Technology in Action Guide

Elementary Digital Portfolios

Definition

A digital portfolio is a computer or web based collection of student performance over time. Portfolios provide a window into student learning. A portfolio should showcase both student achievement and student learning or growth. To demonstrate growth, a portfolio will often include similar work done over the course of several months or years.

The student portfolio should include content chosen by the student with the clear understanding that the items must include examples of their best performances, demonstrations of achieving a particular objective, and examples showing personal and academic growth. The content should include a wide range of skills and abilities to provide clear demonstration of what the student knows and understands about their ability.

One of the most important elements in a portfolio can be the student's reflection on their work. Students should include reflections on each performance to clarify why that selection is included in the portfolio. This is perhaps the most valuable part of the portfolio, since it provides a much clearer window into the learning of each student.

Standards Connections

ELA: Speaking and Listening standards SL.2, SL.4, SL.5
Fine Art: Personal Portfolio Standards VA.PR4, VA. PR5
Math: Practice Standard 4 Modeling with Mathematics

Social Emotional Learning: Standard Goal 1– Developing Self Awareness —Goal 1—Develop Self-awareness related to academic goals
Social Science: Standards for Developing Inquiry Skills

Uses

Student Led Conferences— Creating a digital portfolio of student selected work to present during a student-led conference allows students to take ownership of their learning. Not only can students share where they excel in their academics, but they can reflect on their growth from the beginning of the quarter and even discuss where they may still be struggling by sharing the artifacts. Teachers can guide the selection of the portfolio artifacts so that the items included reflect the whole academic and social picture of the student.

Group Projects —Using a portfolio during a project to document and reflect on the parts of the process and tasks completed will help the students take time to understand how the group is working together and how the goals are being achieved. This will help students to make decision son which direction to take the project. Plan tasks and establish roles. Being able to look back on the process as a whole will also allow the group to determine what worked well and where they could make changes when they are working on another project.

Resources—Digital Portfolios

Seesaw— - This is a student driven digital portfolio system that allows students to independently document what they are learning at school. Educators create classes within the platform. Students can be entered into the classes or teachers can give a class code to the student to "self join". Students can capture learning with pictures and videos (currently just iOS for videos), import documents and add comments. Student work can be shared with the class and other students can comment. (Educators monitor the comments prior to being displayed to the class on the "Facebook like feed".) The Seesaw platform includes the following features: http://web.seesaw.me/

- ◊ Google classroom integration
- ◊ All mobile device apps (Kindle Fire!)
- ◊ Chromebook compatible
- ◊ Multimedia tools built-in
- ◊ Integration with 100s of apps
- ◊ Free parent access
- ◊ Class blog (can be public or private)
- ◊ Printing with custom QR codes
- ◊ 2 teachers can share a class
- ◊ Teachers can have 10 classes
- ◊ Portfolios can be downloaded to a CD
- ◊ Many webinars for training

Google Slides and Microsoft PowerPoint

Google Slides and **Microsoft PowerPoint** both make great digital portfolio choices. Google Slides will integrate with Google Classroom and be accessible from any device online. Microsoft PowerPoint can also be save online using Onedrive. Students can create a file when a project or semester starts and continually add artifacts as they progress through the semester. Multimedia files can be added to each of the program's slides from to other platforms to share video and audio feedback or reflections. Embedded content from other website platforms can be added to the slides as well, such as blog posts, timelines and other student created content. Microsoft PowerPoint presentations can be converted into a Sway video when completed and shared with anyone via email and watched on any device. Google slides can be saved as a video slideshow and played online.

Mobile Device Apps (All iOS unless noted)

The iOS and Android standard camera app can allow picture and video recording. Students can record each other holding up their work and reflecting or hold the device while pointing to the work and record their reflections. The file can be transferred from the device either via a cable or WiFi. Students could record their work with a partner or group as well.

Show Me app is a recordable white board where students can draw or write on the board while explaining their work. This is a great way to show student mastery with student create math tutorials. Educators can upload images that students can write on, show or reflect on and engage with the content. http://apple.co/2eZJ1fq

Trading Cards by Read-Write-Think allows students to create trading cards in many categories. A portfolio may contain a trading card about the student and what challenged them the most or they learned the most about over the course of the semester/quarter. The card could also highlight the student's biography. All Devices www.readwritethink.org

Websites and Online Resources

Screencast-o-matic allows users to record on-screen activity and audio from a computer microphone or computer sound. Students can open their MS Word or Google Doc essay or report and record their reflections or process on how they developed their story. The video can then be saved and imported to the portfolio. The same process could be done for any computer generated work, modeling how to research or conduct a search online, or doing a science experiment with an interactive model and explaining why the reactions are occurring. https://screencast-o-matic.com/

Animoto is a video design platform that creates slide shows with music and built-in video styles. Many of the layout and creation tools are taken care of by the program so that the user only needs to "drag and drop" the photos. The resource includes an option for education that removes the watermark and increases the time limit allotment from the free version. Educators must first register for the free version, then "apply" for the upgraded educator version. https://animoto.com/

PowerToon allows users to create animated videos and presentations. The platform uses a "drag and drop" interface. The platform enables voices to be scripted recordings with the characters on the screen. Students manage where the characters move during the animations. The free account allows for 5 minute videos with the PowerToon watermark in the bottom corner of the video. Students can use this platform to reflect as a group on how a project was successful or maybe needed some revision. The characters could role play choices the team or p3erson made during the activity and what was learned from the students involved. https://www.powtoon.com/

ThingLink creates an interactive digital graphic by adding "dots" that pop up text or connections to websites, videos or more graphics. Users can upload photos, documents or any graphic and then add points anywhere on the item to show items of interest or further exploration. Within a portfolio students might create a Thinglink for an art project or science model. After taking a photo of the artifact students could identify areas within the media of an art project and make connections to the inspiration or selection of colors. Students connecting to a science model may have linkable items to the research they have based their data or maybe an interactive experiment proving their hypothesis. https://www.thinglink.com/edu

Word Cloud Creations

Creating word clouds from a student essay or story shows a graphic representation of the student's thoughts and stories. This can add an artistic expression to the digital portfolio. As the story writing increases so will the development of the word clouds. Here are three online choices for creating word clouds:

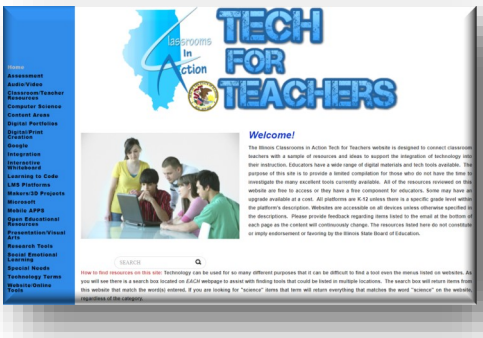
Taxedo—Clouds can be formed in shapes from basic to animals. http://www.taxedo.com/

Wordle—color selections, horizontal and vertical orientation of the words are some of the choices on this platform. http://www.wordle.net/

Drive Word Cloud—Chrome alternative for ChromeBooks. http://wordcloud.booogle.net/

Even More Resources

There are many technology resources to support content curation for digital portfolios. The ones listed above are some of the best suited for K-5 student ability levels. Be aware that technology companies can often change over time and as of the printing of this document all resources are current and available. To find more resources and the latest up-to-date technology to support technology integration, please visit www.ilclassroomtech.weebly.com.



- ◊ Assessment tools
- ◊ Audio/video tools
- ◊ Content area support
- ◊ Digital portfolios
- ◊ Computer science
- ◊ Learning management systems
- ◊ Mobile apps
- ◊ Research tools
- ◊ Social Emotional Learning
- ◊ Technology terms

Technology in Action Guide

Elementary English Language Arts

Practice Standards Connections

READING	WRITING
Key ideas & details *Craft & structure* *Integration of knowledge & ideas* *Range of reading & level of text complexity*	*Text types & purpose* *Production & distribution of writing* *Research to build & present knowledge* *Range of writing*
LANGUAGE	**SPEAKING & LISTENING**
Conventions of standard English *Knowledge of language* *Vocabulary acquisition & use*	*Comprehension & collaboration* *Presentation of knowledge & ideas*

Reading Tools

NewsELA has news articles that can be searched by topic and then printed in different Lexile levels. The same article on Lions can be printed in Lexile level 450 through 950 so that all students can read the content in a level that is comfortable for them and then be able to participate in a project or conversation on the subject of the article. Educators can also create text sets to assign to a class, create quizzes and include writing assignments.
https://newsela.com/

EPIC! has FREE elementary level eBOOKS!!!! Educators can create a free account with 36 students each. Students can check out books and read them on iOS or Android devices, ChromeBooks or any internet browser. Early Readers, Chapter Books, Non-Fiction, Read-to-Me Audio, and more. Educators need to sign up at the link provided here and choose the "get started" button within the picture. This is not the standard sign up. You will receive an email saying you have an educators account. If you receive an email that says "trial", call them to change to educator's account.
https://www.getepic.com/educators

Natural Readers is a text to speech online platform that converts any written text into spoken words. This web free version allows unlimited usage of the "free voices", supports PDF, Docx, RTF and Txt documents. Users can also Copy/Paste text into the box and select the play button at the top. There are 18 English (American and UK) voices, 8 Spanish, plus many more on the FREE platform. There are also 14 different "speeds" that can be set.
http://bit.ly/2gIkC1I

ReadWorks Digital is the partner resource to ReadWorks.org platform that offers reading comprehension support. The resource works on Windows, Macbooks, Chromebooks and iOS devices. Included on the website are Nonfiction and literary articles, Question sets, Vocabulary support, Paired Texts, Step Reads, Audio versions of articles, and an Article-A-Day™. http://digital.readworks.org/

Storyline Online is a website that incorporates the idea that reading to children has been repeatedly shown to improve their reading, writing and communication skills, logical thinking, concentration and general academic aptitude, as well as inspire a love of reading. The SAG-AFTRA Foundation records well-known actors reading children's books (James Earl Jones reading To Be A Drum) and makes graphically dynamic videos so that children around the world can be read to with just the click of a Storyline Online video book image. New books are added periodically. The offer alternative players if your school blocks YouTube, just select the "players" button on the top left of the page to choose. http://www.storylineonline.net/

Learn Out Loud is a platform that has free audio and video titles of literature in contemporary, classics, literary history, drama, poetry, and short stories to name a few. Listen to the Scarlet Letter or the Chronicles of Narnia read from the voice of an actor or the author themselves will give a new voice to the story. Most of the files can be downloaded and played later, all can be streamed.
http://www.learnoutloud.com/Free-Audio-Video/Literature

Language Tools

WordsWithFriends-EDU the game now allows students to play with their classmates. Educators create a closed classroom that only students with the class code can enter. The platform also has a dictionary component so students can check to see if what they want to play is actually a word or verify the meanings of words played by their classmates. This is an app for iOS and Andriod, but can also be played on the computer so ChromeBooks and laptops will work as well. Educators can also setup a "community" class and invite parents to play as well. https://wordswithfriendsedu.com/

Vocabulary.com this is a smart dictionary with an adaptive learning game that will have students mastering new words in no time. Educators can sign up for a free account and create as many classes as they need. The platform has ready made vocabulary lists from literature, historical documents, speeches, test prep, and news. educators can edit those lists or create lists to study. The free version has limited tracking and statistics, but educators are able to monitor how the students are doing and what words they are struggling with. Schools and districts have the option to pay for an EDUCATOR EDITION. https://www.vocabulary.com/

Writing Tools

Little Bird Tales is a digital storytelling and lesson creation site intended primarily for kids in Pre K - 6th grade. Users can create stories, reports, interviews, podcasts, interactive lessons, etc. using their own photos, drawings, jpg images, text, and voice. The tales and completed lessons will playback in a slideshow style format, with audio (if recorded). Educators have a free account and can share the created books via email or as a "public" book. No downloads of the created book is available unless the account is a paid account. Currently the cost is $24.99/ year for 1 educators and 20 students. https://littlebirdtales.com/

Storybird is an online writing platform that educators can create a class account and manage students where student emails are not required. Students can create stories/books using artwork/graphics provided by artists curated from Storybird. Books can either be simple "picture" books (K-5) to Long form Chapter books (5-9). Storybird does have a monetary component with the ability to purchase the books that the students have created. This is also the only way to "print" off the work that has been created by the students. PDF printing currently cost $1.99 per story or by "credits" earned by parents purchasing books. ($12.99 and up) https://storybird.com/

WriteReader is an ebook creator for students that haven't even started writing yet. Students insert a picture, either by taking a photo with a tablet or webcam, type how they think the words are written and then the "adult" type under their words the correct words. Students can also record themselves saying the words on each page. These books can be created online, or using an iOS / Android device. Ebooks can be shared via sending the link in an email. The books are hosted online and can be marked as private library. https://writereader.com/

Rhyme Zone is a simple platform that allows users to input a word or phrase, select search and then get a return words or phrases that rhyme or nearly rhyme. There are also options for synonyms, antonyms, homophones and many other choices. There are other advanced features available also. No login is required to use this platform.
http://www.rhymezone.com/?loc=bar

Pobble 365 is a Picture a Day story starter with additional resources. The pictures are magnificent and thought provoking and come with activities that can be either shared on a projector or downloaded in the provided PDF's. Educators can also browse previous days photos and content if they are looking for a specific topic or concept connection. Below each photo there are sections with activities. http://www.pobble365.com/

Speaking and Listening Tools

Next Vista for Learning provides a library of free videos made by and for teachers and students everywhere. All content is licensed under Creative Commons Attribution. There are over 1800 videos on the website. Students can check on the latest "video challenge" to get ideas to create an entry and join the community. http://www.nextvista.org/

Padlet is a simple way to create and collaborate. It works like a sheet of paper where uers can put anything (images, videos, documents, text) anywhere, from any device (pcs, tablets, phones), together with anyone. **New free accounts only have 3 boards, but can be redone to a new board. https://padlet.com

School Tube is a video platform for students and teachers to upload video creations. School Tube offers suggested educational websites that houses content for classrooms. This platform provides opportunities for students to share video work with an "authentic audience" in a controlled privacy environment. Many schools share daily news broadcasts and PSA videos. http://www.schooltube.com/

Haiku Deck is an online presentation slide creator that works on all platforms, There is also a ChromeBook and iPad app. Everyone can have a free account, however all slide decks created on the free account are public and can be seen and are searchable, so caution to what information the students are posting. Educators can create paid accounts that are private and have more options, currently the cost is $5/mo. https://www.haikudeck.com/

edublogs allows for educators to create a class account and control the postings of the students. Students are also not required to have email accounts. *****UPDATE 2/2/2017 EduBlogs is now complete FREE**** All accounts now have complete access to all resources including more space, templates, teacher controls, privacy controls...etc. This makes EduBlogs a GOTO platform for classroom blogging sites for early elementary through high school! http://edublogs.org/

Blabberize is a platform that can be used to present information in a whimsical way. Whether it is telling a story that a student wrote in English class or retelling a tale of war from 1812 from a llama? or maybe a group of sheep? Students can take any photo, "cut" around the mouth, record their voice reading or saying anything and then Blabberize will do the rest. The platform will sync the cutout to match with the words being spoken and "talk" when played back. All videos can be saved and shared either embedded or to a hard drive/portable memory device.
http://blabberize.com/

Even MORE Resources

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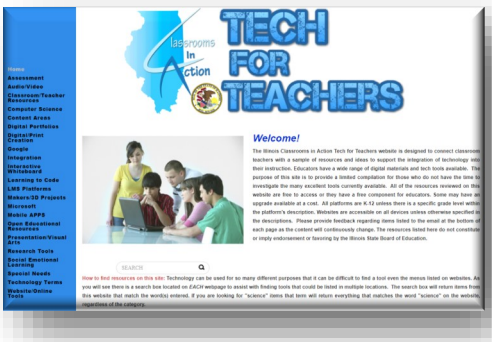
- Computer science
- Learning management systems
- Mobile apps
- Research tools
- Social Emotional Learning
- Technology terms



Technology in Action Guide

Elementary Mathematics

Practice Standards Connections

MP1—Make sense of problems and persevere in solving them.
MP2—Reason abstractly and quantitively
MP3—Construct viable arguments and critique the reasoning of others
MP4—Model with mathematics
MP5—Use appropriate tools strategically
MP6—Attend to precision
MP7—Look for and make use of structure
MP8—Look for an express regularity in repeated reasoning

Social Emotional Learning Standards Connections— SEL Goal 2– use social-awareness and interpersonal skills to establish and maintain positive relationships—directly connects to MP3. Many of these resources can be used in a group or partner situation to build on both MP3 and SEL 2.

Online Activities

Illuminations (from NCTM) website has a large collection of interactive activities/games for all grade levels and all standards. Educators can search by standard or grade level. Many of the activities can be used on an interactive whiteboard (smart -board or Promethean). No login is required to use the activities. There are also lesson plans available on the website to work in conjunction with the interactive platform. http://bit.ly/2woYEqr

Refraction focuses on teaching fractions and discovering optimal learning pathways for math education. Refraction lets you bend, split, and redirect lasers to power spaceships filled with lost animals! Help free as many animals as you can by expanding your knowledge of fractions. http://bit.ly/2woMBJQ

Math Snacks isn't a curriculum, but a series of activities you can use with the curriculum already being used in grades 4-8. Math Snacks materials address critical content including number sense, ratio, proportion, measurement, scale factor, and pre-algebra. Don't think of the animations and games as "free time activities." Each of these have been designed to be used as part of instruction. All Math Snacks products have lesson guides, and additional instructional resources. The games and animations can be used by students at anytime, there is no login required. Most are available in Spanish! http://mathsnacks.com/index.html

Prodigy has content from all major topics and will seamlessly cover Grades 1 - 8 to help ensure students are ready for standardized testing. With a diagnostic test to place students in the correct grade, embedded assessments, and automatic differentiation, Prodigy ensures that each one of the students succeed at their own pace. All math, reporting, and access to the program is free. They do make money with an optional parent upgrade, which only unlocks extra game content (e.g., new hairstyles for a student's character), and has absolutely no impact on Prodigy's educational quality. https://prodigygame.com/

The Math Learning Center's web/mobile apps are based on the visual models featured in the curriculum Bridges in Mathematics. All apps are available in two or more versions: a web app for all modern browsers, and downloadable versions for specific operating systems and devices (such as Apple iOS for iPad). All will work with a ChromeBook! https://www.mathlearningcenter.org/resources/apps

Number Frame
Number Pieces
Number Rack
Money Pieces
Math Vocabulary Cards

Mathematical Videos

Mathematics in Movies - This is a collection of movie clips in which Mathematics appears. The site is now in HTML5 video and should be accessible by all devices. If not, chose the direct video links. To include a clip into a presentation, chose the QuickTime version. A wide variety of genres and decades, some that students won't recognize but will certainly enjoy the connection. http://www.math.harvard.edu/~knill/mathmovies/

WatchKnowLearn is a video platform that has educational videos curated not only by the website developers, but users can also upload videos. The subcategory MATHEMATICS splits into every math content available, from math for young learners to calculus. Educators can create accounts and save videos to a playlist so they are ready when needed in the classroom. Most all are hosted on YouTube and educators are encouraged to review first. http://bit.ly/2wp01W6

Safe Share TV is a platform to watch YouTube without any additional videos or advertisements appearing on the screen. By copying and pasting the YouTube link into the box on the home page, the website will generate a new LINK to the video. This link will never expire and now will direct to a video display that removes all the unwanted items. Educators can now place this link in a PowerPoint or an assignment in GAFE (Google Apps For Education) that the students can select and they will not be shown "other" items. http://safeshare.tv/

Mobile Apps

10 Frame Fill provides students practice with recognizing additive "10 Families" (e.g., 1 and 9, 2 and 8, etc.). Set the 10 Frame to fill in sequence or randomly. Use contrasting color chips to fill the 10 frame as users determine the answer. Select to show a corresponding number sentence. http://apple.co/2wx6MFp

Thinking Blocks Addition teaches children how to model and solve word problems involving addition and subtraction. In this interactive tutorial, children are introduced to 6 problem solving models. The models help children organize information and visualize number relationships. http://apple.co/2wwOggx

Number Frames is an app that Use standard 5-, 10-, 20-, and 100-frames, or create custom frames up to 12 x 12. Choose from a variety of counters and colors. Drag single counters — or stacks of 5 and 10 — into frames or on to the workspace. Apply a 5s grid to frames to emphasize every 5th line and reinforce grouping by five. Use the drawing tools to annotate work and show understanding. Write equations and expressions with the math text tool. http://apple.co/2wx4cPE

Math Snacks HD is a math video app with 5 videos and includes learner's guides, comic book transcripts, and teacher's guides. Topics include Ratios, Number lines, units and proportions and scale factors. http://apple.co/2wwP3hv

Virtual Manipulatives use photos and an interactive white board to work with manipulatives in fractions, percent, and decimals. easy to manipulate for all ages. NOT A GAME, used for instruction and modeling. iOS only https://apple.co/2IkhIxh

Moose math teaches counting, addition, subtraction, sorting, geometry and more. While playing 5 multi-level activities in the Moose Juice Store, Puck's Pet Shop and Lost & Found, kids can earn rewards to help build their own city and decorate buildings. http://apple.co/2wwIKdG

Online Virtual Tools

Draw.io is an online flowchart tool that allows users to create any type of drawing using simple to complex shapes and diagrams. Numbers and text included so student could use this to show the process in completing an equation. The platform has built in shapes that can be dragged onto the page and aligned to build the chart. The drawing can be saved to Google drive, Dropbox or Onedrive or printed out. Users can create an account, but it is not necessary to use the tool. https://www.draw.io/

GeoGebra is dynamic mathematics for all levels of education that brings together geometry, algebra, spreadsheets, graphing, statistics and calculus in one easy-to-use package. GeoGebra is a rapidly expanding community of millions of users located in just about every country. http://bit.ly/2v7fNRY

Desmos is the best-in-class HTML5 graphing calculator, which millions of students around the world use for free. The platform also has activities on top of that calculator, helping students use a powerful tool to experience all the curiosity, beauty, and sense that math has to offer. Those activities were used so often by so many teachers around the world that they decided to create an Activity Builder, helping every teacher create digital math activities that equal and exceed the activities we create ourselves. Users can create an account to save graphs and data for works in progress. Graphs can be printed or emailed. (calculator platform can be changed into 33 different languages.) (iOS and Android apps available as well.) http://bit.ly/2v7m1RW

Daum Equation Editor - Online equation editor that will allow the user to save to Google drive, save as an image or text file, increase text and modify the color of different characters in the equation to help educators highlight portions of the instruction. http://bit.ly/2v7Aj4P

PhET Simulations from University of Colorado provides fun, free, interactive, research -based science and mathematics simulations. The simulations are written in Java, Flash or HTML5, and can be run online or downloaded to your computer. All simulations are open source. Simulations are all grade levels and subjects are physics, biology, chemistry, earth science and math. Users can play with the simulations without an account. Educators can use an account to keep track of students and simulations. https://phet.colorado.edu/

The National Library of Virtual Manipulatives (NLVM) is an NSF supported project that began in 1999 to develop a library of uniquely interactive, web-based virtual manipulatives or concept tutorials, mostly in the form of Java applets, for mathematics instruction (K-12 emphasis). Utah State University team is building Java-based mathematical tools and editors that allow us to create exciting new approaches to interactive mathematical instruction. The use of Java as a programming language provides platform independence and web-based accessibility. The NLVM is a resource from which teachers may freely draw to enrich their mathematics classrooms. http://bit.ly/2v7j9V4

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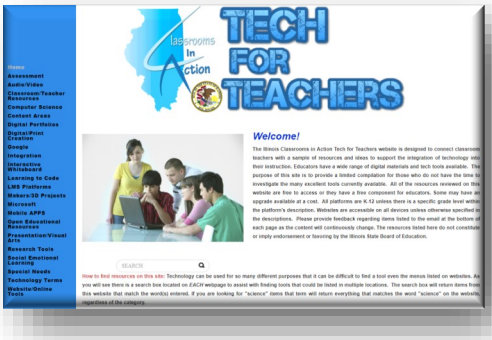


Technology in Action Guide

Elementary Science

Sample Standards Connections

When implementing technology into lessons and units, educators can connect to the content standards of the immediate subject, such as science, quickly. Connecting the tools within this document to the core disciplines of Life Science, Physical Science, Earth and Space, or Engineering can be the first step of Standards Connections. Taking a few steps further educators need to connect with standards outside of science. Here are a few that might be include with the tools here:

ELA *R.7* Integration of Knowledge and Ideas, *R.10*– Range of Reading and Level of Text Complexity, *L.6*-Vocabulary Acquisition and Use, *W.1-W.3*-Text Types and Purpose, *W.4-W.6*– Production and Distribution of Writing, *W.7-W.9*– Research to Build and Present Knowledge, *W.10*– Range of Writing, *SL.1-SL.3*– Comprehension and Collaboration

SEL—*Goal 1*– Self Awareness and *Goal 2*– Social Awareness/ Interpersonal Skills

Online Experiments/ Simulations

Experiment with Ecosystems (The Concord Consortium) The goal of this activity is to give students the opportunity to "think like a scientist," making hypotheses, doing experiments, making observations, and analyzing data. Students are encouraged to construct and conduct their own experiments with ecosystems comprised of grass, rabbits, and up to two predator species: hawks and foxes. http://bit.ly/2lNf9Hb LIFE SCIENCE

Journey North Class Study - This platform is a free, Internet-based program that explores the interrelated aspects of seasonal change. Through interrelated investigations, students discover that sunlight drives all living systems and they learn about the dynamic ecosystem that surrounds and connects them.

•*Sunlight and the Seasons:* Children study seasonal change in sunlight in a global game of hide and seek called Mystery Class.

•*Plants and the Seasons:* Children explore tulip growth in their own gardens, running an experiment that tracks the arrival of spring.

•*Seasonal Migrations:* Children follow animal migrations. They observe, research, and report findings and watch journeys progress on live maps. https://www.learner.org/jnorth/ EARTH AND SPACE

Lunar Phase Simulator— The NAAP Lunar Phases lab demonstrates how the Earth-sun-moon geometry gives rise to the phases of the moon as seen from earth.

A distant view of an observer looking down on earth as well as a perspective of an observer looking into the sky are used in the simulator. (Astronomy Education at the University of Nebraska-Lincoln) http://bit.ly/2m36iSo EARTH AND SPACE

Molecular Workbench (The Concord Consortium) - The complete workbench is a downloadable program that can be modified by the educator and then the students can control the experiments more. However, there is now a selection of "online" HTML 5 experiments and simulations that can be utilized completely online and are Chromebook compatible. This is the link to those resources. (You can also link to the downloadable program and all of the resources available from this webpage on your class website.) http://bit.ly/2lrxTcM PHYSICAL SCIENCE

Algodoo is a unique 2D-simulation software from Algoryx Simulation AB. Explore physics, build inventions, design games or experiment with Algodoo in science classes. With Algodoo students can create simulation scenes using simple drawing tools like boxes, circles, polygons, gears, brushes, planes, ropes and chains. Students can also add more physics in their simulation like fluids, springs, hinges, motors, thrusters, light rays, tracers, optics and lenses. (iPAD as well.) http://www.algodoo.com/ ENGINEERING

PBS Zoom Goldburger— A website simulation modeled after Rube Goldberg where the ZOOMers were challenged to design a machine that serves lunch to the ZOOM cast and crew. They've called it the Goldburger To Go, and they need your help to finish it. The website also has other resources on Rube Goldberg designs that students can investigate.

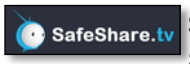
http://to.pbs.org/2lMZlPh ENGINEERING

Science Videos

Crash Course Kids! is a channel created by PBS Learning Media for elementary students with 105 science videos ranging from 4 minutes to 20 minutes in length. The topics covered match standards for 4th-5th grade, but are great for all elementary students and even a review for 6th grade science concepts.

https://www.youtube.com/user/crashcoursekids

SciShow Kids is a YouTube Channel that explores all those curious topics that make people ask "why?" Jessi and her robot rat, Squeaks, answer questions and explain fun, complex science concepts for young, curious minds. Whether conducting experiments, researching new questions, or talking with experts, there's always something new to discover with SciShow Kids, no matter what age the students are! https://www.youtube.com/user/



Safe Share TV is a platform to watch YouTube without any additional videos or advertisements appearing on the screen. By copying and pasting the YouTube link into the box on the home page, the website will generate a new LINK to the video. This link will never expire and now will direct to a video display that removes all the unwanted items. Educators can now place this link in a PowerPoint or an assignment in GAFE (Google Apps For Education) that the students can select and they will not be shown "other" items. http://safeshare.tv/

Research / Data Tools

Ducksters is a simple, K-5 student-friendly database option that includes history, science, geography, economics sports and fun facts. Resource pages are detailed but to the point making it easier for some students to maintain attention and not get frustrated with too much "text". Links to some educational games are on the website as well, so monitoring is essential.
http://www.ducksters.com/

Kiddle is a visual search engine that returns SAFE results. Sites appearing in Kiddle search results satisfy family friendly requirements, as they filter sites with explicit or deceptive content. The search result will include 1-3 sites that are hand picked by the editors that are written just for kids, 4-7 sites that are simple and easy to read, and 8 or more that have expert content but may be harder to read. All results include a large thumbnail or graphic beside the text.
http://kiddle.co/

Create A Graph— Kidzone online graphing tool. Extremely kid friendly for elementary students to graph data online. Includes a tutorial to get started if students are new to graphing. Students can take data from any experiment or polling situation and create a visual representation of the information much easier than a spreadsheet creation.
http://bit.ly/1OxeRx6

Presentation and Publication Resources

Screencast-o-matic allows users to record on-screen activity and audio from a computer microphone. Students can open their MS Word or Google Doc essay or report and record their reflections or process on how they developed their hypothesis or experiment. The video can then be saved and uploaded to the class website. The same process could be done for any computer generated work, modeling how to research or conduct a search online, or doing a science experiment with an interactive model and explaining why the reactions are occurring.
https://screencast-o-matic.com/home

ThingLink creates an interactive digital graphic by adding "dots" that pop up text or connections to websites, videos or more graphics. Users can upload photos, documents or any graphic and then add points anywhere on the item to show items of interest or further exploration. Students connecting to a science model may have linkable items to the research they have based their data or maybe an interactive experiment proving their hypothesis.
https://www.thinglink.com/edu

The iOS and Android standard camera app can allow video recording. Students can either record themselves holding up their work and reflecting or hold the device while pointing to the work and record their reflections. The file can be transferred from the device either via cable or WiFi. Students could record their work with a partner or group as well.

Show Me app is a recordable white board where students can draw or write on the board while explaining their work. This a great way to show student mastery with student created math tutorials. Educators can upload images that students can write, show or reflect on. http://apple.co/2eZJ1fq

Block Posters is a website to create posters from any picture file that can be printed on a standard printer. The website platform allows the user to upload any picture file and converts it to a PDF that is made of multiple pages that can be assembled to create a large poster. Users have control of the final size of the poster prior to the conversion and instructions are saved with the created PDF.
http://www.blockposters.com/

Website HIGHLIGHTS

The Concord Consortium's Path Finder - Their STEM Resource Finder features some of the best free, open-source educational activities, models and software tools. Educators can search by keyword or filter by subject, grade level and type to find the right resources for learning goals. **Educators will need to carefully consider where to include these resources in their curriculum to ensure they are aligned properly to their grade level standards.
http://concord.org/ngss/

Virtual Biology Lab has three Biodiversity Ecology Labs for students to explore how changes can effect the habitats. There is an Island, Stream and Plant model to manipulate. No login is required, the graphics are great and work well with a projector.
http://virtualbiologylab.org/biodiversity-ecology/

StemRead is from Northern Illinois University (NIU). Carefully selected books rooted in science, technology, engineering, and math (STEM) topics that explore the science behind the fiction. A selection of activities to go along with each one, lesson plans and videos to support the books. Since the creators of this platform are in Illinois, they also offer PD opportunities and local contacts. Checkout their contact information and signup for their email list. http://www.stemread.com/

The Lawrence Hall of Science 24/7 Science is a website that has many STEM resources. In these interactives, use your hands, feet, eyes, ears, brain, imagination and cool tools to experiment, design, test and discover amazing things about the world around you. It's science and it's fun! http://static.lawrencehallofscience.org/kidsite/

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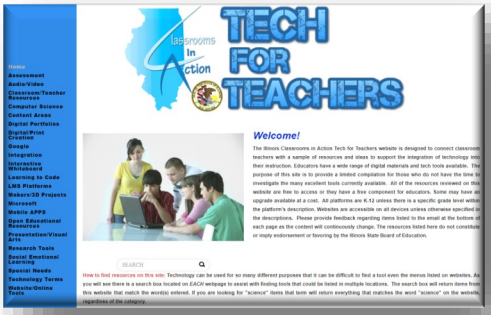

Technology in Action—Elementary Science

Technology in Action Guide

Elementary Social Science

Standards Targets Connections

Inquiry	
Civics	Geography
Economics and Financial Literacy	History

Social Emotional Learning Standards Connections— SEL Goal 3—Demonstrate decision-making skills and responsible behaviors in personal, school, and community contexts

Inquiry Tools

Fact Monster includes an online almanac, thesaurus, dictionary, encyclopedia, atlas, and timelines. Student friendly and no logins are required to search. Great videos, subject areas as well - Science, Social Science, ELA, Math, etc. Does connect to educational games, so monitoring is essential.
http://www.factmonster.com/

Ducksters is a simple, K-5 student friendly database option. Includes history, science, geography, economics and some fun topics as well, sports and fun facts. Resources pages are detailed but to the point making it easier for some students to maintain attention and not get frustrated in too much "text". Links to some educational games, so monitoring is essential. http://www.ducksters.com/

Factitious is a game that tests your knowledge of Fact or Fiction news. Can you tell real news from fake news? Simple platform that checks users knowledge of the news. The factual news articles can connected to the answers.
http://factitious.augamestudio.com/#/

Recap—by Swivl is a free app/website tool that provides teachers with new, creative way to gather evidence of student thinking using video recordings. Create and assign questions to a student, a group of students or the entire class to be answered during or after a lesson via the devices camera/microphone. This app works on iOS, Android, Chromebooks and desktop machines. https://letsrecap.com/

FactCheck.org is a website that monitors the factual accuracy of what is said by major U.S. political players in the form of TV ads, debates, speeches, interviews and news releases. The cover many current events in the nation and globally. Their goal is to apply the best practices of both journalism and scholarship, and to increase public knowledge and understanding.
http://www.factcheck.org/

Civics Activities

Ben's Guide to the U.S. Government, a service of the Government Publishing Office (GPO), is designed to inform students, parents, and educators about the Federal Government, which issues the publications and information products disseminated by the GPO's Federal Depository Library Program.
https://bensguide.gpo.gov/

iCivics is a non-profit organization dedicated to reinvigorating civic learning through interactive and engaging learning resources. The iCivics games place students in different civic roles and give them agency to address real-world problems and issues. They are rooted in clear learning objectives and integrated with lesson plans and support materials. Educators can create accounts and then classes with student usernames and passwords, create assignments and monitor student completion. https://www.icivics.org/

My Hero Project has a mission of MY HERO that is to use media, art and technology to celebrate the best of humanity and to empower people of all ages to realize their own potential to effect positive change in the world. The freely accessible, not-for-profit project is supported by visitors of all ages who share stories, art, and short films on our award-winning multimedia journal and digital library.
http://myhero.com/teachersroom/index

Law Related Education is developed by the Texas State Bar and has many resources for educators. Once on the website there is a "games" page that includes content on American symbols, guessing occupations, the preamble, the pledge of allegiance, branches of the government and the constitution. There is also a page called Justiceville that has 4 more games for the early elementary students.
http://bit.ly/2vn9H05

Geography Activities

The Global Awareness Map- There are 194 countries around the world. Find out more on each country's people, government, religions, US military presence and current issues. Students can select a region and start exploring. http://www.globalawarenessmap.org/

National Geographic Kids website has Earth and space, Life Science and Physical Science resources in the form of videos, research information all at an elementary level. The platform has engaging material and connections to content standards. Lesson ideas and resources for educators are available on all categories. Videos and games available on many geography topics. http://kids.nationalgeographic.com/

ePals Global Community® pairs educators and students around the world in exciting project-based learning for language learning practice and cultural exchange. Our global challenges bring together learners to apply important concepts, from STEM to cultural studies, through events such as the Smithsonian Invent It! and Folklife challenges.
http://www.epals.com/#/connections

IL Geographic Alliance -The interactive maps which cover a wide variety of topics including physical geography, historical geography, population, cultural processes and patterns, political geography, agriculture and rural land use, industrialization and economic development, cities and urban land use, as well as general reference maps. http://arcg.is/2vmVD6F

Economics and Financial Literacy Activities

Admongo—Everywhere you look, you see advertisements—not just on TV and online, but on buses, buildings, and scoreboards. Do your students have the critical thinking skills to understand ads, what they're saying, and what they want kids to do? http://bit.ly/2vmUOuG

Energy Star Kids website has resources for educators and students on the use of energy, different forms of energy, energy conservation and how students can help in the environment and to save energy at home and in the community. Mostly geared towards elementary and middle school, but some facts could be relevant to high school research needs.
http://bit.ly/2vg3nap

h.i.p Pocket Change shows students with coins, we literally carry the past in our pockets. The games, stories, and other activities bring coins to life. They present not only the extraordinary people pictured on the coins, but also the generations of citizens who have carried this change. http://bit.ly/2vfTmdn

Pod To Plate - Illinois Ag in the Classroom sponsored website has many interactive resources to help students understand the agriculture within the state of Illinois. Videos, games, online resources and lesson plans for grade levels 3rd-8th. Largest collection of soy bean resources from planting through production in Illinois. http://bit.ly/2vgcqs8

EconEdLink—Meet the students where they are by using technology to help teach economics and financial literacy. Simulations, games, videos and other interactive resources make education fun and engaging for the 21st century learner.
http://www.econedlink.org/tools/1

Financial Literacy for Everyone allows students to test their money skills and give a brain a workout with these fun and educational games. Elementary to high school will find games to help with understanding spending and saving.
http://www.practicalmoneyskills.com/play

History Activities

Jamestown Online Adventure allows students to be the Captain of the Jamestown Colony: Can they do any better than the real colonists? They can ask their fellow colonists and the Native Americans for advice. Be careful, though, because some advice is better than others! There is no login for the game and it can not be saved unless educators download and save the program to the computer.
http://www.historyglobe.com/jamestown/

America's Story- The site was designed especially with young people in mind. Students can explore Amazing Americans, Jump Back in Time, Explore the States, Join America at Play, or See, Hear and Sing with exciting entertainers. No login required to explore the great collections. http://bit.ly/2vmHcQd

The TimeMap of World History is a comprehensive atlas and encyclopedia of world history. It contains over 650 maps and 1,000 pages of supporting text. It is designed to be easy to navigate, through both time and space. It is structured to make the complex mesh of history accessible and comprehensible. http://www.timemaps.com/history

Timeline JS3 is a simple timeline creator that hosts the produced timeline that can be embedded on any website or block. The timeline can be created using a simple Google spreadsheet and the website gives educators the template to start with and a video tutorial. Multimedia can be included in the timeline such as video and website links. Timelines can also be shared via Google Plus, Gmail, Facebook or Twitter. http://timeline.knightlab.com/

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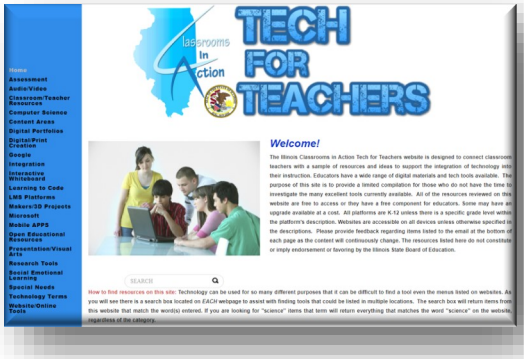

Technology in Action Guide

Social/Emotional Learning Standards K-5

Learning Goals

Goal 1: Develop self-awareness and self-management skills to achieve school and life success.
Goal 2: Use social-awareness and interpersonal skills to establish and maintain positive relationships.
Goal 3: Demonstrate decision-making skills and responsible behaviors in personal, school, and community contexts.

SEL Targeted Platforms

Heroes Among Us - Character Development Lessons and guides provided by the Congressional Medal of Honor Foundation for K-12. Educators can create an account to access grade level specific content and activities. The kindergarten through sixth grade focus on courage, commitment, integrity, sacrifice, citizenship, and patriotism into language and behavior that children can comprehend and embrace. Positive role models demonstrate how we can all choose to be our personal best. Middle and high school appropriate content features non-fiction accounts of Medal of Honor Recipients' and citizen heroes' actions. Assignments for individual and group work, assessment suggestions, and extended activities guide educators and students through this character resource. Videos are moving and geared towards speaking to student populations, making connections to concepts that matter to youth populations today.
http://themedalofhonor.com/character-development

Peekapak is an innovative website that combines social-emotional learning with reading and writing standards. The platform has a free version that allows access to all the books and at least one lesson plan. Additional lessons are available with the pro plan. Engaging characters and story lines address topics each month such as self regulation, respect, gratitude, kindness, teamwork, empathy, optimism, courage, honesty, perseverance, and many more with new topics appearing each month. All plans allow for educators to access previous months books. Suited for grades PreK-3, the books can be adjusted for any grade level and can be adjusted within the class so the same topic can be differentiated within the reading levels of the class.
https://www.peekapak.com/

My Pop Studio is a website that allows students to go behind the scenes within four media platforms and find out how media influences teenagers view of themselves and social relationships. Students can be in a magazine studio designing a layout where they are the celebrity, a TV studio examining viewing choices and ads, music studio looking a lyrics and media or a digital studio discovering the impact of social media. The website includes learning outcomes and secondary outcomes on the "about us" page.
http://mypopstudio.com/index2.php

In **Quandary,** players must make difficult decisions in which there are no clear right or wrong answers but important consequences – to themselves, to others in the colony and to the planet. In their interactions with other settlers in the colony, players must consider facts, opinions and solutions, just like in real life. Though the game's setting is a futuristic colony, the genuinely tough situations that players encounter are translatable to the ones they are likely to face day-to-day. The skills players develop while playing Quandary – such as critical thinking, perspective-taking and decision-making – will help them recognize ethical issues and deal with ethical situations in their own lives. Quandary provides a framework for how to approach ethical decision-making without telling players what to think.
http://www.quandarygame.org/

E-Pals website—Collaborate with a class from around the world on various projects, or follow guided Experiences. As students video-chat with a partner class, practice nonverbal expressions and discuss what they may communicate to other cultures. Projects and connections on this platform can support goal 2 and goal 3 for all students. Simple to sign up and create the class profile. Search and select who you would like to communicate with for a one-time project or over multiple weeks. The platform starts out with teachers in control of the communications. Settings can be changed to give students a more empowered control if educators choose. http://www.epals.com/#/connections

Social Emotional Learning Standards

1A– Identify and manage one's emotions and behavior.	1B– Recognize personal qualities and external supports.		1C– Demonstrate skills related to achieving personal and academic goals.
2A– Recognize the feelings and perspectives of others.	2B– Recognize individual and group similarities and differences	2C– Use communications and social skills to interact effectively with others.	2D– Demonstrate an ability to prevent, manage, and resolve interpersonal conflicts in a constructive ways.
3A– Consider ethical, safety, and societal factors in making decisions.	3B– Apply decision-making skills to deal responsibly with daily academic and social situations		3C– Contribute to the well-being of one's school and community.

Tools to Support SEL

Google Slides/PowerPoint -Have students find photos of activities they would like to learn about or improve on and create a presentation and what it takes to be involved or accomplished in that activity.

Quick Rubric - Rubrics are a great way to help students reflect on how things went when working towards a goal. What obstacles were faced and how they were overcome or did they prevent the goal from being reached?
https://www.quickrubric.com/

Brushes 3 app or **Sumo Point** online are great painting tools to allow students to express themselves with art. Whether it is simple splashing colors that might match with a song or their feelings during a situation or more detailed drawings depicting what or how something that occurred made them feel and respond.
Brushes 3- http://apple.co/2vG2kns or www.sumopaint.com

Make Beliefs Comix— Students can create a 4 panel (or more) comic strip on a topic about bullying, sharing, or what do to in a situation that isn't nice. A simple platform of drag and drop to design the comic strip. Accounts aren't need the creation can be downloaded and printed.
http://www.makebeliefscomix.com/

Sock Puppets app (iOS only) - Students can create animated movies with sock puppets to share how to be nice, share, or deal with everyday school situations.
http://apple.co/2vGAVBw

Blabberize—Students sometimes have a difficult time expressing their emotions or talking about difficult subjects such as what it felt like to be bullied. Using this platform allows students to take any photo or drawing and bring it to life. The "mouths" on the picture will be converted into talking objects and the students can record their story. www.blabberize.com

Instant Classroom –Random Grouping, Educators can use this tool to randomly create groups. This allows students to work with everyone in the classroom at anytime. Educators don't need to "select" who is where and the burden is off of the students to create teams within the peer pressure of the classroom.
http://bit.ly/2umRTBE

GoNoodle— is a website that gets students up and moving to characters on the screen dancing/moving with a purpose. The "calming" category has 26 activities that address compassion, being a good friend, frustration, patience, etc. It is a great way to take a break in a tense situation or when everyone just needs a brain break.
https://www.gonoodle.com

Trading Card Creator—both an app and online platform. Students can use this resource to create a card of either a fictional "friend" or themselves. They can include why they are friends, what they have done well as a friend. Students can create a friendship biography. http://bit.ly/20Zg5o5

More ideas…..Common Sense Media

Social and emotional learning (SEL) skills make us better people at home, at school, in our communities, and in the workplace. These skills include how to "understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions." Unfortunately, SEL is all too often put on the back burner, relegated to a means of "classroom management." *True, SEL might not be core content, but it's the core of all content.* SEL might not be core content, but it's the core of all content.

- empathy
- integrity
- self-control
- compassion
- communication
- humility
- gratitude
- courage
- curiosity
- perseverance
- teamwork

This is the reason for We All Teach SEL, an 11-part blog series offering quick, practical tips and tools for integrating SEL into any classroom -- no matter the subject or grade. Explore the topics below to find actionable activities and resources that build on tools you might already be using and content you're already teaching. http://bit.ly/2w5Xu37

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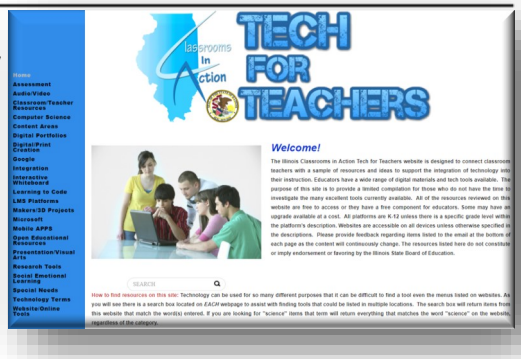

Technology in Action—SEL Elementary K-5