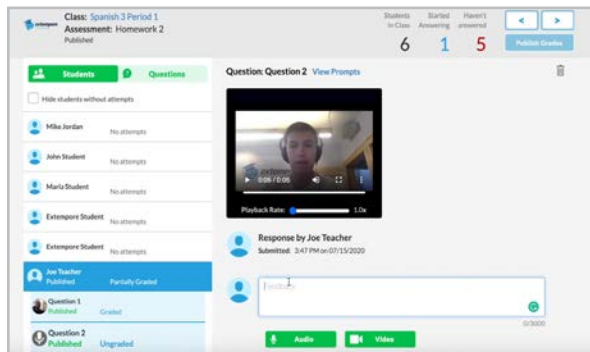
The Better Arguments Project | Equity Maps | Extempore | Flip | Glide | Kialo | Parlay | StartSOLE | VideoAnt | Voxer



Equity Maps
equitymaps.com

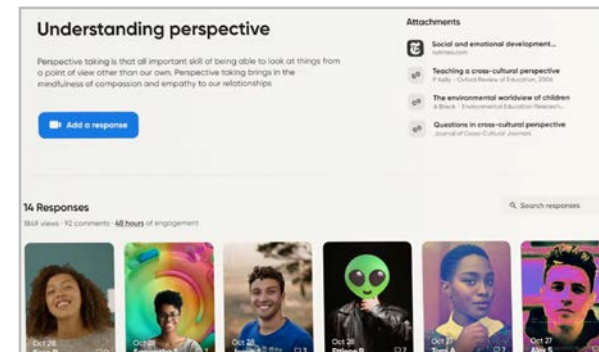
This iPad app gives teachers a way to quickly record student participation in a discussion. Using a seating chart, you tap icons as each student talks. Equity Maps keeps track of how long each student talks. After the discussion you get a summary of how often each student participated, how many were active, and whether there was equitable distribution based on identity markers such as gender, age, language level, and race.

Similar: [EQUIP](#), [TeachFX](#)



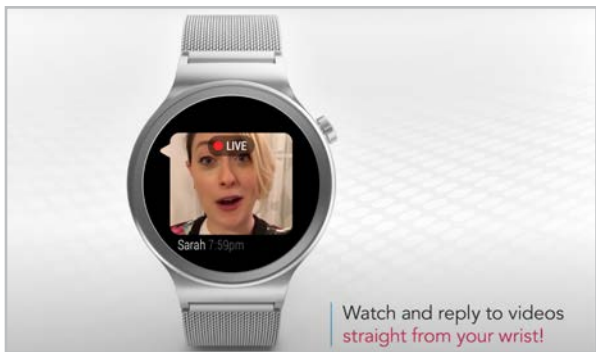
Extempore
extemporeapp.com

This simple app was built for speaking assignments, allowing students to turn in audio or video recordings in response to teacher prompts. Prompts can be in text, audio, or video form. For each assignment, the teacher can create a rubric, set time limits, and decide whether to let students review or re-record their responses. Feedback and grades can be given right in the app.



Flip
flip.com

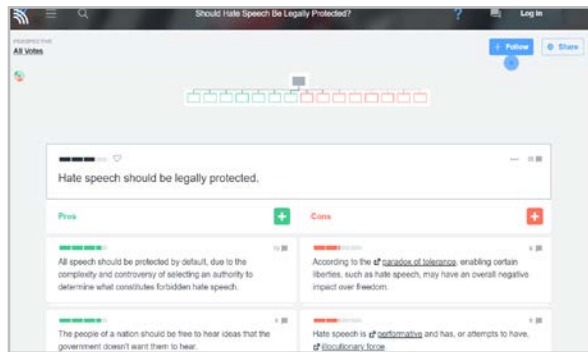
Formerly known as Flipgrid, this video response app has all kinds of possibilities for discussion and speaking activities. Start by setting up a Topic — a discussion prompt that can be public or limited to a classroom, a school, or a district. From their own devices, students then go into Flip and record video responses, which are then added to that Topic for others to view.



Glide
glide.me

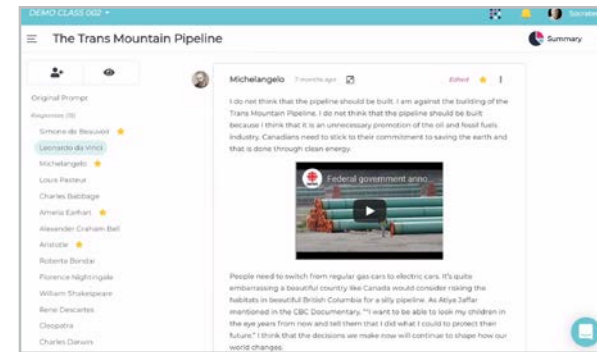
An incredibly fast live video messenger, Glide combines texting with the expressiveness of video chat. This is one reason why it is heavily utilized by the deaf and hard of hearing communities. It is designed to be used seamlessly between iOS and Android devices. One very unique aspect is that Glide has developed an app for Android smartwatches.

Similar: [Marco Polo](#), [Volley](#)



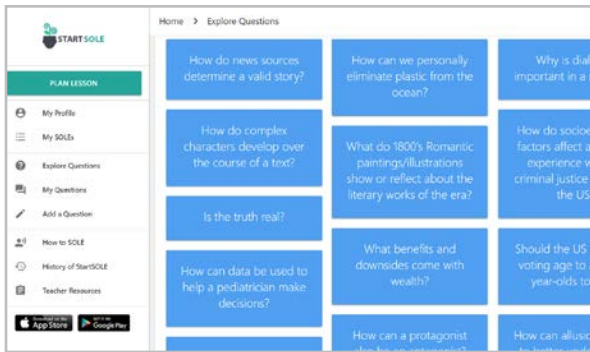
Kialo
kialo-edu.com

On this platform, users participate in debates that start with a thesis like “All humans should be vegan.” Once a thesis is set up, invited participants offer claims — arguments for the Pro or Con side, then other users can comment on a claim or add their own. Every claim can be rated by users for its impact; those with the highest ratings rise to the top. The edu version (linked above) allows for private debates.



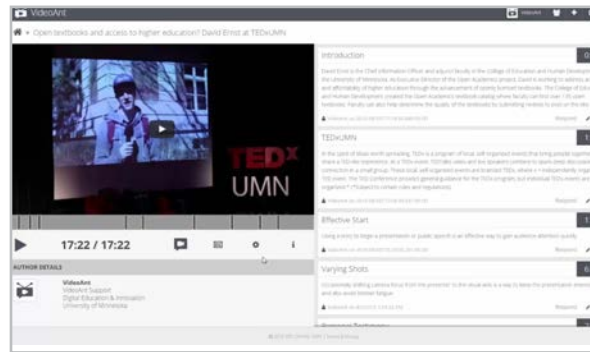
Parlay
parlayideas.com

This platform offers a suite of tools for conducting class discussions. Start by choosing a topic from their library: These contain readings and videos to give background information. Then students submit written responses and respond to one another in writing. Finally, the class can conduct a live roundtable discussion, using Parlay to track and facilitate their participation. When the discussion is over, the teacher gets a report to see who participated and how.



StartSOLE
startsole.org

This platform offers organizational tools to help teachers facilitate SOLEs, which are self-organized learning environments. A SOLE starts with a question like, “Do genetics cause a person to be good or bad?” In small groups students discuss the question, then move to the investigation phase, where they research answers. Finally, each group presents their discoveries to the class.



VideoAnt
ant.umn.edu

A free tool created by the Digital Education and Innovation team in the College of Education and Human Development at the University of Minnesota, VideoAnt allows for annotation of videos. Users can annotate any video with a URL or on YouTube, providing the link to participants to add their notes for discussion.

Similar: [Timeliness](#)



Voxer
voxer.com

Voxer is like a message board, except it’s all voice recordings. This is great because the voice communicates things you can’t get with words alone. And Voxer is asynchronous: People participate when they can rather than trying to find a time to meet or call. In addition to voice, you can also send texts, videos, links, and images over Voxer, so it’s good for all kinds of communication.

Similar: [Telegram](#), [VoiceThread](#), [WhatsApp](#), [Zello](#)

Bookshare | Brain Power | Creatability | First Then Visual Schedule | Helperbird | Immersive Reader | Learning Ally | LessonPix | Livescribe Pen | Microsoft Lens
NaturalReader | Postlight Reader | Read&Write for Chrome | Reading Difficulty Power Tools | Rewordify | Tar Heel Reader | Understood | Web Captioner



Special Ed/ UDL

Technology has made it a lot easier to deliver instruction in ways that work for every student. That's why the title of this section goes beyond the narrower label of "special ed" to include the term UDL, which stands for Universal Design for Learning. UDL is the practice of designing materials to give students choice and voice in how to access, engage, and show what they know. For an excellent overview of UDL, including an exploration of how it is an essential key for offering a more equitable education to all students, read [this article](#) from Katie Novak.

This section offers a sampling of the many tools that can help students with special needs and their teachers:

Accessibility tools make up the bulk of this collection: Helperbird, Immersive Reader, LessonPix, Livescribe Pen, Microsoft Lens, NaturalReader, Postlight Reader, Read&Write for Chrome, Rewordify, and Web Captioner all make resources more accessible. Reading Difficulty Power Tools gives teachers insights about the difficulty of a piece of text. And the wearable glasses from Brain Power help students with autism navigate transitions and better understand social cues.

Libraries of accessible books are offered by sites like Bookshare, Learning Ally, and Tar Heel Reader.

Musical and artistic expression is made more accessible through Creatability.

Executive function is supported through First Then Visual Schedule.

Parent support is provided by the fantastic collection of resources at Understood.

OTHER TOOLS IN THIS GUIDE

Although not specific to special education, these tools offer features that can support students with learning differences:

- Create accessible digital cards with [Boom Learning](#).
- [Equatio](#) allows you to dictate equations aloud, turning them into written expressions.
- [Flip](#) has Immersive Reader, Translate, and captioning available.
- [Google Slides](#) and [PowerPoint](#) both have built-in captioning capabilities.
- [Keyboarding](#) tools have been shown to help students with dyslexia and dysgraphia.
- [Mathshare](#)'s mission is "to help students with special needs learn math in ways that work for them."
- [Nearpod](#) and [Pear Deck](#) both offer Immersive Reader integration for text-to-speech support.

Bookshare | Brain Power | Creatability | First Then Visual Schedule | Helperbird | Immersive Reader | Learning Ally | LessonPix | Livescribe Pen | Microsoft Lens
NaturalReader | Postlight Reader | Read&Write for Chrome | Reading Difficulty Power Tools | Rewordify | Tar Heel Reader | Understood | Web Captioner

ORGANIZATIONS AND WEBSITES THAT SUPPORT SPECIAL EDUCATION

AEM: National Center on Accessible Educational Materials

aem.cast.org

CAST

cast.org

Center on Inclusive Technology & Education Systems (CITES)

cites.cast.org

Educating All Learners Alliance (EALA)

ar.educatingalllearners.org

TIES Center

tiescenter.org

SUPPORTING STUDENTS WITH ADHD

Even though about 10 percent of students today are likely to have ADHD, many teachers feel inadequately prepared to meet their needs. If you are one of these teachers, a good place to start is our 2022 article, [8 Principles for Supporting Students with ADHD](#).

WORKING WITH STUDENTS WHO ARE DEAF OR HARD OF HEARING?

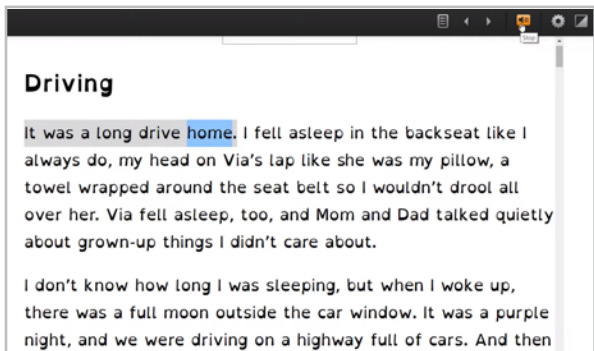
The website [Teach2Connect](#), hosted by the Rochester Institute of Technology, is a hub of resources for those who work with deaf or hard-of-hearing students. The site offers teaching tools, captioning media, teaching advice, and ways to connect with others.



A MORE ACCESSIBLE MUSICAL INSTRUMENT

The [Skoog](#) is a soft, tactile cube designed to give all people, regardless of physical limitations, the ability to make music. Learn more about how it works in [this video](#).

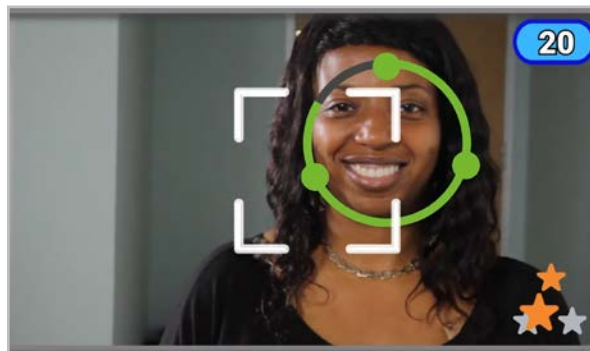
Bookshare | Brain Power | Creatability | First Then Visual Schedule | Helperbird | Immersive Reader | Learning Ally | LessonPix | Livescribe Pen | Microsoft Lens
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Bookshare

bookshare.org

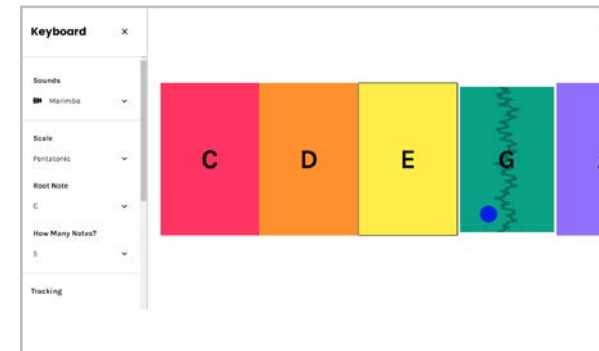
The “largest online library of accessible e-books for people with print disabilities,” this app is free for all qualified U.S. students and schools. With a desktop computer, a laptop, or a mobile device (using a partner reading app), Bookshare allows users to change the font size and color scheme of a text, have the book read out loud with voice options, and navigate through the book with a Table of Contents tab.



Brain Power

brain-power.com

A collection of tools to “empower people with invisible neural differences, and their teachers.” The Empowered Brain app (featured in the photo and video above) works with Google Glass to teach people with autism about social cues and transition management. They also offer [fastIEP](#), a free software that promises to dramatically speed up the process of completing IEPs.



Creatability

experiments.withgoogle.com/collection/creatability

These “experiments” are tools that make drawing, music, and other creative pursuits more accessible using web and AI technology. There’s a keyboard you can play with your face, body, mouse, or keys. A canvas you can draw on by moving your face. A tool called Body Synth that allows you to make music just by moving your body. This appears to be an ongoing project, so more experiments are likely to be on their way.

Bookshare | Brain Power | Creatability | First Then Visual Schedule | Helperbird | Immersive Reader | Learning Ally | LessonPix | Livescribe Pen | Microsoft Lens
 NaturalReader | Postlight Reader | Read&Write for Chrome | Reading Difficulty Power Tools | Rewordify | Tar Heel Reader | Understood | Web Captioner



First Then Visual Schedule

goodkarmaapplications.com/ftvshd-first-then-hd.html

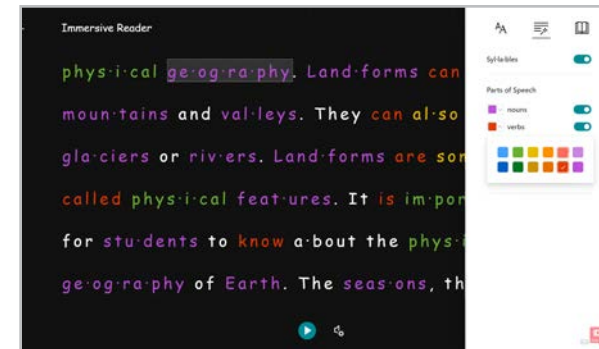
Designed for individuals on the autism spectrum and those with communication needs or developmental delays, this mobile app helps users follow a structured schedule for various tasks throughout the day. Custom images and voice recordings can be added to personalize the experience for users.



Helperbird

helperbird.com

This browser extension helps make any website more accessible. Change the font to something more readable, enable text-to-speech, zoom in to enlarge text or images, emphasize links if color-blindness makes them hard to see, add a color overlay if white backgrounds bother you, remove images, add a dyslexia ruler to improve focus, and more. The free option is great and even more features are available in the paid version.

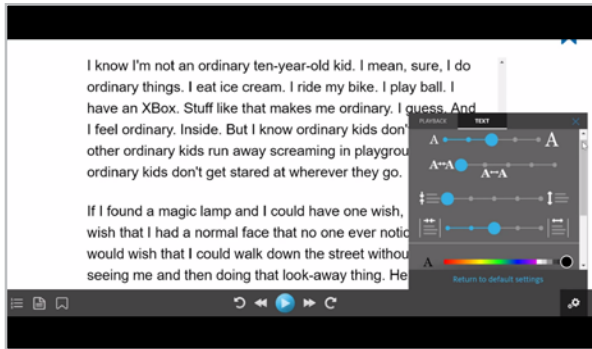


Immersive Reader

onenote.com/learningtools

One of Microsoft's Learning Tools, which are designed to make learning more accessible for all, Immersive Reader provides several different reading tools in one. Applied to an existing piece of text, it reads to you, highlights words and syllables, defines words, and offers different options for spacing and visibility. It works on any website and is integrated into a plethora of products, including Wakelet, Minecraft, Canvas, and many others. An "unofficial" [Chrome extension](#) brings the functionality of Immersive Reader to any website.

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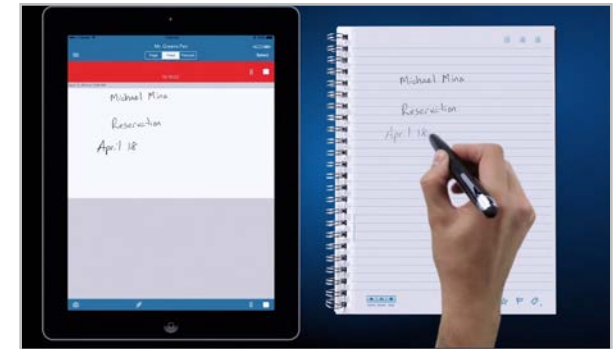
Learning Ally
learningally.org

This app offers a large library of “human-read” audiobooks (as opposed to being read by a computer-generated voice), from fiction to textbooks. Students can add books to their own personal bookshelf inside the app, then read along with the highlighted text while the audiobook plays. Other features include an in-app dictionary, the ability to take notes and create bookmarks, customizable text size and color, and adjustable reading speed.



LessonPix
lessonpix.com

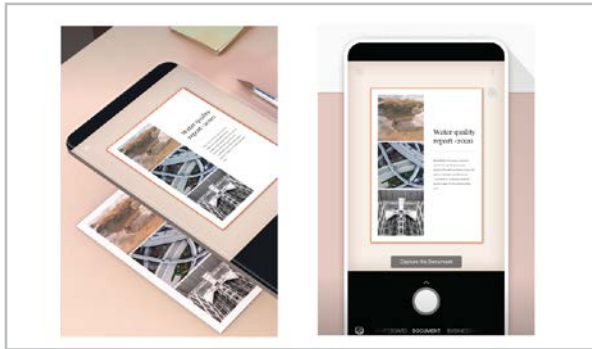
If you need fast, simple visual supports for your teaching, LessonPix would be a good place to start. The subscription-based site houses over 40,000 scalable images, symbols, and other clip art organized into categories, making it easy to find what you need. They also provide templates and tools to help you create your resources, and if you already have an image you want to add, you can do that, too.



Livescribe Pen
livescribe.com

This pen automatically turns handwritten text into searchable digital text. Using the pen in conjunction with the Livescribe+ app, users can sync audio recordings with handwritten notes, so students can listen back to lectures or their own narrations. Livescribe has several different pen models at varying price ranges.

Bookshare | Brain Power | Creatability | First Then Visual Schedule | Helperbird | Immersive Reader | Learning Ally | LessonPix | Livescribe Pen | Microsoft Lens
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Microsoft Lens

[App Store](#) | [Google Play Store](#)

Office Lens lets you scan images, whiteboards, or documents and convert them into PDF, Word, or PowerPoint files. Handwritten text will turn into editable text, and images can be adjusted and cropped. Converted files can be sent to OneNote or OneDrive.

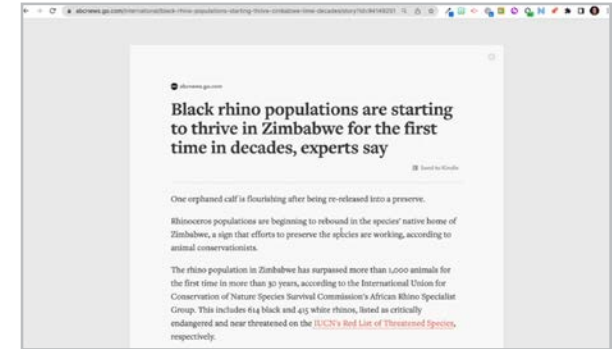
Similar: [Genius Scan](#), [iOS Notes](#)



NaturalReader

naturalreaders.com

This tool will read aloud just about any text you give it: a PDF, Word document, website, e-book, even handwritten text. It is a free software download for Windows or Mac, and it also has a web-based version and a browser bookmark, allowing you to have any web page read to you.

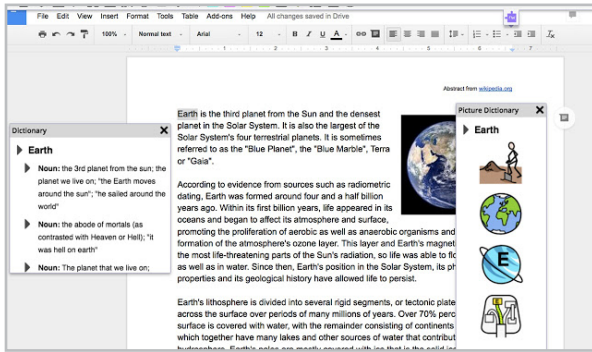


Postlight Reader

reader.postlight.com

Formerly called Mercury Reader, Postlight Reader is a much-needed Google Extension that cleans up cluttered articles online. Using the Google Chrome browser, one click of Postlight Reader removes all the ads and extraneous information, while keeping any images included in the article. Additionally, the now-clutter-free article can be saved or printed for easy reading.

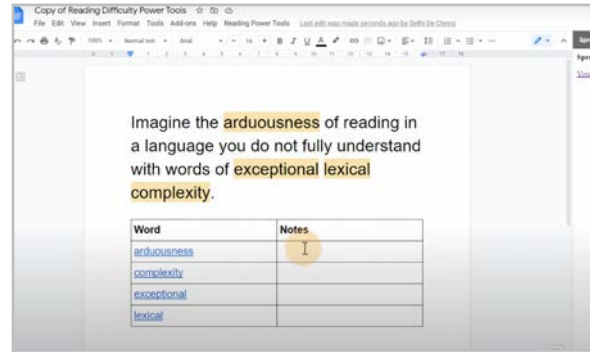
Bookshare | Brain Power | Creatability | First Then Visual Schedule | Helperbird | Immersive Reader | Learning Ally | LessonPix | Livescribe Pen | Microsoft Lens
 NaturalReader | Postlight Reader | Read&Write for Chrome | Reading Difficulty Power Tools | Rewordify | Tar Heel Reader | Understood | Web Captioner



Read&Write for Chrome

texthelp.com/products/read-and-write-education/for-goo3gle-chrome/

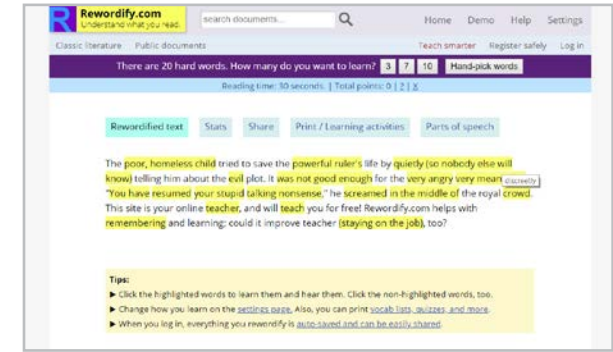
This is a toolbar you add to your Chrome browser, and it has an incredible array of features: highlight any text and hear it read aloud at different speeds, have your speech transcribed into text, find the right word with a word prediction tool, listen to a talking dictionary, view a picture dictionary, and more. If you use Google Apps and want just one tool to improve the accessibility of your materials, this may be the one.



Reading Difficulty Power Tools

sites.google.com/view/rdpt/

This Google extension gives you guidance on reading difficulty when preparing reading materials for English learners or other readers who struggle with challenging material. Running the RDPT extension in Google Docs analyzes the text, providing you with a reading level and a word list with words that are considered challenging, linking each word to a dictionary for the definition.



Rewordify

rewordify.com

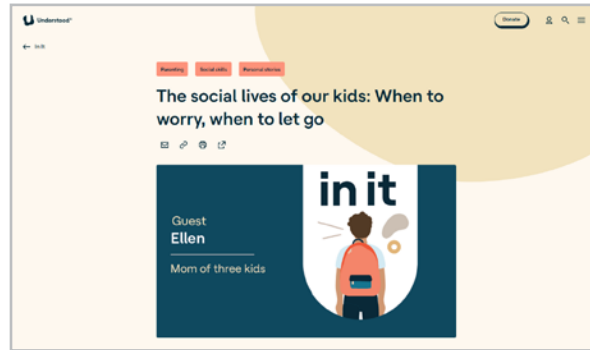
Take any text, enter it into the text box in Rewordify, and it will change the difficult words to words that are easier to understand. You can adjust the settings to either have the challenging words changed right in the text (hovering over them to see the original) or hover over the challenging words to see a simpler definition.

Bookshare | Brain Power | Creatability | First Then Visual Schedule | Helperbird | Immersive Reader | Learning Ally | LessonPix | Livescribe Pen | Microsoft Lens
 NaturalReader | Postlight Reader | Read&Write for Chrome | Reading Difficulty Power Tools | Rewordify | Tar Heel Reader | Understood | Web Captioner



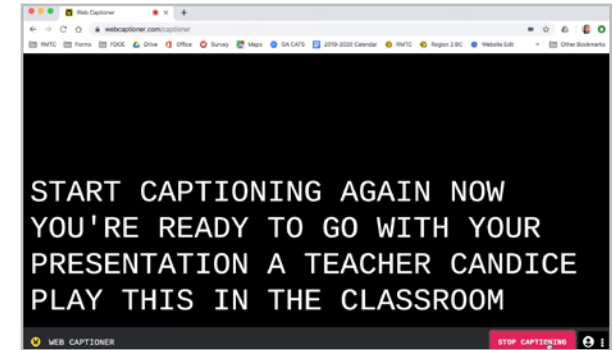
Tar Heel Reader
tarheelreader.org

This site offers a free collection of easy-to-read, accessible books on a wide range of topics. Each book can be speech enabled and accessed with multiple interfaces, including touchscreens. Users can also write their own books on the platform.



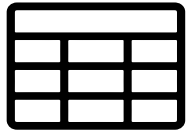
Understood
understood.org

This incredible resource is a must-have for parents of kids with learning and attention differences. Packed with articles, videos, a fantastic collection of [podcasts](#), and an active online community of parents, Understood is a place where parents can go to get answers and support on their journey to help their child reach their full potential. Their new app, [Wunder](#), offers a community of support for parents raising kids with learning and thinking differences.



Web Captioner
webcaptioner.com

This free tool will generate real-time captions in over 40 languages from any browser; just open the site, click “start captioning,” and it works. If you want to connect a larger display, you can generate captions for a live event or while teaching a class to make a lecture more accessible. Once finished, a transcript can be exported to Microsoft Word.



Spreadsheets

Why use spreadsheets in school? Basic reading, writing, and arithmetic are no longer considered sufficient preparation for life beyond school.

Education is moving more toward teaching students how to apply those skills in authentic contexts. So we regularly have them interpret data on charts and graphs and ask them to represent information in visual ways. Both of these skills can be further developed when students learn to use spreadsheets.

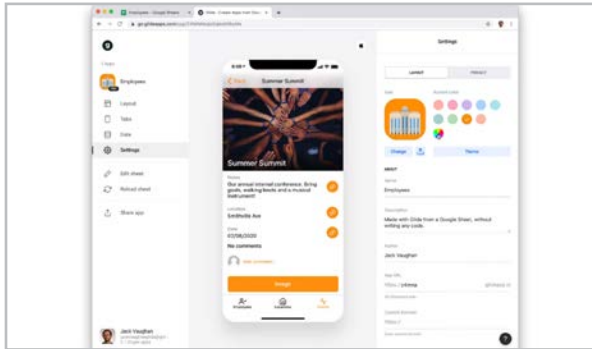
CLASSROOM USES

- Supply students with a spreadsheet that is already filled in. Then use that to show them how to display the data in various charts and graphs (to help them understand data visualization) and manipulate the data to see how the graphs change.
- Use in conjunction with a [survey tool](#), which you could create to collect data, then feed it into a spreadsheet to crunch the numbers and display them in charts and graphs. This could be useful for anything from a social research project (polling students about a controversial issue) or collecting data in a science experiment.
- Track student progress, behavior, money collected for a field trip, lost teeth, or anything else you want to quantify.
- Quickly sort students by name, grade level, birthdate, interests, or any other category you come up with.



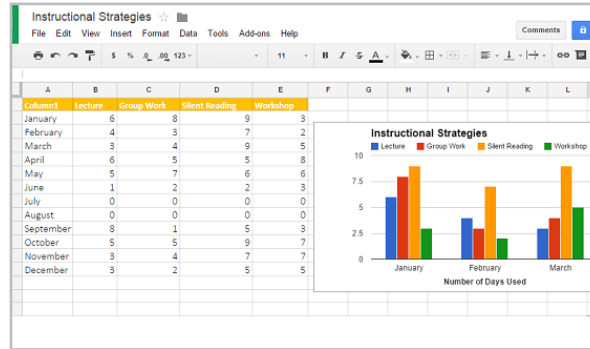
GOING A STEP FURTHER: GOOGLE DATA STUDIO

[Google Data Studio](#) is a free tool that allows you to pull data from a Google Sheet and transform it into beautiful charts, graphs, and reports. Learn more in [this video](#).



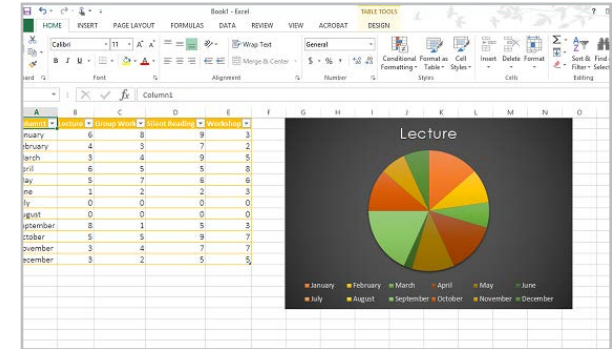
Glide
glideapps.com

Although this tool doesn't make spreadsheets, it allows you to *create apps from spreadsheets*, which would be a fantastic way to introduce students to the kind of logical thinking that goes into the kinds of apps they use every day. Works with Google Sheets.



Google Sheets
google.com/sheets/about

If your school doesn't have Excel, Sheets is a great alternative, offering all the basic features of a spreadsheet tool. Students can collaborate and share their sheets through Google Drive, and if you use [Google Forms](#) to collect any kind of data, that data will transfer right into a new spreadsheet. This would make it easy for students to collect and report on real data for project-based learning or other research projects.



Microsoft Excel
products.office.com/Excel

Excel is widely used in many industries, so having students develop basic skills in this program will not go to waste. Although this program is capable of performing lots of sophisticated tasks, it's also perfectly good at executing simple spreadsheets as well, so beginners should be able to jump right in. For ideas on how to use this tool in your classroom, check out the archives of the [Excel for Educators](#) blog.



Survey Tools

With survey creation tools, you can build your own survey or quiz, send it to respondents (or embed it directly in a website), and collect and analyze responses, all online. These tools crunch the numbers for you, providing summary reports of responses.

TEACHER USES

- Get to know students by giving surveys at the beginning of the year. This is an important step toward building relationships. Once you gather some basic information about students, you can add to the results over the year in a spreadsheet. Learn more about this process in [A 4-Part System for Getting to Know Your Students](#).

- Gather student and parent input on classroom decisions.
- Improve your own teaching by regularly asking students for feedback. [This article](#) offers some suggested questions.
- Administer tests and quizzes.

STUDENT USES

- Conduct original research with a survey, then use the results to support a claim in a persuasive essay or develop a topic in an informational piece.
- Use higher-order thinking skills while creating surveys by determining the best type of questions to meet specific research goals, evaluating questions for ambiguity, and analyzing results.
- Use question branching (where users go to different questions depending on their responses) to write a [Choose Your Own Adventure](#) story with a form.

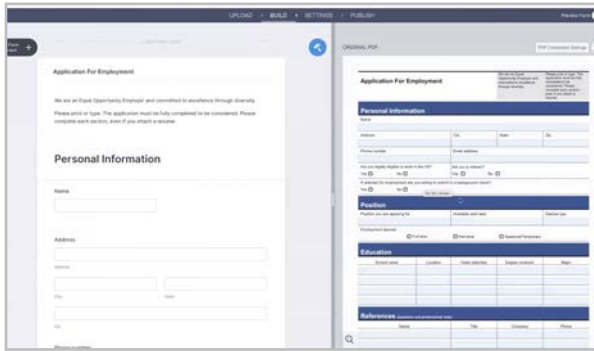


Google Forms

google.com/forms/about

If you're already using the Google Workspace suite of tools, you'll find Google Forms to be a convenient tool for creating surveys. Forms allows users to build surveys with many different types of questions. You can also include photos and YouTube videos in your questions. And teachers can also use Google Forms to create self-scoring quizzes.

Similar: [Microsoft Forms](#)



Jotform
jotform.com

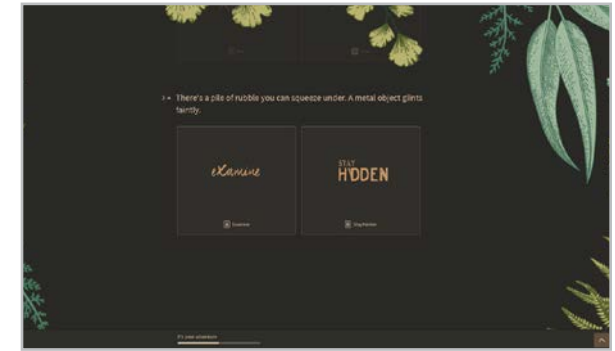
Like many of the other form and survey tools, Jotform offers basic form creation, but they also offer Smart PDF Forms, which allow you to upload a PDF, turn it into a fillable online form, and then save the results in the original PDF format, a feature that could save a ton of time and hassle for anyone whose work involves lots of giving or receiving forms.



SurveyMonkey
surveymonkey.com

Probably the first time you took an online survey, it was a SurveyMonkey survey. This site has been around for ages but has refreshed its look and now offers more options for customization and over a dozen different question types. The free plan allows for unlimited surveys with a limit of 10 questions and 100 responses per survey.

Similar: [Crowdsignal](https://crowdsignal.com)



Typeform
typeform.com

This tool provides the same basic surveys as the others, but users have way more options for how these surveys look and behave, making the response experience a lot more fun. For example, "picture choice" allows you to insert images as answer choices, rather than just A, B, C, or D. With a wide variety of colors and fonts to choose from, users can make their surveys really stand out from what survey respondents are used to.



Teacher Professional Development

It's becoming more widely acknowledged that one-size-fits-all PD is probably the least effective way to help teachers grow. Just like students, every teacher has different needs, and all teachers develop at different rates, so a more personalized approach just makes sense.

The internet is full of resources we can use to customize our professional learning, including courses, blogs, podcasts, and social media. Going beyond those basics, a handful of sites have found fresh ways to provide professional development by leveraging technology.

Video Observation: Swivl offers unique tools to record your teaching, plus a platform for reflecting on the video. Insight ADVANCE and Edthena provide platforms where you can reflect on your teaching videos with colleagues and coaches. And Teaching Channel builds PD around a massive library of professionally recorded videos of teachers in real classrooms.

Community: Fishbowl and Participate give you access to other educators so you can engage in deep discussions with them about your practice.

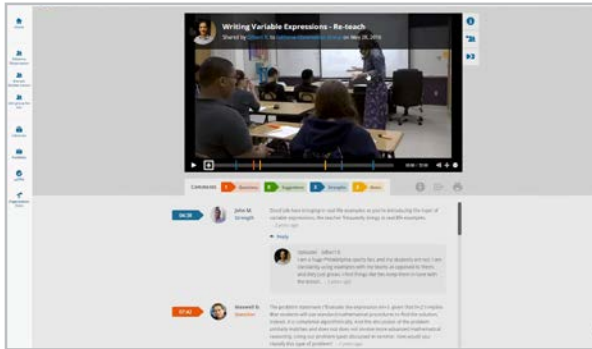
Time Tracking: TeachFX tracks the audio in your classroom to give you a clearer picture of who talks more: you or your students.

NINE FRESH IDEAS FOR PD

Even without special tech tools, schools all over are coming up with some unique approaches to professional development, structures that give teachers more choice and flexibility than traditional formats. To learn about these approaches, read [OMG Becky. PD is Getting So Much Better!](#)

THE LINK BETWEEN PD AND PSYCHOLOGICAL SAFETY

Just like students, teachers learn best when they feel comfortable and emotionally secure, and those who facilitate PD can make that happen. To learn more, listen to our December 2022 interview with Elena Aguilar, [How to Build Psychological Safety in Professional Development.](#)



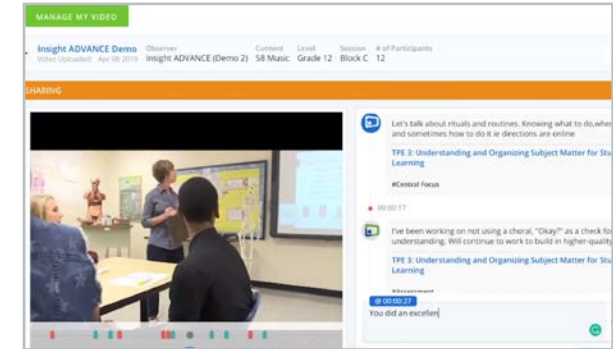
Edthena
edthena.com

Edthena is a collaborative platform for video recording, observation, feedback, and reflection. Teachers record themselves in the classroom, share the recording, and receive valuable insight from fellow teachers and coaches. Professional growth goals can be tracked using indicators and aligned with teaching standards. Although this platform is not free, schools can reach out to Edthena for various purchasing options.



Fishbowl
fishbowlapp.com/lp/teachers

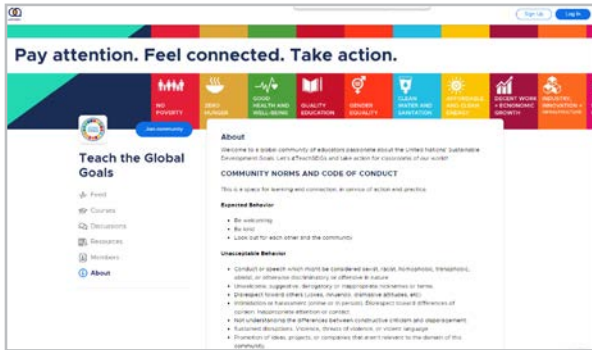
Ever wish you could talk about school-related problems with a wider range of teachers, but you don't want to publicly criticize your school? This discussion platform allows users to post anonymous questions about work-related situations and get answers from others in the community.



Insight ADVANCE
insightadvance.com

This platform was built to support strong, productive instructional coaching. Teachers upload videos of their teaching, then self-reflect on the videos and get feedback from their administrators, coaches, and other teachers. With resources to help teams calibrate and improve the quality of their feedback, this looks like a promising model for professional development that sticks.

Similar: [Sibme](#)



Participate
app.participate.com

On this site, teachers join **Communities of Practice**, collaborative spaces where members gather based on a shared interest, like project-based learning or digital storytelling. Users can also take free and paid online courses through the platform, and paid members can create their own communities.



Swivl
swivl.com

Swivl is both a robot (shown above) and a platform created for video observations. Holding a smartphone or tablet, the robot follows your movement (tracking your handheld remote, which also captures audio) while it films you teaching. When your video is complete, you can view the video inside your Swivl account, where you and your colleagues can make time-stamped notes on your teaching.



TeachFX
teachfx.com

Referring to itself as “a Fitbit for teachers,” TeachFX is a smartphone app that records the audio of your lessons to help you reflect on who is doing the talking in your classroom. After the recording is done and some time passes, the app will give you a written transcript and a page of analytics that breaks down how much class time was spent on teacher talk, individual student talk, group talk, and silence during the lesson.



Teaching Channel

teachingchannel.com

Teaching Channel's strength is in their library of over 1,400 professionally-filmed videos of teachers in practice, categorized by subject area, grade level, and teaching focus (like classroom management). Subscribers get access to the full video library, plus over 20 self-paced mini-courses, built around the videos, on topics like culturally responsive teaching, differentiation, and online teaching.



10

MICRO-CREDENTIALS, CERTIFICATIONS, & DIGITAL BADGES FOR EDUCATORS

Micro-credentials and **certifications** offer a pathway for demonstrating mastery in a focused area of teaching or with a specific tool. These can usually be earned online by completing an on-demand, self-paced course of study, then taking tests and/or submitting artifacts as evidence of learning. Upon completion, most certifications award a **digital badge** that can be displayed in online spaces.

Professional development organizations such as [Digital Promise](#), [Frontline](#), and the [National Education Association](#) offer micro-credentials on a wide range of topics including instructional design, classroom management, diversity and equity, and subject-specific pedagogies. Certifications are also offered by individual tech companies. Here are 10 popular ones:

[Adobe Creative Educator](#)

[Google Certified Educator](#)

[Apple Learning Coach](#)

[Microsoft Educator](#)

[Common Sense Educator](#)

[Nearpod Certified Educator](#)

[Edpuzzle Coach](#)

[Newsela Certified Educator](#)

[Flip Certified Educator](#)

[SMART Certified Educator](#)



Video: Animation & Production

Videos are such powerful tools for communicating ideas, teaching, and sharing our stories, and now there are so many fantastic tools for creating them. In this section, we look at a selection of tools that help us create and edit different types of videos.

STUDENT USES

- Produce videos to document progress on a genius hour project, a service learning activity, or an independent study.
- Create a video in place of a live slideshow presentation to do a book review, research

report, or presentation at the end of a genius hour or project-based learning unit.

- Create a video portfolio, showcasing work in visual art, music, speech or debate, theater, or technology.

TEACHER USES

- Create content-based videos for a flipped lesson, to present content in remote, hybrid, or blended learning, or create a collection of lessons for [self-paced learning](#).
- Make video yearbooks for a class, a grade level, a club, or a whole school.
- Share professional knowledge with colleagues.

HOW TO STORE AND PUBLISH VIDEOS

- Use a [learning management system](#) to store videos that can only be viewed by those with access to that system.
- Create your own [YouTube](#) or [Vimeo](#) channel. Privacy concerns? Set videos to “Private” so they can only be viewed by those with a direct link.

WHAT ABOUT EQUIPMENT?

- Check out our list of [equipment for producing classroom videos and podcasts](#).

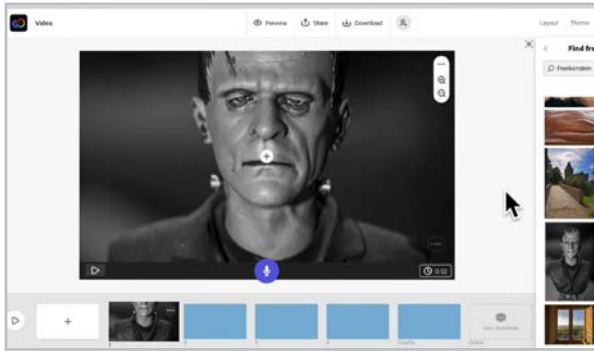
DUB YOUR VIDEOS INTO OTHER LANGUAGES

Google’s [Aloud](#) tool — which is still only available if you request early access — offers users the ability to get their videos dubbed into other languages for free. This could be a huge benefit for teachers working with students who don’t speak English.

TEXT-TO-SPEECH ANIMATORS

A text-to-speech animator lets you type in text, then have an animated character read the lines out loud. Two tools that do this are [Vyond](#) (which was formerly known as GoAnimate) and [Plotagon](#).

Adobe Express | Apple Clips | Blabberize EDU | ChatterPix | Clipchamp | Do Ink | iMovie | Powtoon | Prezi Video | simpleshow | Stop Motion Studio | TextingStory
Toontastic 3D | VEED | Wick Editor



Adobe Express
adobe.com/express

In addition to an image maker, Adobe Express (formerly Adobe Spark) also has a great free video creator. The experience is kind of like creating a good-looking PowerPoint, adding narration or music, and ending up with a movie. You can start from scratch or use one of their templates, then choose from their library of free images, music, and video clips to enhance your video, or upload your own.

Similar: [Animoto](#), [Canva](#), [Magisto](#), [Renderforest](#)



Apple Clips
apple.com/clips

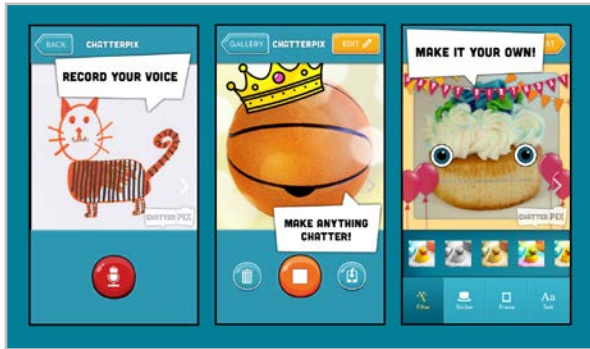
This iOS mobile app was designed for fast, easy video creation. Users can combine video footage with photos, then add animated titles, stickers, and other effects. You can appear as an animated version of yourself and change your background to something from the app's library of backgrounds. And the Live Titles speech-to-text feature creates automatic subtitles synced with your voice. Finished videos can be shared or downloaded for later use.



Blabberize EDU
edu.blabberize.com

Similar to Chatterpix, Blabberize allows the user to make pictures talk. The uses for this are limitless, and in only a few clicks students can add a mouth, embellishments, and record audio to create their talking picture. Make sure to use Blabberize EDU, which gives a free trial and has a minimal subscription fee. The full Blabberize site is not always appropriate for children.

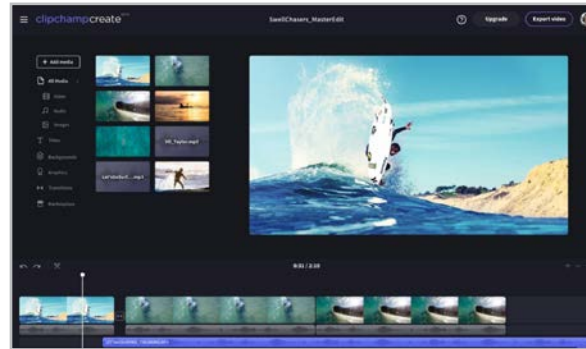
Adobe Express | Apple Clips | Blabberize EDU | ChatterPix | Clipchamp | Do Ink | iMovie | Powtoon | Prezi Video | simpleshow | Stop Motion Studio | TextingStory
Toontastic 3D | VEED | Wick Editor



ChatterPix

duckduckmoose.com/educational-iphone-itouch-apps-for-kids/chatterpix/

With this simple app, users can make any picture talk. Just take or upload a picture, draw a line where the “mouth” should be, record yourself talking, then watch as the app uses your voice to animate the thing in the image. You can add text, frames, and stickers to liven up the recording, then download the video for use anywhere. The main difference between ChatterPix and [ChatterPix Kids](#) is the sharing options.



Clipchamp

clipchamp.com

If you’re working on a Chromebook, this tool is a great WeVideo alternative. In addition to a desktop and web based version, Clipchamp also has a mobile app for on-the-go editing. Between built-in templates, hundreds of stock videos and images, along with a wide selection of audio clips, Clipchamp is a full-featured video recording and editing platform, including a text-to-speech option.

Similar: [WeVideo](#) is more popular and does many of the same things, but Clipchamp’s free option has more features.



Do Ink

doink.com

With this iPad app, even young students can create green screen videos, where the speaker is filmed in front of a green screen, then the editing tool makes everything that’s green in the video transparent, so that it can be replaced with another image or video. Do Ink also has a separate [animation app](#) that lets users create basic animated videos.

Similar: [Chromavid](#)

Adobe Express | Apple Clips | Blabberize EDU | ChatterPix | Clipchamp | Do Ink | iMovie | Powtoon | Prezi Video | simpleshow | Stop Motion Studio | TextingStory
Toontastic 3D | VEED | Wick Editor



iMovie

apple.com/imovie

If you want to go beyond animations and photo slideshows, you'll need a tool that can edit actual video footage. For that, you need a tool like iMovie. Although this tool comes built into all iOS and MacOS devices for free, it is surprisingly robust in its capabilities, offering all the basic features of a movie editor.

Similar: [Adobe Premiere Pro](#), [Splice](#)



Powtoon

powtoon.com

One of the earliest of its kind, Powtoon is a great tool for creating animated videos: They offer lots of animated characters, music, photos, and other assets (or use your own) that you can pull together almost as easily as a PowerPoint slideshow. When you're finished, you'll end up with something that looks like it took a lot more tech skill than it really did!

Similar: [Animaker](#), [Biteable](#), [Moovly](#), [Wideo](#)

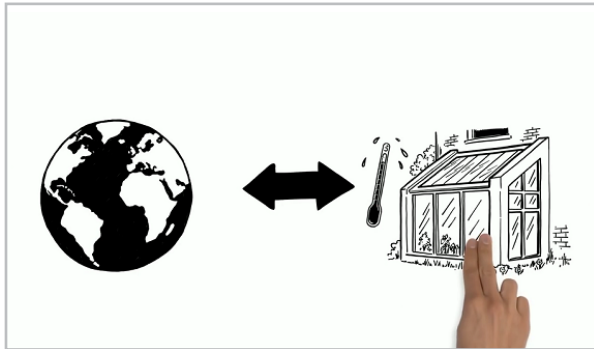


Prezi Video

prezi.com/video

This tool allows you to combine the animation features of a Prezi presentation with a talking-head video. You stay on the screen, talking the whole time, while your animated presentation is layered right on top of that video. Within that side presentation, you can share a screen, show a video, provide text or images or anything else you would do with a shared screen presentation. [This video](#) covers some teacher-specific features.

Adobe Express | Apple Clips | Blabberize EDU | ChatterPix | Clipchamp | Do Ink | iMovie | Powtoon | Prezi Video | simpleshow | Stop Motion Studio | TextingStory
Toontastic 3D | VEED | Wick Editor



simpleshow
simpleshow.com

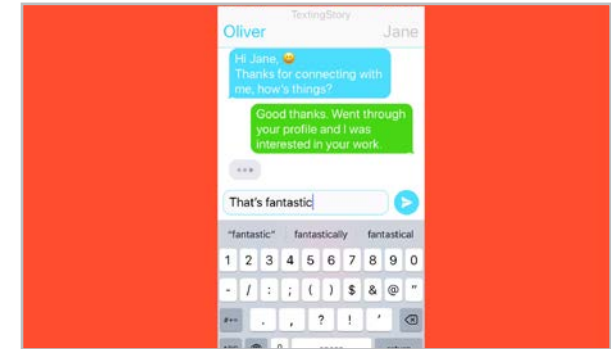
Creating videos with simpleshow is different from other video creation tools. First, you write out the script for your video or upload a PowerPoint, and simpleshow will extract a script from it. When your script is done, the software reads it, picks out key words, and suggests images to go with them. Choose background music and an automated voice-over, and your video is ready to share. Register as an educator for free [classroom options](#).

Similar: [Doodly](#)



Stop Motion Studio
cateater.com

Available for all mobile devices and Chromebooks, this tool enables users to create stop motion videos, made from a series of photos in which items are moved just a bit in each frame. The app includes tools to help you position objects, add titles, credits, and voice-over narration, a green screen tool that lets you change the background, and a library of music clips and sound effects. A [free version](#) is also available for iOS.



TextingStory
textingstory.com

This free app creates videos that look like two people having a conversation via text messaging. You may have seen a few of these recently: They tell stories that are scary, funny, romantic, and sad. The unique format would make for an interesting creative writing challenge and could be used across content areas.

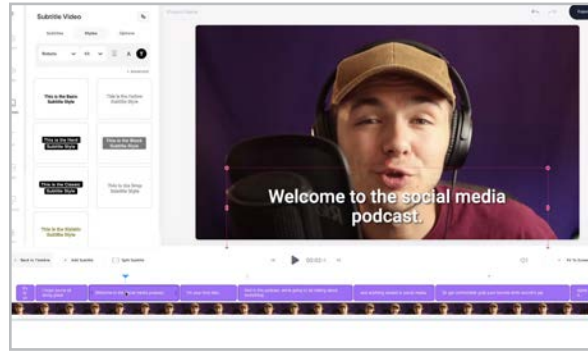
Adobe Express | Apple Clips | Blabberize EDU | ChatterPix | Clipchamp | Do Ink | iMovie | Powtoon | Prezi Video | simpleshow | Stop Motion Studio | TextingStory
Toontastic 3D | VEED | Wick Editor



Toontastic 3D

toontastic.withgoogle.com

This free app lets users create 3D cartoon movies built on the structure of a story or a science report. As users create a story, which they narrate themselves, they choose the parts to create and edit by clicking on parts of a plot diagram or science report while the in-app narrator explains the purpose of each part. See an example of a finished video [here](#).



VEED

veed.io

This video editor lives completely online and works in your browser, with no software to download. Just upload your video and you can edit, cut and crop, add text overlays, subtitles, and special effects, then download your video for use anywhere. They also have a screen and webcam recorder. The free plan allows you to use most of the tools; paid options let you edit longer videos, upload unlimited videos, get HD quality videos, and remove the watermark.



Wick Editor

wickeditor.com

Wick Editor is a web-based animation platform. It is perfect for introducing students to the art of animation and makes creating stop-motion animation fun and easy. Students can draw, upload, or use the included imagery to create different animations. Advanced users can code the animations and add audio to their creations.



Video Conferencing

One type of tool that has recently skyrocketed in popularity is video conferencing, and even though many of our interactions have returned to in-person, it seems video conferencing platforms are here to stay. In some cases, this has made things easier: Parent-teacher conferences can be more efficient, inclement weather no longer has to wreak havoc on our yearly schedules, and safely including families

in school-wide events has become a non-issue, all thanks to platforms like the ones in this category.

Additionally, each platform has developed a plethora of resources to support educators in making video instruction meaningful and positive for students. These include tools to automatically take attendance, create random discussion groups, and record classes for absent students.

The first part of this section will feature three of the most popular video conferencing platforms: Google Meet, Skype, and Zoom, plus links to other platforms that perform many of the same functions.

On the last page you'll find a special section of tools that have added the power of virtual reality to make video conferencing feel more like interacting in a physical space.

Be sure to see our section on [virtual and asynchronous learning](#) at the beginning of this guide for a more in-depth look at effective

GOOGLE MEET EXTENSIONS TO TRY

If you're a Google Meet user, but you don't have a paid plan, you won't have built-in features like attendance or breakout rooms. But the extensions listed below can help bridge those gaps, offering the same functionality and more for free.

[Google Meet Breakout Rooms](#)

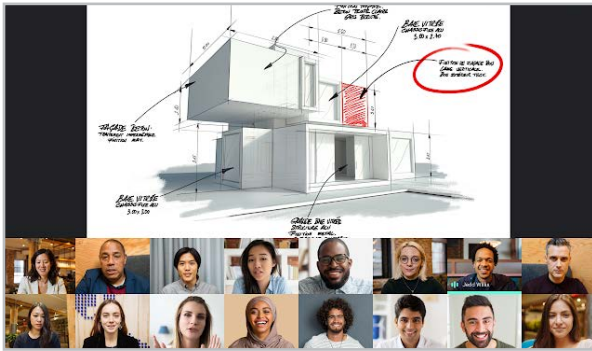
[Meet Attendance](#)

[Dualless Screen Splitter](#)

[Reactions for Google Meet](#)

[Google Meet Grid View](#)

Learn about other Meet extensions in [this article](#).

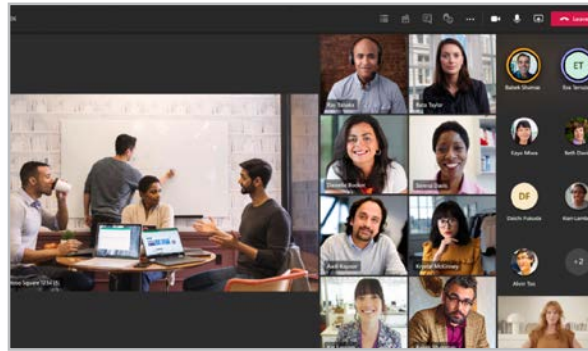


Google Meet

meet.google.com

For schools that use Google Workspace for Education, Meet is the built-in video conferencing tool. It's seamlessly integrated into [Google Classroom](#), including a Meet link directly in each class so students can easily join. Additionally, creating classes on [Google Calendar](#) automatically creates a Meet link for ease of access.

Similar: [Jitsi Meet](#), [WebRoom](#)



Microsoft Teams

microsoft.com/microsoft-teams

A fully integrated communication platform, Teams allows schools using the Microsoft Education ecosystem a space to share files, have conversations, and hold live video sessions to connect students and teachers.



Zoom

zoom.us

COVID-19 made Zoom one of the most talked-about video conferencing platforms in the world. The above video gives a general overview of how it works, but [this one](#) explores some other features you may not have tried.

Similar: [Butter](#), [Skype](#)

VIDEO CONFERENCING MEETS VIRTUAL REALITY

While Google Meet, Microsoft Teams, and Zoom provide effective video conferencing tools that have become a mainstay in education and work environments, many agree that this type of interaction can become tedious.

More recent developments in the remote engagement realm have brought about a new layer of tools. These platforms allow the creator to build a virtual space — an office environment, a classroom, or an entire school setting. The creator can include all sorts of items that are typical in the given setting — desks, tables and chairs, screens and projectors, plants, water fountains — creating a fully operational virtual space.

Users who enter the space engage in something called *proximity chat*, where, when their avatar is in close proximity to another’s, the video windows open up for both (or for several) users present. This allows for spontaneous, “face-

to-face” discussion. In classroom settings, this allows students to work in groups and teachers to walk from group to group to interact.

All the tools featured here have similar functions but differ slightly in graphics and setup.



Kumospace
kumospace.com



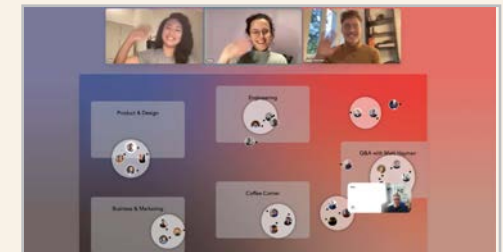
Frame
framevr.io



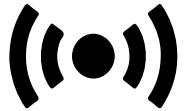
SoWork
sowork.com



Gather
gather.town



Wonder
wonder.me



Video: Live Streaming & Short Form

The global pandemic of 2020 gave us all more exposure to live video of all kinds, whether it was video conferencing or watching live broadcasts instead of attending events in person. And short-form video, especially on TikTok, exploded in popularity as we all looked for creative ways to pass the time.

In this section, we'll review what live streaming and short-form video are, list the most popular platforms for each, and discuss a few ways they can be used for educational purposes.

WHAT IS LIVE STREAMING?

With live streaming, a camera (or smartphone, in most cases) records some event and that event is broadcast live online, in real time.

One concern many teachers have with live streaming is privacy. Most live streaming apps give users some control over who views broadcasts, but at this early stage these controls can be limited. Some teachers have handled this issue by avoiding showing student faces in their broadcasts, or having parents sign release forms giving permission for their children to appear in the broadcast. In other cases, teachers may opt to just use live streaming for their own professional development, without including students at all.

Another issue is age appropriateness. If you are broadcasting, viewers can come into your broadcast and comment. Occasionally this

means dealing with inappropriate comments that can be seen by anyone watching the broadcast, so if you use them, have another adult monitor the comment stream. Using these tools also means you'll have access to other people's broadcasts, some of which may contain drug use, nudity, and so on, so young children should not be exploring these apps on their own.

To learn more about the risks associated with each platform, read [this overview](#) from Internet Matters.

LIVE STREAMING PLATFORMS

Nearly all [social media](#) platforms now offer live streaming options, like Facebook, Instagram, Twitter, and Snapchat.

Other places to live stream include [YouTube](#), [YouNow](#), and [Twitch](#), which is set up primarily for people to broadcast themselves live playing video games. Because Twitch doesn't have its own streaming tools, many gamers use the free [Open Broadcaster Software](#) to actually generate the live streams.

CLASSROOM USES FOR LIVE STREAMING

- Connect with experts or students anywhere in the world to conduct interviews, watch demonstrations, or tour faraway places.
- Live stream important school events — assemblies, plays, speeches — to family members who are unable to attend.
- Do teacher broadcasts for parents and students, sharing important classroom news and information.
- Share classroom practices with other teachers nationwide or worldwide.
- Watch educational live streams put out by different organizations as a way to enhance instruction.

WHAT IS SHORT-FORM VIDEO?

Some sites limit user-created videos to very short lengths, and for some reason, these sites are also short-lived: One of the first platforms like this was Vine (which [closed](#) in early 2017) where videos were only six seconds long.



[The National Aquarium](#) live streams from several cameras throughout the day.

One short-form platform that really took off in 2020 was [TikTok](#), which started as a place for users to dance and lip-sync to music provided by the platform, but [evolved into something much bigger](#), with creators generating everything from political content to comedy videos to activist campaigns.

Other short-form platforms include [Huddles](#), [Facebook Reels](#), and [Instagram Reels](#).

CLASSROOM USES FOR SHORT-FORM VIDEO

- Share your expertise with parents or other teachers.
- Have students create videos to show what they've learned or as a study aid before a test.
- Deliver snippets of your own content through short-form videos.



Video: Screencasting

Nearly every tool featured in this book is linked to a video, and most of those videos are demos of people using the tool, as if we're right in the room with them, watching their computer screen. Videos like these are made with screencasting software, which lets you record whatever is happening on your computer screen, along with your voice-over narration.

When schools moved to remote teaching in 2020, most teachers had to quickly learn how to use screencasting tools, so many of us have the basics down. The next phase of screencasting will be sampling different features in a range of tools to find one that allows you to create the most effective videos for your students.

CLASSROOM USES

- Record lectures by creating a slideshow, then recording yourself presenting it with screencasting software. These videos can be used for blended learning, to provide instruction in remote or hybrid situations, or just to supplement your regular teaching. [This article](#) offers tips on how to create a high-quality screencast video.
- Create an “animated” story: Build a slideshow that illustrates a story, then narrate that story through a screencast while flipping through the slides.
- Record demonstrations of common tech tools or class procedures. Store these in a learning management system or through your own video sharing channel.
- Have students create any of the above kinds of videos themselves as part of an informational, argumentative, or narrative writing project.
- Communicate common procedures with parents or students by recording quick screencasts. Build a library of these on your class website.

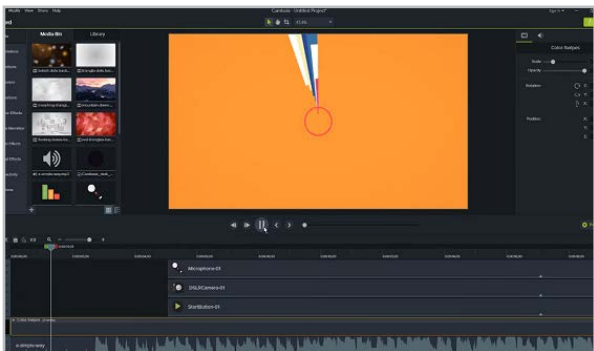


CREATE AWESOME SCREENCAST VIDEOS IN JUMPSTART

Screencasting is the focus of one of the 10 modules we study in JumpStart, our online technology course for teachers. Learn about the course [here](#).

OTHER SCREENCASTING TOOLS

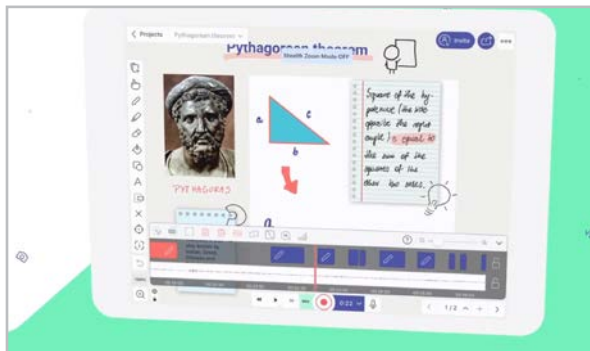
- [Edpuzzle \(Chrome Extension\)](#)
- [Open Broadcaster Software](#)
- [Snagit](#)
- [Tegrity](#)
- [VEED](#)



Camtasia
[camtasia.com](https://www.camtasia.com)

Camtasia is one of the most sophisticated tools for recording and editing screencasts, and it's what was used to create most of the videos on the Cult of Pedagogy [YouTube channel](#). Because of the cost, this option is best for users who need to make a lot of high-quality videos. What you get for the price is much greater editing precision, plus the ability to add transitions, images and music, call-outs, and a lot more. Learn about education pricing [here](#).

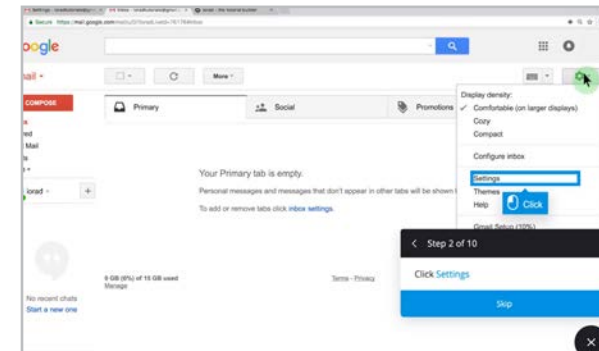
Similar: [ScreenFlow](#)



Explain Everything
[explaineverything.com](https://www.explaineverything.com)

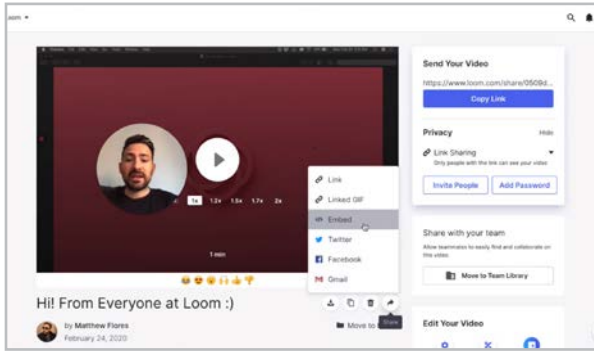
Unlike a basic screencasting tool, Explain Everything allows you to create visuals on a digital whiteboard, then narrate and record your activity within the app itself. What you end up with is a video you can share with students, and they can do the same. This tool can also be used just to give presentations without recording, and its sharing features make it a great option for collaborating with others on a project.

Similar: [Educreations](#), [ShowMe](#)



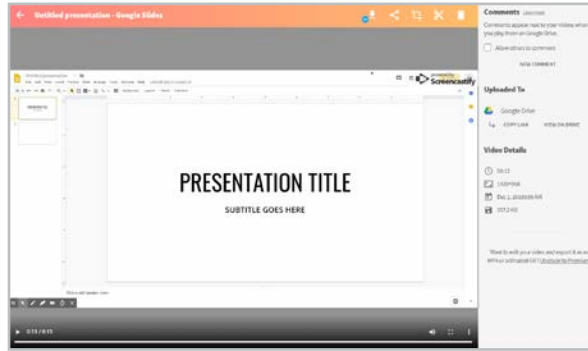
iorad
[iorad.com](https://www.iorad.com)

This is another tool that's different from your typical screencasting platform and has tons of potential for teaching. With iorad, you make interactive tutorials that prompt the user to click on specific parts of the screen as they follow your steps. It sounds complicated but you can actually create one in just a few minutes. Finished tutorials can be shared with a link or embedded right inside a website.



Loom
loom.com

This tool is similar to Screencastify – it’s quick and easy, available as a Chrome extension or desktop app, and allows you to share your video immediately through a link. Teachers who prefer Loom say it’s easier than Screencastify, and features like the ability to see how many people have viewed the video give it a slight edge.



Screencastify
screencastify.com

Described as “dead simple” and “ridiculously easy” by educators, this Chrome extension works right inside your browser to record activity on a single tab or your whole desktop. Finished videos are automatically added to your Google Drive and can be shared with a link. New features include a built-in editor, viewer statistics, and the ability to add interactive questions to the videos. Both paid and free versions have lots to offer.



Screencast-O-Matic
screencast-o-matic.com

If you just want to record a basic screencast without messing around with title overlays, editing, or special features, Screencast-O-Matic is a good free option. One of the first screencasting tools on the market, it has similar capabilities to Screencastify, but if you’re not a Google user, this is a great alternative. The free option has some limitations, but the deluxe plan is pretty affordable.

Similar: [RecordCast](#)



Virtual & Augmented Reality

Immersive technology is any type of tech that extends or builds on physical reality. This includes virtual reality, augmented reality, 360, and mixed reality. Because this is still a new field, we're nowhere near seeing all the ways it will impact education.

This section will start with a review of the terms, a discussion of some classroom applications, links to helpful resources, and a look at some tools that are popular with teachers right now.

THE TERMINOLOGY

Virtual Reality immerses the user in a 360-degree environment, a computer-generated simulation, viewable through a VR

headset, and allows them to move through and interact with that environment.

Augmented Reality layers digital enhancements on top of objects in the real, physical world. Using a device, like a smartphone, loaded with AR software, users point it at a picture or physical object, and the software brings up some kind of digital element like a 3D animation, text, or a video. ([Pokémon Go](#) is an example of an AR game.)

Mixed Reality includes both VR and AR.

360 is any kind of content that gives viewers a 360-degree view of an environment. The main difference between 360 and VR content is that to experience VR, users need a headset so they can move through the space, whereas in 360, the view is limited to where the photographer was standing when they captured the image.

EDUCATIONAL USES

Many current immersive tech platforms put users on the receiving end, where we are the consumers of the content. Now, more tools let users *create* the immersive content. In either case, these tools can be used for lots of educational purposes:

- Using games like [HoloLAB Champions](#), conduct science experiments and simulations with no equipment.
- Bulletin boards and displays can have AR elements layered on them, making them a multimedia experience.
- Students can experience historical or geographical places they could never travel to.
- Students can practice public speaking or presenting to an “audience” using an app like [VirtualSpeech](#). Or practice social skills on a platform like [Mursion](#).
- Students can create their own VR environments as part of a design thinking project.
- Virtual experiences could be used as prompts for writing assignments or to provide material for research projects.
- Students or teachers can create school or classroom tours using AR or VR.
- Classes can take advantage of VR and 360 capabilities built into some familiar tools like [Flip](#), [Nearpod](#), and [ThingLink](#).

- Immersive technology can be used to build empathy. Groups like Stanford University's [Virtual Human Interaction Lab](#) are creating immersive experiences like [1,000 Cut Journey](#), which allows participants to encounter racism first-hand. Visitors to the International Rescue Committee's [Four Walls](#) experience can learn what life is like for Syrian refugees. And the [Lyfta](#) platform aims to teach global citizenship with its collection of interactive documentaries.

PROFESSIONAL RESOURCES

- Connect with other teachers who use AR and VR in the ARVRinEDU Twitter community. Find their posts with the [#ARVRinEDU](#) hashtag.
- For a deep dive, read the book [Learning Transported: Augmented, Virtual and Mixed Reality for All Classrooms](#) by Jaime Donally.
- Read [4 Practical Steps to Becoming an AR Innovator](#) from the 3DBear website.
- Rachelle Dene Poth shares more ideas in [8 Ways to Bring Augmented and Virtual Reality into the Classroom](#)

VR HEADSETS

In order to view VR content, users need a headset. There are three different types:

Mobile: To make these work, you need to insert a smartphone into them. Low-priced choices for schools are [Google Cardboard](#) or [Merge VR Goggles](#).

Standalone: This type has everything built in; no need to insert a smartphone. One popular option is the [Meta Quest 2](#) (which until [recently](#) was known as the Oculus).

Tethered: These must be attached to a computer or gaming system with a cord or cable. This type is pretty expensive and may not be the best option for schools.

CAN AR HELP STUDENTS WITH AUTISM?

Check out the wearable glasses made by Brain Power in the [Special Ed/UDL](#) section. These use AR technology to help people with autism learn social skills and navigate place-based transitions.

MORE AR/VR APPS TO EXPLORE

AR Throwing Simulator

riseupgames.com/arts

Figment AR

[Link to Google Play Store](#)

Halo AR

lightup.io/halo

HomeCourt

homecourt.ai

Math Ninja AR

[Link to App Store](#)

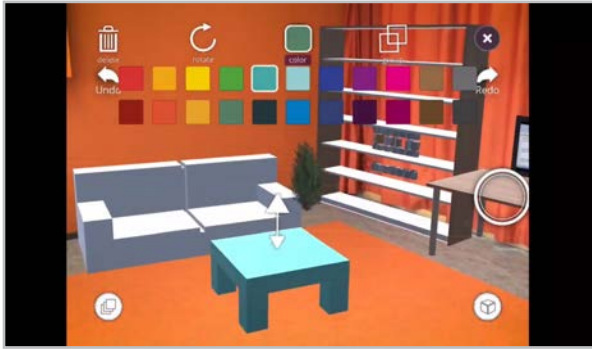
Twinkl LeARn & Explore

twinkl.com/apps/learn-and-explore

AR/VR FOR PRE-K-3

For very young students, explore the kits offered by [disruptED](#). They include a VR headset and books and activities that use AR/VR to bring content to life.

3DBear | ClassVR | CoSpaces Edu | Google Lens | JigSpace | Merge | Metaverse | Mozilla Hubs | Popar | Quiver | Thying | Tilt Brush



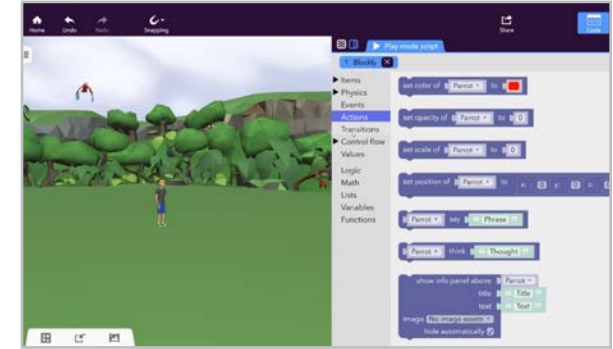
3DBear
3dbear.io

Developed with the help of teachers from Finland, this mobile app allows users to build augmented reality scenes using virtual 3D models combined with their own surroundings. In the picture above, students are designing a reading corner at their school library. Teacher accounts include lesson plans on a variety of topics.



ClassVR
classvr.com

ClassVR is designed specifically for schools. The standalone headsets interface with the teacher portal. Included in the teacher portal are more than 500 ready-to-use VR experiences. The platform allows for streamlined teacher guidance while immersed in engaging experiences via the headsets. Headset kits are available in sets of four or eight in a fully charging, portable storage unit.



CoSpaces Edu
cospaces.io/edu

This popular tool lets students use code to create their own virtual reality environments. When a project is done, students can use the CoSpaces mobile app (with a VR headset) to view it in 3D. To see the kinds of projects your students could do in CoSpaces, visit their [lesson plans](#) page, then view sample projects in the CoSpaces [Gallery](#).



Google Lens

lens.google

Google Lens allows you to scan your world, literally, by taking pictures of things you see using the app. Once an image is captured, Google magic will identify the image, whether it's a plant or product, and provide information to you, including translating signs and print from one language to another. Additionally, check out some of Google's ever-growing collection of other [AR/VR](#) tools.

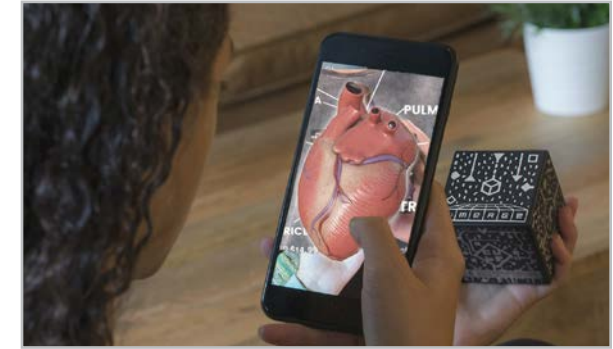
Note: For iOS, Lens lives in the regular Google search app.



JigSpace

jig.space

With this downloadable software, students can create *Jigs*, interactive slideshow presentations that explore and explain 3D and AR models. Jigs can be created without any coding and are viewable on any device. Users can also view Jigs created by others. JigSpace would be an excellent tool for students working on [3D design](#) projects and want to share their designs with others.

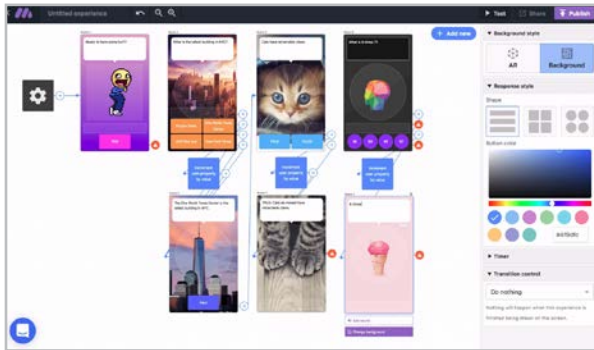


Merge

mergeedu.com

This site houses a collection of resources for experiencing both AR and VR. The Merge Headsets are soft, flexible, colorful smartphone viewers that are relatively affordable. The Merge Cube (pictured above) allows users to hold and manipulate 3D objects in their hands. A Merge EDU license gives teachers access to thousands of digital teaching aids that make the most of these tools.

Similar: [VIVE](#)

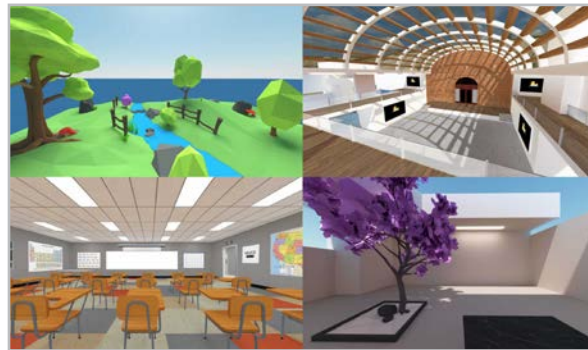


Metaverse

studio.gometa.io

This tool helps users create “experiences” using AR technology: games, quizzes, interactive stories, tours, and so much more. For specific examples of how teachers are using Metaverse in their classrooms, check out [this archive of Metaverse posts](#) on Medium.

Similar: [Assemblr](#)



Mozilla Hubs

hubs.mozilla.com

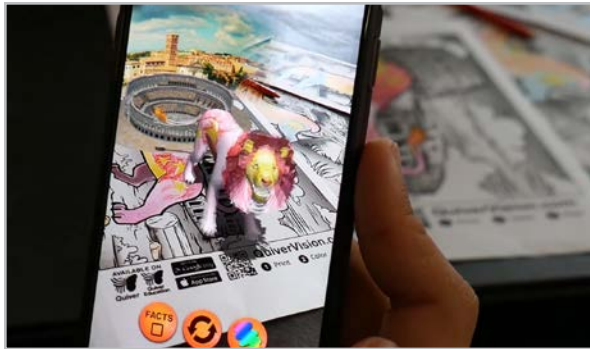
Create and host your own virtual space for meetings, events, and more. Hubs provides a private, virtual, 3D environment for collaboration via any web browser. To take things one step further, [Spoke](#) is the custom environment creator that integrates with Hubs, allowing users to design their own environments, or they can build one from scratch with [Blender](#).



Popar

popartoy.com

Through a collection of AR- and VR-infused play mats, posters, charts, and books, students use Popar to interact with their learning in engaging, entertaining ways. Topics include anatomy, space, the periodic table, and geography. Educational packs include a variety of topics.



Quiver

quivervision.com

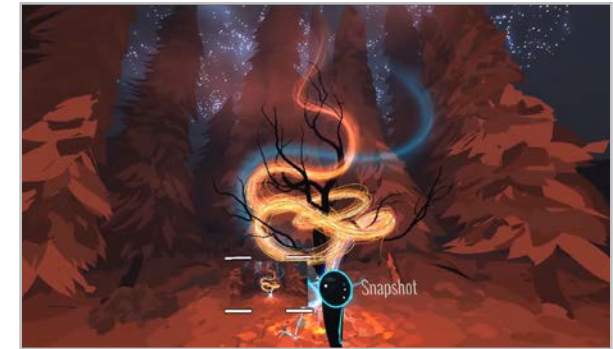
Students who use Quiver start by coloring a printable coloring page. When they are done, they use the app to bring the picture to life in 3D. For more educational value, check out [Quiver Education](#), which offers coloring pages for topics like biology, geometry, and the solar system.



Thyng

thyng.com

Thyng allows users to create augmented reality experiences on any surface. These can include 3D objects, photos, videos that will play in the app, and animations.

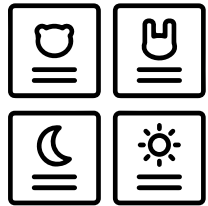


Tilt Brush

tiltbrush.com

This tool, created by Google, lets users paint in 3D space with virtual reality. This completely new medium opens up all kinds of possibilities for creative expression, like [this virtually illustrated story](#) written by students. For inspiration, take a look at this incredible [gallery of artists' work](#) using Tilt Brush.

Similar: [Quill](#)



Vocabulary Builders

A robust vocabulary helps students in so many ways: It supports content knowledge in all disciplines, it is key for reading comprehension all the way through high school, it broadens the range of reading that students are able to enjoy, and it makes them more skilled, eloquent writers.

With all of those benefits in mind, teachers should make a deliberate effort to build regular vocabulary instruction into their plans.

In [8 Ways to Grow Students' Vocabulary](#), literacy expert and author Angela Peery advises teachers to use a variety of strategies to accomplish this. Just a few of these are:

- **informal conversations**, where the teacher casually inserts new vocabulary words into the discussion
- **TIP charts** that contain the word, a student-friendly definition, and a hand-drawn picture
- **self-collection**, where students collect their own personalized lists of words
- **word talks**, where students share interesting words they've come across in reading or day-to-day life
- **digital tools** like the ones in this section for independent practice

Whether students want to raise scores on a college admissions test, improve their English skills, or just boost their overall vocabulary, these tools help them put those goals into action with lessons, games, and other activities. Choose just one or combine them for more varied practice.



Flocabulary

flocabulary.com

This fun, popular platform builds lessons around hip-hop style videos to help students learn new words.



Freerice

play.freerice.com/categories

This site has an addictive vocabulary game with five difficulty levels. As you play, rice is donated to the World Food Programme.

Flocabulary | Freerice | Magoosh Vocabulary Builder | Membean | Vocabador | Vocabulary.com | WordUp Vocabulary



Magoosh Vocabulary Builder
magoosh.com/vocabulary-builder

With a focus on test prep, this free app tracks your progress in learning 1,200 words most likely to appear on the GRE, SAT, and others.



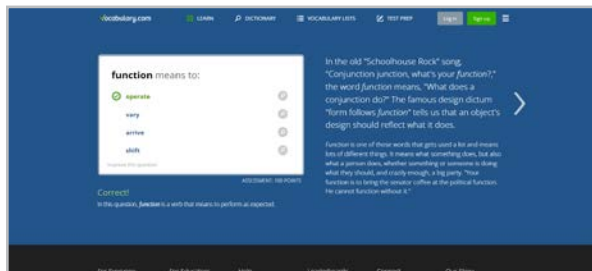
Membean
membean.com

This web-based tool is the priciest option, but it offers a variety of plans and allows teachers to individualize instruction for all students.



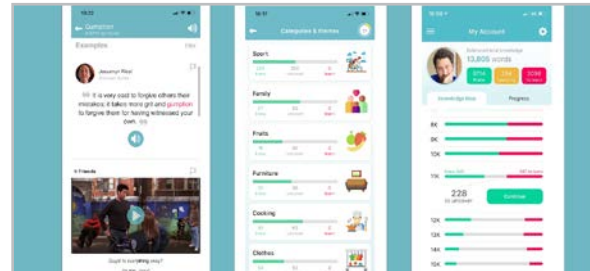
Vocabador
vocabadorapp.com

This iPhone app allows students to study SAT vocabulary words, choose an avatar, and “get in the ring” to play against other virtual wrestlers.



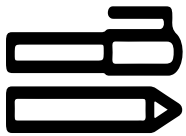
Vocabulary.com
vocabulary.com

This site offers games, flashcards, and formal test prep. Personalization is offered through adaptive technology and badges. Users can compete individually or on a school team.



WordUp Vocabulary
[App Store](https://www.getwordup.com) | [Google Play Store](https://www.getwordup.com)

This free app assesses your current skill level, then provides lessons with real-world and popular culture examples.



Writing

The teaching of writing is far too complex for anything but a living, breathing human to handle. Writing teachers still have the unique ability to look at a piece of writing and interpret and evaluate its nuances, stylistic choices, structure, and overall flow. But technology can take parts of the writing process and automate them. It can make it easier to collaborate, share, and revise. And it can help us learn the rules that govern good writing.

The tools in this section will not only help us as teachers of writing; introducing them to our students will equip them to become self-sufficient writers themselves. The tools are grouped into seven categories:

Composition Helpers give us a place to structure, arrange, and organize our pieces, offering hints along the way.

Grammar Instruction tools help us learn and practice grammar and usage rules outside the context of writing; these should only be used as a supplement to a writing-rich classroom.

Proofreading tools improve our mechanics by spotting existing errors in our work and suggesting corrections.

Publication sites offer opportunities for students to get their writing published, either digitally or in print.

Social Writing sites offer a platform for sharing our own writing and enjoying the work of others.

Style Editors help us improve the quality and readability of our sentences.

Word Processing tools enable us to get the words down, reorganize them, and format the text to make it more pleasurable to read.

A FEAST OF WRITING PROMPTS

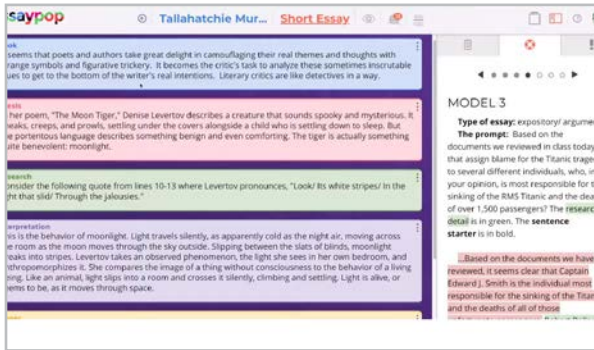
Sometimes you just need an idea to get you started. The sites below offer pictures, videos, and 360-degree rooms that will do the trick.

- [Imagine Forest](#)
- [John Spencer's Visual Writing Prompts](#)
- [The New York Times Picture Prompts](#)
- [Once Upon a Picture](#)
- [The Secret Door](#)*
- [Visual Writing Prompts \(1\)](#)
- [Visual Writing Prompts \(2\)](#)

**This site is INCREDIBLE, but it was not designed specifically for writing or education. We haven't seen any inappropriate material on it, but we advise you to not allow younger students to visit the site unsupervised.*

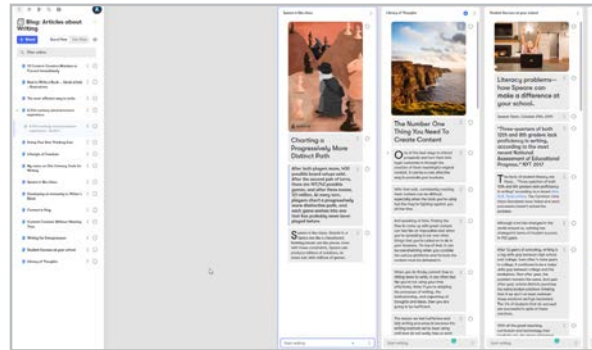
COMPOSITION HELPERS

Composition Helpers | Grammar Instruction | Proofreading | Publication | Social Writing | Style Editors | Word Processing



essaypop
[essaypop.com](https://www.essaypop.com)

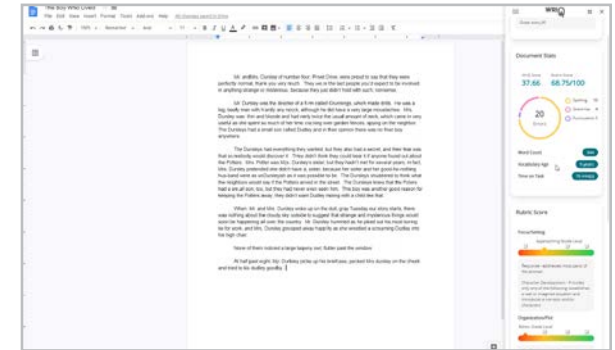
This site offers a library of writing prompts, models to refer to when writing, and sentence starters to help get the academic language right. Writing “frames” break essays into smaller, color-coded chunks that are easier to work with than one giant piece of writing: hook, thesis, research, interpretation, and closing. Once an essay is done, students and other invited guests can review each other’s writing in the Hive, a space on the platform for collaboration.



Speare
[speare.com](https://www.speare.com)

Speare works like your brain does, where building blocks of text can be moved, merged, split, and formatted without disturbing the other blocks. There’s no need to copy and paste (and lose) your work — just drag it around until you’re happy with it. View multiple documents side by side, insert images and YouTube videos, and when you’re done, your document can be pasted into another tool, downloaded as a PDF, or viewed as a web page.

Similar: [Scrivener](#)



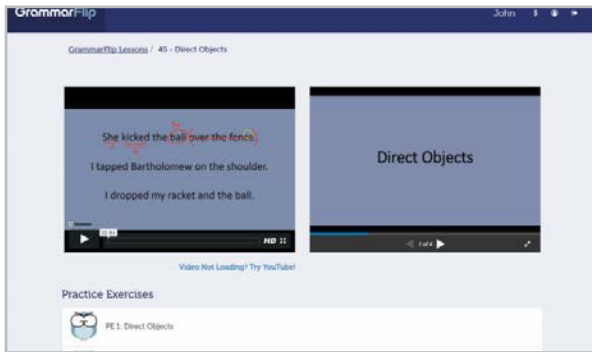
WriQ
texthelp.com/products/wriq

WriQ is a Google Chrome extension and Microsoft Word add-in that puts a “dashboard” to the side of a document the student is currently working on. As the student writes, WriQ gives real-time feedback on metrics like time on task and vocabulary maturity, as well as pointing out errors in spelling, grammar, and punctuation. On the teacher side, you can use WriQ’s integrated rubrics or import your own to assess students’ writing with the app.

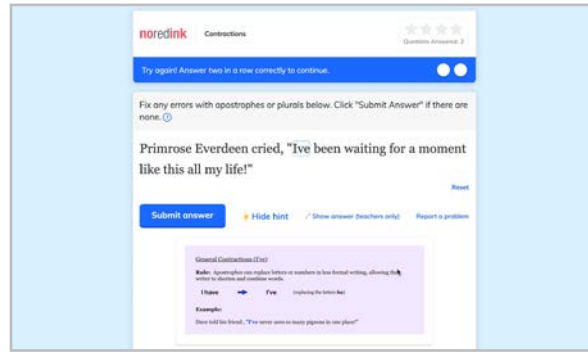
Similar: [Ulysses](#) (for Apple devices)

GRAMMAR INSTRUCTION

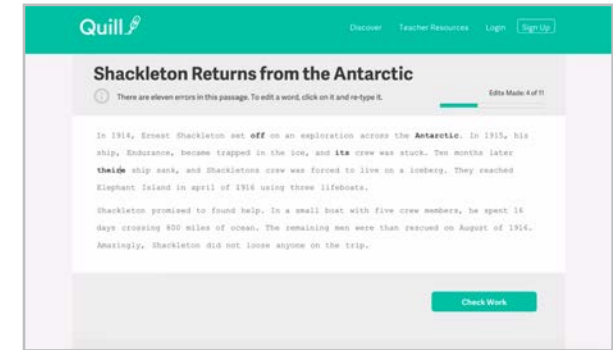
Composition Helpers | Grammar Instruction | Proofreading | Publication | Social Writing | Style Editors | Word Processing

**GrammarFlip**grammarflip.com

This site offers diagnostic tests, instructional videos, practice exercises, and assessments in dozens of grammar and writing concepts for grades 4-12.

**NoRedInk**noredink.com

NoRedInk gives hands-on practice with a wide range of grammar and writing skills, either self-directed or assigned by a teacher. Exercises can be customized to reflect student interests and teachers can view student data to track progress.

**Quill**quill.org

On Quill, students practice grammar and usage by proofreading passages, writing sentences, and combining sentences. When an exercise is complete, they receive instant feedback about the skills they need to work on.

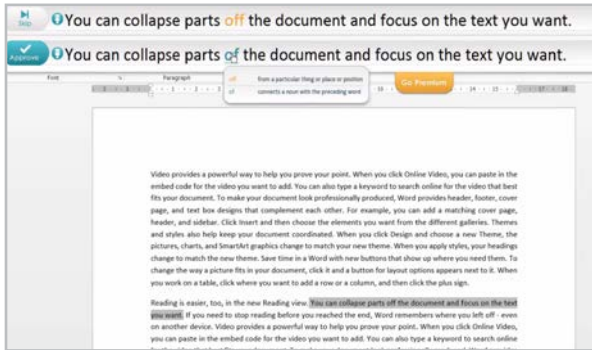
NO GRAMMAR IN ISOLATION

Grammar tools like the ones featured here should not be the main course in any English language arts class, and grammar taught in isolation is strongly discouraged by the National Council of Teachers of English. These tools would make good supports for a curriculum that focuses on authentic writing.

Read more in [How to Deal with Student Grammar Errors](#).

PROOFREADING

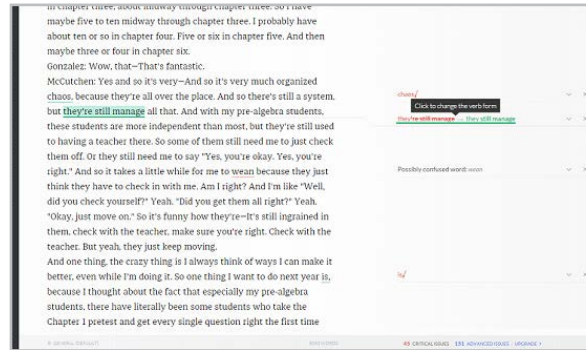
Composition Helpers | Grammar Instruction | Proofreading | Publication | Social Writing | Style Editors | Word Processing



Ginger

gingersoftware.com

Ginger works as a free add-on and browser extension, so it operates inside other programs like email, social media, and Microsoft Word. It checks punctuation, grammar, and word usage and suggests corrections.



Grammarly

grammarly.com

Grammarly checks your grammar, spelling, usage, and mechanics wherever you write. You can compose directly on the Grammarly site, checking your work as you go, upload your own file and have that checked, or use a browser extension or word processor add-in to make it work inside other programs.

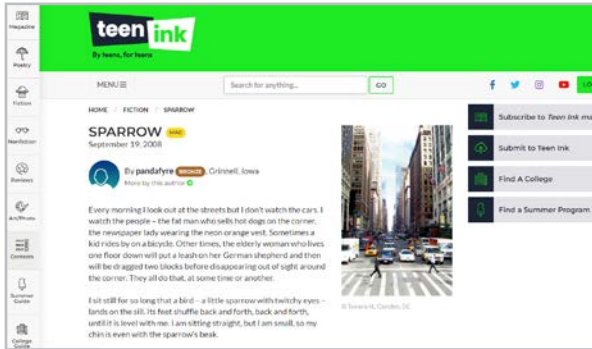
WHAT ABOUT PLAGIARISM CHECKERS?

It's easy to find sites to help you check student work for plagiarism. [Turnitin](https://turnitin.com) is one of the most popular, but it's not cheap. Sites like [Grammarly](https://grammarly.com) and [BibMe](https://bibme.com) have built-in plagiarism checkers that work quickly and can tell you how much of a piece is not original. And if you have Google Classroom you can use their [originality reports](https://www.google.com/edu/classroom/plagiarism-reports/).

A more effective long-term approach for dealing with plagiarism is to teach students how to avoid it. Many students who plagiarize don't have an adequate understanding of what plagiarism is. They also don't have a good set of strategies for synthesizing what they learn from outside sources into their own original work. Suggestions for how to approach both of these issues are offered in [Teaching Students to Avoid Plagiarism](https://www.teachingstudents.com/avoid-plagiarism/).

PUBLICATION

Composition Helpers | Grammar Instruction | Proofreading | Publication | Social Writing | Style Editors | Word Processing

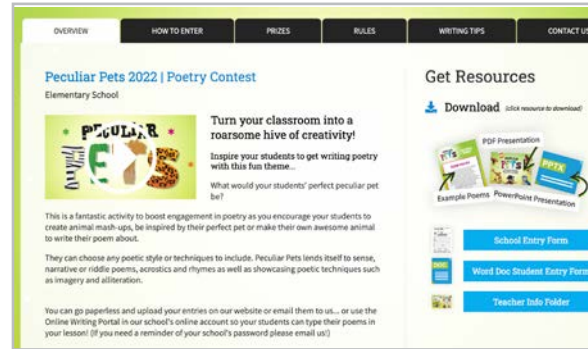


Teen Ink

teenink.com

This website and print magazine, going strong after over three decades, are “devoted entirely to teenage writing, art, photos, and forums.” Submissions are accepted year-round from anyone age 13 to 19. They consider short pieces, full novels, nonfiction, poetry, and book reviews. Registered users can comment on published pieces.

Similar: [Polyphony Lit](#)



Young Writers

youngwritersusa.com

Need a way to motivate students to write? How about a healthy dose of competition? This site offers contests to students from elementary to high school with the chance to appear in a book published by the Young Writers organization. Throughout the year the site promotes contests to be entered along with resources to support students in their quest to become a published author.

MORE PLACES TO PUBLISH STUDENT WRITING

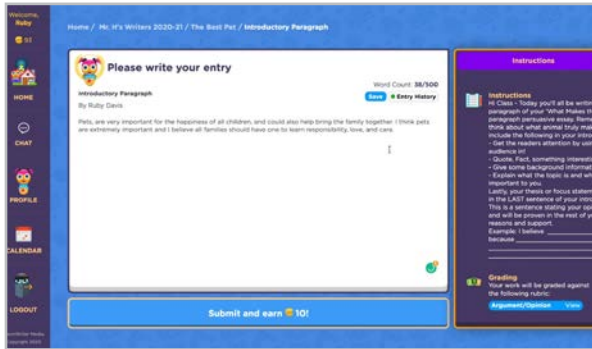
Organizations that publish student writing seem to come and go, so they're hard to keep track of. These two lists are a good starting point:

[The Best Student Writing Contests for 2022-2023](#)

[Out of the Classroom and Into the World: 70-Plus Places to Publish Teenage Writing and Art](#)

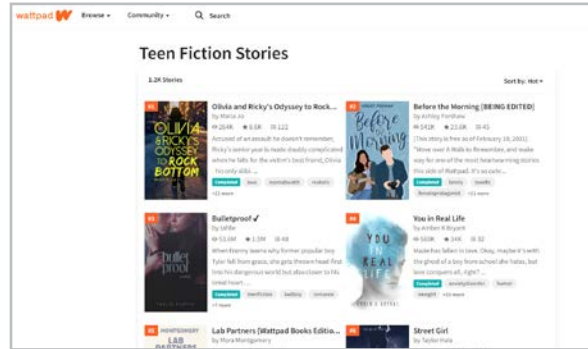
SOCIAL WRITING

Composition Helpers | Grammar Instruction | Proofreading | Publication | Social Writing | Style Editors | Word Processing



BoomWriter
boomwriter.com

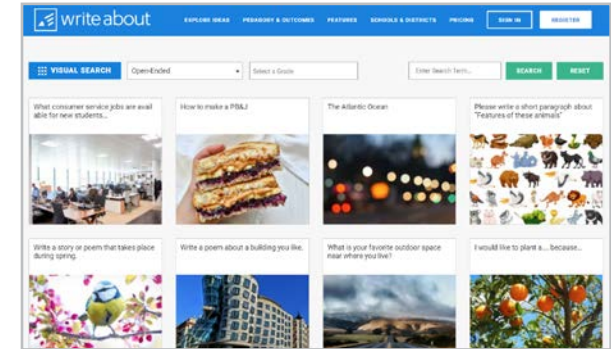
BoomWriter is a platform that lets students collaboratively write stories, vocabulary-based writing exercises, or nonfiction projects. As they write together, students vote on the best version of a contribution before moving to the next stage, which adds a bit of competition and fun to the writing process. Finished projects can be turned into printed books.



Wattpad
wattpad.com

In this massive online writing community, writers publish stories, novels, poetry, and tons of other genres, in whole or in parts. Community members can comment on the stories as they progress, offering feedback or just voting for them, which makes them more viewable to other readers and can lead to awards and book or film deals. Users must be over 13 and the site does contain adult content.

Similar: [Write the World](#)

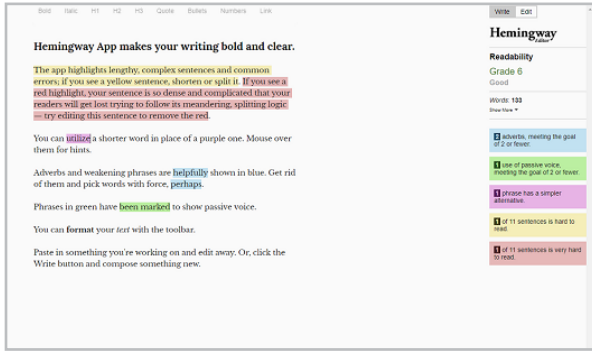


Write About
writeabout.com

Write About provides an online space for students to write on high-interest topics and get feedback from their teachers and peers. Starting with one of Write About's customizable writing prompts, students create original writing pieces, share their writing with classmates, then comment on each other's writing. The site also offers grammar practice exercises and skill-building activities to sharpen writing skills.

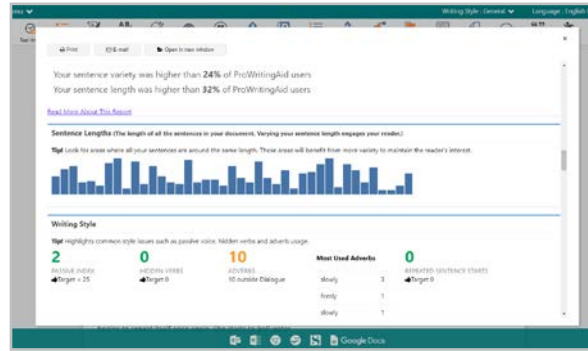
STYLE EDITORS

Composition Helpers | Grammar Instruction | Proofreading | Publication | Social Writing | Style Editors | Word Processing



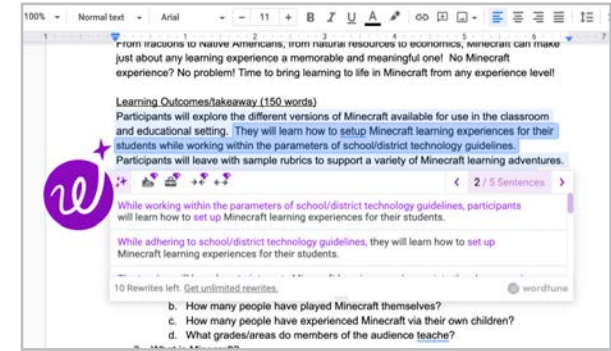
Hemingway Editor
hemingwayapp.com

Using artificial intelligence, the Hemingway App is programmed to identify things like passive voice, a high number of adverbs, flowery language, and long, rambling sentences. It’s definitely not perfect: The app may miss your intended meaning, and it doesn’t value your unique voice like you do. Still, it will point out a few places where you could be cleaner; the decision to revise is yours. [This review](#) takes you through the experience of using it.



ProWritingAid
prowritingaid.com

This incredible tool does a deep dive into the quality of your writing, looking at everything from passive voice to overused words, from the use of clichés to sentence variety. Just compose in the tool itself, copy and paste, or upload a document and you’ll get a summary report with all kinds of statistics about the strengths and weaknesses of the piece, plus suggestions for changes when you hover over highlighted places in the text itself.

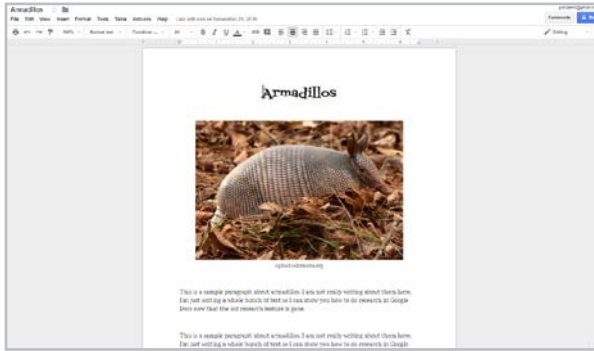


Wordtune
wordtune.com

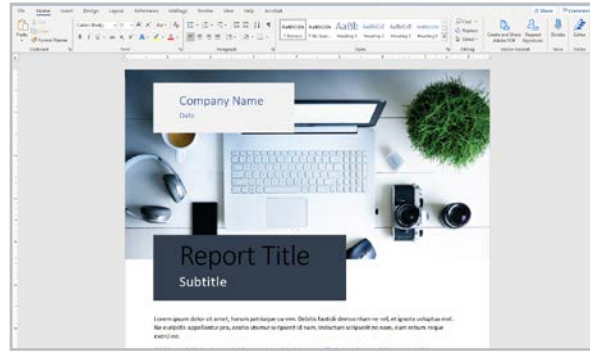
Using AI to fine-tune your own writing is what the Wordtune extension does best. It takes things beyond grammar and adjusts words and sentences for different settings or lengths. Downloading the free Wordtune extension in Chrome gives access to whatever writing you’re doing across a variety of websites and platforms.

WORD PROCESSING

Composition Helpers | Grammar Instruction | Proofreading | Publication | Social Writing | Style Editors | Word Processing


**Google Docs**docs.google.com

Built right inside Google Workspace, this cloud-based program has most of the same features as Word, including comments (try [this fantastic method](#) for giving fast feedback), the ability to have multiple users collaborate on the same document, [citation tools](#) that help you build in-text citations and a bibliography while you write, [voice typing](#), and a new integrated read-aloud tool.

**Microsoft Word**products.office.com/word

One of the earliest tech tools around, Word is still a solid choice for composing and formatting text, and in the last few years, it's gotten a lot better. Now that it's available through the cloud-based Office 365 system, users can [collaborate with others](#) on a document in real time, just like they would on a Google Doc. And Microsoft's [accessibility tools](#) make Word a powerful resource for all learners.

WORD PROCESSING TIPS

- When helping students learn to highlight words, have them start at the end of a word and pull back; it helps with control.
- Double click on a word to highlight it. Triple click to highlight the whole paragraph.
- Pasting from another doc? Remove any weird formatting by clicking this icon: 
- Ctrl + Shift + V or Cmd + Shift + V will allow you to paste and match the formatting of the Doc.
- Tired of your last name being flagged for misspelling? Add it to your personal dictionary. In Google Docs, open the Tools menu, click on Spelling and Grammar, and then Personal Dictionary. Add your word.
- Need your bulleted list to continue with paragraphs in between and do not want the numbers to start over at 1? In Google Docs: Click on the bullet of your new list. Open the Format Menu. Click on Bullets and Numbering. Choose List Options and click Continue Numbering.

THE TERMS

A

Google

Q-S

B

H-I

T-U

C

J-O

V-Z

D-E

Microsoft

F-G

P

add-on: similar to a browser extension, a small piece of software used to enhance the performance of another tool

affiliate marketing: a relationship in which one entity (like a blogger) gets a small percentage of sales from another company (like Amazon) when they send their audience to that company through an *affiliate link*

AI: *artificial intelligence*; the ability to perform tasks that normally require human intelligence. Tools like [AutoDraw](#) look at what a user is drawing and use AI to guess at the intended shape.

algorithm: a set of instructions telling a computer what to do. For example, if you search for the term “pizza” in Google, the site uses search algorithms to find the most popular results for that term. Lately, when people talk about algorithms, they are referring to the kind used by social media platforms. A site like Facebook uses complex algorithms to keep track of what people you’ve interacted with and what types of content you like so they can customize the experience for you, showing you more of what you like. Social media companies are constantly adjusting these algorithms, which can frustrate users. Example: “I never see your posts on Instagram! I bet they changed their algorithm again.”

Android: the operating system used for many non-iOS smartphones, such as Samsung Galaxy

app: (short for *application*) a software program. Any software, like PowerPoint, is an application, but app usually means a smaller-sized software with a limited job, like tracking calories, that typically lives on a mobile device.

app smashing: using multiple apps or tools together to complete a task

AR: *augmented reality*; a technology that uses apps to layer digital elements over real-life objects and photos; learn more in the [Virtual & Augmented Reality](#) section

ASMR: *autonomous sensory meridian response*, a physical sensation people experience when they hear pleasant tactile sounds. In recent years, ASMR videos — showing nothing but people brushing their hair, typing, whispering, or turning pages in a book — have exploded in popularity on YouTube. Upon first seeing these videos, you will probably think they’re pretty odd, but the calming effect they have on people is starting to get the attention of researchers. [Learn more here.](#)

asynchronous learning: a learning experience where participants engage at different times, such as watching a video and completing an activity at their own pace. This is the opposite of a *synchronous* experience, in which all participants engage simultaneously, like attending a live lecture via videoconferencing.

avatar: an image or icon, often illustrated, representing a person in a video game, in social media, or in a software program

backchannel: a secondary discussion that happens at the same time as a larger event

bandwidth: the amount of data that can be sent over an internet connection at one time

beta: an unfinished or “really good draft” version of a computer program or tool. When you hear that something is “in beta,” it means that it has all of its basic parts, but the kinks haven’t all been worked out yet.

bitcoin: one of the most recognized types of [cryptocurrency](#)

Bitmoji: a cartoon version of a person’s image, used in digital spaces. [Bitmoji](#) is the brand name of an app that creates these images.

blended learning: a teaching approach that combines traditional instruction with online learning

blockchain: a ledger or record of all [cryptocurrency](#) transactions that occur throughout the world

blog: short for *weblog*; basically an online diary, a series of posts that are updated regularly

Bluetooth: a technology that uses radio waves to let devices communicate across short distances wirelessly. A Bluetooth headset lets you talk on your phone without holding it up to your ear or using speakerphone.

bookmarklet: a bookmark stored in your browser that allows it to do a specific task; like a browser extension, but it won’t slow down your browser as much

bot: a computer program designed to perform repetitive tasks that would be time-consuming for humans, like looking for new pages online and indexing them for Google. Recently, bots have been created to impersonate humans on social media in order to influence public opinion on political issues. [Learn more here.](#)

breadcrumbs: small text paths usually found near the top of a web page that show how you got to where you are. Ex: A breadcrumb trail might say *Home > Books > Nonfiction*.

breakout room: a separate “room” to send participants in a larger videoconference meeting so that smaller groups can have a more intimate conversation

browser: short for *web browser*; software that lets you browse the internet. Popular browsers are Chrome, Safari, and Microsoft Edge.

browser extension: a tool added to your web browser that gives it new functions, like letting you quickly add an item to your [Evernote](#) notebook, or pin an item on [Pinterest](#)

buffering: pre-loading data into a separate area of memory so it can be accessed at a later time. When streaming a video, the service will *buffer* chunks of the video to prevent the video from lagging during playback.

BYOD: *bring your own device*; a policy in which students are allowed to bring their own cell phones, tablets, or laptops to school and use them during class to enhance learning

byte: a small unit of measurement for electronic data. Most files we interact with contain far more than a single byte of data and are measured in kilobytes (KBs) or megabytes (MBs).

cache: (pronounced *cash*; both a noun and a verb) a mechanism that stores recently used information so it can be quickly accessed later. Your browser will often cache recent web pages you've visited so the next time you visit them, it re-loads them from memory, rather than going back to the site and loading everything from scratch. This makes things faster. Often when people are having trouble with a website, they are advised to "clear their cache," which erases that memory and forces your browser to start fresh with the newest information from the site.

chatbot: a piece of software that conducts a text- or voice-based conversation "like a human being." When you call a company on the phone, you're often put through a phone tree by a chatbot. When you go to a site and a pop-up asks if you need help, that's usually a chatbot starting the conversation, although a real person may take over after a few minutes.

clickbait: a derogatory term used to describe attention-getting headlines designed to entice people to click over to a website, like "This secret will get you more women!" Often, the headline doesn't accurately represent the thing it leads to.

clickers: handheld, portable devices given to students in a classroom, allowing them to respond to questions and have their responses collected via radio transmission

cloud computing: using a network of remote servers (large systems like Google Drive, for example) to create, share, and store files, rather than performing these operations on a local network, such as your home computer or office network

cookie: a small text file containing information about you and what you're interested in, based on your browsing history. A cookie is stored in your web browser and is sent to websites you've already visited to help them customize your visit and to determine what ads you'll be shown on other sites. If I go to [Zappos](#) and look at a particular boot, even if I don't create an account, the next time I visit, that boot might be a featured product. I may also see ads for that same boot on other websites that run ads. That "magic" is cookies at work.

Creative Commons: a nonprofit [organization](#) in the U.S. whose mission is to make it easier for people to share creative work. Photos, videos, music, and other creative work that has a Creative Commons license is available for others to use in their own projects under certain conditions. Learn more in my article, [Teaching Students to Legally Use Images Online](#).

crowdfunding: using websites like [GoFundMe](#) and [Kickstarter](#) to raise funds for independent, often creative projects

crowdsourcing: gathering information from a large sample of people, usually by asking for input via the internet

cryptocurrency: a completely digital form of currency, such as bitcoin. Two advantages of cryptocurrency are that (1) unlike money, it is decentralized, passing directly from person to person, rather than being controlled by banks or the government, and (2) because transactions are encrypted, they are very difficult to counterfeit. [Learn more here](#).

dashboard: a term used by many platforms to describe the user’s “control center,” the place where you get an overview of your account and your activity within that program

deepfake: a form of media that has been manipulated with artificial intelligence to generate authentic-seeming audio, video, or imagery. See an example [here](#).

digital citizenship: the standards for etiquette, ethical conduct, and safe behavior while using technology

digital literacy: being versed in the terms and concepts associated with using technology

digital native: nickname for a person who grew up with technology — personal computers, internet access, etc.

DM: *direct message*. A message that is sent through social media platforms, but in private. A person’s followers can’t see a direct message; only the person it’s sent to can read it. When someone says they will “DM” someone, they are planning to send a direct message.

document camera: a tabletop camera that displays onto a screen whatever activity is happening underneath it.

domain name: the part of your URL that identifies your IP address. (In the URL <http://www.cultofpedagogy.com>, the domain name is *cultofpedagogy.com*.)

doxing: publicly broadcasting private or identifying information about a person with an anonymous online presence in order to expose their identity

e-commerce: buying and selling items through the internet

EdCamp: a type of [unconference](#). A “TeachMeet” is basically the same thing.

embed: to insert one item, like a video, into another item, like a website, in such a way that it retains all of its functions and can be operated from within that second item. So an embedded video will play on the website. The symbol for embedding looks like this: < >

emoji: small pictures that can be inserted into texts and other digital communication. (By the way, some publishers agree that it’s okay to use *emojis* as the plural for *emoji*, while others feel strongly that the word *emoji* is both a singular and a plural, like the word *sheep*. Read [this post](#) from the Grammarly blog for more information.)

emoticon: also called a *smiley*; a sequence of characters made to represent a facial expression or some other visual image, like this: :-). See this [List of Smileys and Emoticons](#) for examples.

extension: see [browser extension](#)

external hard drive: a small device, somewhere between the size of a wallet and a paperback, where you can store electronic files (documents, photos, videos, etc.). These come in handy when you need extra storage space on your computer or you want to back up your files outside of your computer.



external hard drive

file extension: the suffix at the end of a file name that tells you what type of file it is. The file extension for a PowerPoint file is *.ppt* or *.pptx*. The extension for a JPEG image is *.jpg*.

firewall: network security device that monitors incoming and outgoing activity. It allows or blocks traffic depending on whatever rules are set for your network. So for example, you may not be able to access social media sites at work because they are blocked by your district's firewall.

Flash: an animation software that has been discontinued. Sometimes you may have trouble running parts of a website because your Flash player is not installed or up-to-date.

flash drive: a small storage device — not much bigger than a stick of gum — that plugs into your computer's USB port and allows you to store and transport electronic files; also called *thumb drive*, *jump drive*, *data stick*



flash drives

gamer: a person who regularly plays video games, especially if they do so competitively

gamification: a way of motivating students to learn by adding elements of games (especially video games) into the learning environment, such as “leveling up” and earning badges for reaching certain milestones

GB: *gigabyte*; a unit of measurement for electronic data equal to 1,000 megabytes

1,000 KB = 1 MB

1,000 MB = 1 GB

1,000 GB = 1 TB

genius hour: one hour per week (or per day, depending on a teacher's schedule) given to students to pursue their own interests; also see 20 percent time. To learn more, read [Your Top 10 Genius Hour Questions Answered](#).

GIF: *graphics interchange format*; a widely used image format, especially for simple graphics. An animated GIF is a set of images coded to display in a specific order, giving the appearance of movement. To make one of these yourself, visit our [Animated GIFs](#) section.

graphics card: a piece of computer hardware responsible for producing the images on the computer. These are built into most laptops and standard computers, but users who work with a lot of video or gaming often want to upgrade to a more powerful graphics card or get one that performs better, which is more expensive. Also known as a *graphics processing unit* or *GPU*.

GOOGLE CHEAT SHEET

Google offers an incredible collection of tools, most of which are free. Because new tools are created all the time, it can be a challenge to keep track of them all. This chart shows you how Google’s most well-known tools fit together. To learn more about the entire Google product line, [visit this page](#).

Google Workspace: All of the apps offered by Google (listed below). Formerly known as G Suite. The education version of this is called Google Workspace for Education.

Arts & Culture: platform for exploring art collections and doing hands-on art experiments

Blogger: a blogging platform

Calendar: a personal online calendar

Chat: (formerly Hangouts) a video and written chat system embedded in Gmail. Chat rooms are called Spaces.

Classroom: a learning management system using Google Workspace for Education. Google Assignments offers some of Classroom’s features to other LMS platforms.

Docs: word processing

Drive: Google’s cloud storage service

Earth: a “satellite geobrowser” that lets you look at any point on Earth up close and create, collaborate, and share travel stories and maps

Forms: forms and surveys

Gmail: email

Jamboard: a collaborative whiteboard tool

Keep: a collaborative note-taking tool

Maps: a mapping and GPS tool

Meet: a videoconferencing tool (like Zoom); now includes features from the former Google Duo

Photos: cloud-based photo storage

Sheets: spreadsheets

Sites: website creation

Slides: presentation

Translate: a language translation tool

YouTube: video platform owned by Google.

YouTube Kids is a safer version for kids.

OTHER GOOGLE TOOLS & RESOURCES

Play Store: website and app where users can download apps and tools

Chrome: Google’s web browser

Chromebooks: laptops that run on Chrome and are loaded with Google apps

Chromecast: device that lets you stream from phone, Chromebook or Chrome browser

Scholar: an academic research tool

AR & VR: a collection of augmented and virtual reality resources

FREE CURRICULA

Applied Digital Skills: teaches practical skills like resume creation with Google tools

Be Internet Awesome: digital citizenship and safety for kids

CS First: teaches students to learn coding independently; designed for teachers with little to no computer science experience

hashtag: a word or phrase combined with the hash or pound symbol (#), creating a unique search term that can be more easily found on social media platforms like Instagram and Twitter. The hashtag #5aDay is used when people post things related to getting more fruits and vegetables in their diets.

HDMI: *high-definition multimedia interface*; a common type of cable for transmitting digital video and audio from a source (like a computer) to a monitor, screen, or projector.

hotspot: a place that has an accessible wireless network (Wi-Fi). This might be a restaurant, a library, even a park. Learn more about hotspots in the [Troubleshooting](#) section.

HTML: *hypertext markup language*; the language used to create web pages. Think about a website as a stage performance. Everything you see on the screen is “on stage.” HTML is like the script, stage, and lighting directions for the performance. For example, to make a word appear in italics, you’d add the `<i>` tag around it, like this: `<i>word</i>`.

http/https: *hypertext transfer protocol, secure hypertext transfer protocol*; a set of rules for transferring files on the internet. The “s” in https indicates that your information is being encrypted — or changed into indecipherable

code — as it is being transmitted, to keep it secure. Online shopping sites will often use https as a default setting.

hybrid learning: a mix of in-person learning and online instruction. Some disagree on whether this is the same as blended learning. The main difference seems to be that in many hybrid experiences, some learners are participating remotely the whole time, while others participate in-person. Learn more [here](#).

HyperDoc: an interactive document (usually created in a Google Doc) that organizes activities and tasks for students to complete for a lesson or unit. Learn more about these in [How HyperDocs Can Transform Your Teaching](#).

hyperlink: (Also called a *link*.) Most often, a line of text — often underlined — that has been created to be “clickable.” When a reader clicks the text, they are taken to another location. So here, the word [cover](#) is a hyperlink to the front cover of this book. Images can also be hyperlinked.

icon: a small picture representing a website, software, tool, or concept (like a [Wi-Fi](#) icon); see our section of resources for finding images and icons [here](#).

infographic: A visual or graphic representation of information, using small images or icons as well as more traditional graphs and charts to represent data. In recent years, these have been specially designed for consumption on the internet, so some are visually quite long, requiring the reader to scroll through them almost like a mini-website. See our section on [infographics](#) to find tools that help you make these.

iOS: iPhone operating system; the [operating system](#) that powers Apple devices such as the iPad and iPhone

IoT: *Internet of Things*; a network of devices or objects that are embedded with some kind of electronic sensors that allow them to be connected to each other wirelessly. To learn more, see [this article](#).

IP address: *internet protocol address*; a unique identifying number given to every computer in the world

ISP: *Internet Service Provider*, a company that provides internet to homes and businesses

JavaScript: a computer programming language that is built into most [web browsers](#) to make them interactive

JPEG: an image file type that is preferred for photographs. As a [file extension](#), it is abbreviated to JPG. To learn more about image file types, read [this article](#).

Kindle: Amazon's e-reader, which can hold hundreds of full-length books on one device

KB: *kilobyte*; a unit of measurement for electronic data equal to 1,000 bytes; see conversion chart below

1,000 KB = 1 MB

1,000 MB = 1 GB

1,000 GB = 1 TB

link: an abbreviation for *hyperlink*

Linux: an operating system (like Windows or Mac), which is the software that manages all the resources on a device. To learn more, read this post: [What Is Linux?](#)

MB: *megabyte*; a unit of measurement for electronic data equal to 1,000 kilobytes; see conversion chart at left

meme: a piece of media that spreads through the internet. The most common type is an image with a caption. [This article](#) offers some examples.

microblogging: a form of blogging consisting of short, frequent blocks of content, rather than long ones. Twitter, along with other [social media](#) platforms like TikTok, are examples of microblogging platforms.

mobile device: a portable device like a cell phone, smartphone, or tablet

mobile-responsive design: an approach to website design that allows them to change for easier reading when viewed on a mobile device

MOOC: *massive open online course*; a free online course, which can be taken at any time, open to anyone with internet access. [Coursera](#) is one popular platform for finding a MOOC.

MP3/MP4: an MP3 is a type of audio file; an iPod is a popular type of MP3 player. An MP4 is a type of video file.

net neutrality: the idea that internet service providers should treat all traffic coming through their services the same, rather than offering faster delivery for websites willing to pay a higher price. Learn more in [this article](#).

NFT: *non-fungible token*; a unique and non-interchangeable unit of data. See our discussion in [Wonderings](#).

NSFW: *not safe for work*; content that may contain nudity or other inappropriate content

one-to-one (1:1): an arrangement in which there is one device or computer per person

open educational resources: instructional resources that are free for anyone to use, modify, and share with others. To learn more, read [A Closer Look at Open Educational Resources](#).

open source: freely available to anyone who wants to see or modify for their own uses; [WordPress](#) is an open source software

operating system (OS): basically, the boss of a computer; the software that supports all of a computer's basic functions. Windows and Mac OS are two popular operating systems.

MICROSOFT CHEAT SHEET

Microsoft offers an incredible collection of tools, most of which are [free for educators](#). This chart shows you how these tools fit together.

Microsoft: The whole company. **Microsoft 365:** A cloud-based subscription service.

Office: Microsoft’s suite of productivity tools, listed below.

Office 365: the same set of tools, but through a subscription that provides regular updates of the products; educators can get 365 for free.

Excel: spreadsheets

Forms: a survey creation tool

Learning Tools: a set of tools, like Immersive Reader, that improve accessibility in many Microsoft products

OneDrive: cloud storage

OneNote: note-taking

Class Notebook: a OneNote feature that allows teachers to connect classes of student OneNote notebooks together

Outlook: email and calendar

PowerPoint: slideshow presentations

Publisher: desktop publishing

Skype: video chat app that is now part of Microsoft

Stream: video streaming service; allows an organization to house all videos in one place

Sway: presentation software

Teams: team communication and learning management system

Translator: a language translator

Word: word processing

OTHER MICROSOFT TOOLS & RESOURCES

Windows: Microsoft’s operating system

Edge: a web browser, like Google Chrome

Bing: a search engine that runs inside Edge

Surface: a hybrid laptop and tablet

Xbox: a gaming system

Video Editor: video creation and editing built into the Photos tool in Windows 10

Flip: (Formerly Flipgrid) video response tool; now part of Microsoft

Minecraft: video game; now part of Microsoft

MakeCode Arcade: a learn-to-code program

PBL: *problem-based learning* or *project-based learning*; an instructional approach that has students learn by solving real-world problems or producing real-world projects in authentic contexts. This approach has grown in popularity as technology becomes more widely available because it gives students more tools for these kinds of tasks.

PC: *personal computer*; generally refers to any computer designed for home use, but most often used to differentiate between Apple’s Mac computers and those that run on the Windows platform (PCs)

PDF: *portable document format*; a file format that preserves the exact look of a file without using the original software, so the file size is smaller than the original; sort of like a picture of each page of the document. Most word processing, spreadsheet, and presentation programs have a “Save as PDF” option that allows users to quickly save a copy of the document in PDF form.

petabyte: 1,000 [terabytes](#) (pronounced *pet*, not *peet*)

photoshopped: used to describe a photo manipulated by any kind of photo-editing software (such as [Adobe Photoshop](#)). When looking at a picture that seems too perfect or fake in some way, a person might say it looks *photoshopped*.

pixel: a tiny unit of illumination on a display screen. The more pixels an image has, the more clear and realistic an image looks. When something looks *pixelated*, the individual pixels are visible and the image looks blurry.

platform: the environment in which a piece of software is designed to run; this can be an operating system or even a piece of hardware where the software runs

PLC: *professional learning community*; usually, a local group of teaching colleagues — such as a grade-level team or a subject-area department — who collaborate regularly to analyze student work and data, plan lessons and units, and develop new instructional approaches

PLN: *personal learning network*; a person’s individual network of other educators, met in person and online, with whom they collaborate and share ideas. Educators on Twitter often refer to people they are connected to on Twitter as their “Twitter PLN.”

plug-in: a small program added to an existing program to improve its functionality. For example, a blog can have a plug-in that allows the blogger to add social network sharing buttons (Facebook, Twitter) to the end of blog posts.

PNG: *portable network graphics*; a type of image file that is preferred for graphics that are not photographs. To learn more about image file types, read [this article](#).

public domain: available to the public and not subject to copyright. Creative works such as art and music that are in the public domain can be used without having to give credit or pay royalties to the creator. These are often marked with the [CCO symbol](#), indicating that they can be used freely by anyone, for any purpose.

QR code: *quick response code*; an image, like a bar code, that links to a specific URL, text message, or other piece of information when the code is read by a device with a scanner; for more information, see the [QR Codes](#) page

RAM: *random access memory*; temporary storage a computer uses for running programs and software; if your computer is running slowly, it may need more RAM. This is different from disk storage, which is used to save files. RAM is only used when you are running programs on your computer.

rich text format (RTF): a file format for word processing documents that allows text formatting such as bold, italics, and underlining. Most common word processing documents support rich text, even if they don't have the .rtf extension.

RSS: *rich site summary (or really simple syndication)*; a format for publishing regularly changing content. If you subscribe to a website's RSS feed through a feed reader like [Feedly](#), you will be able to view regular, short summaries of new content from that site as soon as it is published.

sans serif: in typography, a font that does not have decorative "tails" on the ends of letters. The font used in this definition is a sans serif font.

screenshot: an image taken of the whole screen of your computer or other device

search engine: software that allows users to search for information on the internet; popular search engines are Google, Bing, and Yahoo.

SEO: *search engine optimization*; the process of improving a website to increase the quality and quantity of people visiting it. "If you want your website to be successful, you have to pay attention to SEO."

serif: in typography, a font that has decorative "tails" on the ends of letters. **Georgia** is a serif font.

SIS: *student information system*; a platform that helps schools manage student data, like grades, attendance, and other student records. A popular SIS program is [PowerSchool](#).

smartphone: a cell phone (like the iPhone) that can do many of the things a computer can do: surf the internet, use email, and use apps that enable it to perform tasks like storing grocery lists or playing games

SMS: *short message service*; the formal term for text messaging

spam: messages sent on the internet or through email to lots of people, usually for the purposes of selling something

story: a sequence of photos or short videos placed on a [social media](#) platform like Instagram or Facebook; these are usually temporary and disappear after 24 hours.

subreddit: a discussion forum dedicated to a specific topic on [Reddit](#)

synchronous learning: a learning experience where participants engage at the same time, such as attending a live lecture via videoconferencing. This is the opposite of an *asynchronous* experience, where participants engage at different times, like watching a video and completing an activity at their own pace.

tablet: a flat, hand-held, mobile computer, usually about the size of a medium-to-large book, that has a touchscreen; some examples are Apple’s iPad and Microsoft’s Surface

tag: (n) a label attached to a photo, blog post, or other file as a way of categorizing it, making it easier to search for items with common tags; (v) to label an item with a tag

TB: *terabyte*; a unit of measurement for electronic data equal to 1,000 gigabytes; see conversion chart below.

1,000 KB = 1 MB

1,000 MB = 1 GB

1,000 GB = 1 TB

TeachMeet: a type of *unconference* (see definition at right)

tethering: a method for providing internet access to a computer or other device by attaching a mobile phone to it and borrowing the phone’s internet capabilities; learn more in the [Troubleshooting](#) section.

thread: a string of messages that make up a conversation on social media, usually between two or more people but sometimes built by one person on their own

touchscreen: a display screen on a computer, tablet, or smartphone that allows users to input information and interact with the device by touching the screen

troll: slang term for a person who comments in online spaces with the primary intent of causing trouble, hurting feelings, starting arguments, or harassing others

20 percent time: similar to [genius hour](#); the practice of giving students 20 percent of the allotted instructional time for pursuing their own interests. To learn more, read [What is 20 Percent Time?](#)

unconference: a grassroots professional development conference organized by educators and comprised of presentations given by the attendees themselves. EdCamp and TeachMeet are two popular unconference movements in education. To learn more, read [Why Every Teacher Should Attend an Unconference](#).

URL: *uniform resource locator*; the full “address” of a website. (Example: The URL for the U.S. Department of Education is [http://www.ed.gov/.](http://www.ed.gov/))

USB: *universal serial bus*; a type of plug that lots of computer-related devices use. It’s probably what’s on the end of your [flash drive](#). A USB port is the place on your computer where you plug in a USB connector (the silver part). Wherever you see the symbol (below) on a plug or port on your computer, that’s USB.



USB symbol

UX: *user experience*; UX design, a [rapidly growing career field](#), is the process design teams use to make products easy and enjoyable to use. “I use that website all the time, but it has terrible UX.”

VoIP: *Voice over Internet Protocol*; a way of providing phone service via an internet connection

VPN: *virtual private network*; a way to securely connect to a network outside of your local network, which makes all of your activity private. Why would you want to do this? Read more [here](#).

WAV file: a type of audio file

Web 2.0: the “second generation” of the World Wide Web, when the internet shifted from content that came from official organizations and institutions to content generated largely by users. Watch [this video](#) to learn more.

web browser: also known as *internet browser*; a type of software that allows users to use the internet; popular browsers are Chrome, Firefox, Microsoft Edge, Safari, and Opera.

webcam: a camera built into or attached to a computer usually used for recording a person talking into it

webinar: a blend of *web* and *seminar*; a live event that happens online, rather than in person

Wi-Fi: a technology that allows computers and other devices to connect to the internet wirelessly; a *Wi-Fi hotspot* is a physical place that offers wireless internet service



a Wi-Fi icon

wiki: a website that allows multiple editors to edit its content. [Wikipedia](#) is the largest and most popular wiki on the internet.

WYSIWYG: (WIZ-EE-WIG) *what you see is what you get*; a type of web editor in which elements are placed exactly where the builder wants them, as opposed to writing instructions out in code, then checking to see how they look online. [Wix](#) has a WYSIWYG editor, which is why it’s recommended for people who have limited web design experience.

Zoom bombing: when an uninvited person enters a videoconference and shares disturbing or distracting content. [This article](#) outlines steps that can be taken to prevent these attacks.

ZIP file: a file that contains a collection of other files that have been compressed — or reduced in size — to make them easier to send; to learn more, read [How to Make a Zip File](#) and [How to Open a Zip File](#)

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This book started as an idea for a blog post.



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