

Technology Applications TEKS Lesson Ideas

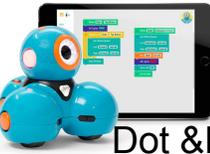
Technology Application TEKS are divided by grade level bands and strands. The *What Does IT Look Like* column in the table below provides an interpretation of what the strand intends and also includes helpful definitions. The *Suggested Applications* column gives supported software and applications that work well for the TEKS indicated.

Grades 3-5

Strand & TA TEKS	What Does IT Look Like?	Suggested Applications
(1) Creativity and Innovation		
<p>The student uses creative thinking and innovative processes to construct knowledge and develop digital products. The student is expected to:</p> <p>(A) create original products using a variety of resources;</p> <p>(B) analyze trends and forecast possibilities, developing steps for the creation of an innovative process or product;</p> <p>(C) use virtual environments to explore systems and issues.</p>	<p>Students should have experience creating digital products so that they are able to work the steps of an application to complete a project. Students need to discuss trends and possibilities as they develop steps in their process. They use virtual environments either real time (such as Zoom and web cam equipment) or simulations (such as Minecraft) to explore various systems, concepts, and issues. This strand is about thinking creatively and exploring processes to create products – not about <i>particular</i> products, applications, or software. Students in this grade band need lots of practice with many applications and devices so that they can ultimately CHOOSE the application or software that will help them create a product to show what they know.</p> <p><u>Digital Products:</u> A digital product can be anything created electronically. There is no specific requirement for what must be created. Students might use Wixie, Kidspiration, Google Apps, Adobe Spark, iMovie or another tool to create a product. Students can show what they know about any topic by creating documents whether teacher directed or student choice.</p> <p><u>Virtual Environments:</u> A computer generated environment where students interact with each other through cameras (such as Zoom and web cam equipment - ask the Campus IT) or a computer generated representation of an environment where students interact as characters such as Minecraft.</p>	 <p>The suggested applications column contains a collection of logos for educational software and tools. At the top left is the Google Education logo. To its right are logos for Microsoft Word, PowerPoint, and Excel. Below these are logos for Wixie (a hand with colorful fingers), a purple star with a camera icon, and a globe with a circular arrow labeled 'EDUCATION'. Further down are logos for Google Tour Builder (a globe with location pins) and Kidspiration (a star over the word 'kidspiration'). Below Kidspiration is a logo for TIN K E R C A D (a grid of colored letters). To the right of that is the Adobe Spark logo with icons for Video, Page, and Post. At the bottom left is the Zoom logo, and at the bottom right is the Glencoe Online logo. At the very bottom is the Minecraft Education Edition logo.</p>

Strand & TA TEKS	What Does IT Look Like?	Suggested Applications
(2) Communication and Collaboration		
<p>The student collaborates and communicates both locally and globally using digital tools and resources to reinforce and promote learning. The student is expected to:</p> <p>(A) draft, edit, and publish products in different media individually and collaboratively;</p> <p>(B) use font attributes, color, white space, and graphics to ensure that products are appropriate for multiple communication media, including monitor display, web, and print;</p> <p>(C) collaborate effectively through personal learning communities and social environments;</p> <p>(D) select and use appropriate collaboration tools;</p> <p>(E) evaluate the product for relevance to the assignment or task;</p> <p>(F) perform basic software application functions, including opening applications and creating, modifying, printing, and saving files.</p>	<p>At this grade range, students are expected to make decisions about the appropriateness of different digital platforms to use for collaboration. For example, this means that we are asking students to decide if Twitter or Google Docs might be the best way to collaborate for creating a particular digital product? They must become familiar with each platform so that they can ultimately make good choices for assignments.</p> <p>Students are expected to evaluate their products. Rubrics and peer review are helpful for this process. TEKS (A), (B), (E), & (F) occur routinely as students create digital products.</p> <p><u>Collaboration tools</u>, such as Google Docs, Wixie, Twitter, and Zoom promote learning. Utilize a class Twitter account for designated students to tweet about the learning for the day or to model developing a personal learning network (PLN) to gather information on a topic or to participate in a project. Google Classrooms enable all students to post comments about a current topic. And, Zoom video conference connections will expand classroom walls so students can work on a project with a class at another location or connect with an expert to expand knowledge on a topic. Guiding, sharing, and gradually releasing the responsibilities of communicating and collaborating digitally will prepare students for the next level.</p> <p><u>Font Attributes</u> refers to font selection, font style (bold, underscore, and italics, font size, and font color). Use of font, color, space, graphics, and animation is important to students and can add to or detract from the end product. <i>Ongoing</i> reminders, discussion, and tips about best practices and appropriate choices for the task will be productive.</p> <p>Examples of best practices might be:</p> <ul style="list-style-type: none"> • Use only 1 font style for a project. Make sure the font selected is easily read. Fancy fonts are appropriate for titles only. Use appropriate font sizes for titles and text. • Limit text in a presentation slideshow. • Color choice is important. Bright yellow on bright green may not be visible, etc. • Less is more! Too many images, clipart, or word art will distract from the content of the message. <p>Students should know the intended venue for their finished product. If it will be printed, then it is not appropriate to over-saturate with color and images. If it will be displayed electronically, such as a slideshow, then colored backgrounds, etc. would be acceptable.</p> <p><u>Personal Learning Communities / Social Environments</u>: Personal Learning Communities (or networks) are groups of people you interact with, through screen names, in the pursuit of gaining knowledge and sharing information. These networks are created by connecting with others who have similar interests and concerns. For example, there are groups of 4th grade teachers and groups of 4th grade classes who regularly communicate and collaborate. (A Google search of “Twitter groups for 4th grade classroom” will be a starting point.)</p>	      

Strand & TA TEKS	What Does IT Look Like?	Suggested Applications
(3) Research and Information Fluency		
<p>The student acquires and evaluates digital content. The student is expected to:</p> <p>(A) use various search strategies such as keyword(s); Boolean identifiers <i>and</i>, <i>or</i>, and <i>not</i>; and other strategies appropriate to specific search engines;</p> <p>(B) collect and organize information from a variety of formats, including text, audio, video, and graphics;</p> <p>(C) validate and evaluate the relevance and appropriateness of information;</p> <p>(D) acquire information appropriate to specific tasks.</p>	<p>Lifelong learners ultimately need to develop expert skills in the research and information fluency strand.</p> <p>For this grade band, in the research and information fluency strand, students must move from one word searches to more powerful search strategies to find information. They must think about what it is they are looking for, then, choose powerful keywords for searching. Learning to use <u>Boolean identifiers</u> (see below) begins here. For example: searching for <i>Mexico NOT city</i> will return results only about Mexico not Mexico City. This reduces unwanted results. Students should begin understanding that they can control their own search results. They should be aware that there are other search engines besides Google. Different search engines (i.e., Google, Bing, Yahoo, and Wolfram Alpha) have particular methods for conducting advanced searches and may be more helpful than another for a particular research project. Familiarize students with several.</p> <p>Think aloud daily to point out which parts of the search results you are looking at to help decide which link to use and which resource to trust. (link title, snippet, bolded words, and website url) By talking about which search results you choose to click on and why as opposed to others will help students recognize that they must evaluate the information online. Teaching proper usage is always appropriate and necessary; but, utilizing a <u>kid-friendly search site</u> may also be helpful. Don't forget about other resources provided by our district that are completely safe and free of distractions when searching, such as: Britannica resources, and Discovery Ed.</p> <p>Students are expected to learn about a topic and be able to evaluate the usefulness of information. Part of this process is harnessing the resources available at the click of a mouse. Students should learn to find, save, and organize files and links for their projects. Collecting, organizing, evaluating, and validating digital information are skills that will be very important in future grades.</p> <p><u>Boolean</u> searches allow you to combine words and phrases using the words AND, OR, NOT, and quotation marks (known as Boolean operators) to limit, broaden, or define your search.</p> <p><u>Digital Content</u> – anything available in digital or electronic form. Everything on the internet and the computer is digital content.</p>	

Strand & TA TEKS	What Does IT Look Like?	Suggested Applications
(4) Critical Thinking, Problem Solving, and Decision Making		
<p>The student researches and evaluates projects using digital tools and resources. The student is expected to:</p> <p>(A) identify information regarding a problem and explain the steps toward the solution;</p> <p>(B) collect, analyze, and represent data to solve problems using tools such as word processing, databases, spreadsheets, graphic organizers, charts, multimedia, simulations, models, and programming languages;</p> <p>(C) evaluate student-created products through self and peer review for relevance to the assignment or task; and</p> <p>D) evaluate technology tools applicable for solving problems.</p>	<p>In grades 3-5, this strand is about finding information about a specific problem and understanding the steps necessary toward solving the problem. Students are expected to use digital tools to help solve problems and to collect, analyze, and represent data. The Suggested Applications column is a starting point and shows some supported applications for (B). As in earlier grades, students are expected to make decisions about which digital tool is most appropriate to the task at hand. So, they will need to become very familiar with many applications. Utilize rubrics to help evaluate digital products for self and peer review.</p> <p><u>Simulations / Models</u>: Something that is made to look and behave like something in real life for the purposes of training or learning. Students might explore virtual math manipulatives at Glencoe Online Manipulatives or Science simulations at PhET Interactive Simulations.</p> <p><u>Programming Languages</u>: There are many different coding or programming languages. Coding is creating commands (or a set of steps) which communicate to the computer how to complete a particular function or action. At the beginning level, coding is as simple as telling the computer or device how to make a figure move in a particular pattern. Coding devices include Beebots, Dot & Dash, Sphero, and many others. Use Code.org for students to learn how to problem solve steps to the desired solution. Sounds harder than it is! Students LOVE it! Code.org shows you how - step by step. Teachers can try it with their students. Learning together is powerful. You may be surprised which students excel at coding. Not as scary as it sounds!</p> <p><u>Tools to collect, analyze, and represent data</u> – online applications such as Google Docs or Google Sheets or software such as Microsoft Word or Excel will help students report on the data/information with which they are working. In this grade range, teachers should think aloud and use guided activities to help students gain an understanding of what these tools can do.</p>	 <p>Beebot  </p> <p>Dot & Dash</p> <p>Sphero </p> <p>TYNKER™ CODING FOR KIDS</p> <p>TIN CO KER DE CAD</p> <p>SCRATCH!</p> <p>GLENCOE <i>Online</i></p> <p>PHET INTERACTIVE SIMULATIONS</p>

Strand & TA TEKS	What Does IT Look Like?	Suggested Applications
(5) Digital Citizenship		
<p>The student practices safe, responsible, legal, and ethical behavior while using digital tools and resources. The student is expected to:</p> <p>(A) adhere to acceptable use policies reflecting appropriate behavior in a digital environment;</p> <p>(B) respect the intellectual property of others;</p> <p>(C) abide by copyright law and the Fair Use Guidelines for Educational Multimedia;</p> <p>(D) protect and honor the individual privacy of oneself and others;</p> <p>(E) follow the rules of digital etiquette;</p> <p>(F) practice safe, legal, and responsible use of information and technology;</p> <p>(G) comply with fair use guidelines and digital safety rules.</p>	<p>This most important strand should be infused throughout the curriculum to develop strong digital citizens.</p> <p>Students are expected to follow district responsible use guidelines, appropriately use digital content of others, protect the privacy of themselves and others, and use appropriate etiquette online. They should demonstrate safe and ethical behavior online and understand the impact of negative online behaviors.</p> <p>Think aloud daily about common internet safety practices while displaying internet pages on screen. Discuss ads, popups, requests for personal information, and resisting temptation to click on side links which will send students off the intended page.</p> <p>Talk about the importance of giving credit to others if using their images, text, or music. Relate it to real world classroom problems of students who might copy another's work.</p> <p>If displaying a webpage, using a class Twitter account, blogs, and/or Google Classroom activities, look for opportunities to reinforce responsible behavior on the internet. This strand can be addressed nearly as often as the computer is used in the classroom, giving students the opportunity to routinely hear about and practice good digital citizenship.</p> <p>Sharing your good common sense with your students along with information from the Humble ISD Digital Citizenship page, Common Sense Media, NetSmartz, or Google's Be Internet Awesome will put your students on the right path to lifelong strong digital citizenship.</p>	<p style="text-align: center;">Digital Citizenship @</p>  <p style="text-align: center;">common sense media</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="1575 673 1764 966">  <p style="text-align: center;"><u>Be Internet Awesome Curriculum From Google</u></p> </div> <div data-bbox="1785 665 1963 868">  </div> <div data-bbox="1785 885 1963 1088">  </div> </div> 

Strand & TA TEKS**What Does IT Look Like?****Suggested Applications****(6) Technology Operations and Concepts**

The student demonstrates knowledge and appropriate use of technology systems, concepts, and operations. The student is expected to:

(A) demonstrate an understanding of technology concepts, including terminology for the use of operating systems, network systems, virtual systems, and learning systems appropriate for Grades 3-5 learning;

(B) manipulate files using appropriate naming conventions; file management, including folder structures and tagging; and file conversions;

(C) navigate systems and applications accessing peripherals both locally and remotely;

(D) troubleshoot minor technical problems with hardware and software using available resources such as online help and knowledge bases;

(E) use proper touch keyboarding techniques and ergonomic strategies such as correct hand and body positions and smooth and rhythmic keystrokes.

This strand is about using digital tools and software packages. Using appropriate tools, terminology, and practices like keyboarding and file management will demonstrate mastery of these indicators. Much of what is expected of students in this strand happens any time a student uses an application. So think aloud and talk about what you are doing and why any time you are displaying something on the presenting computer. Frequent exposure to and usage of computers, internet, software, and applications will make these concepts second nature.

Students are expected to use technology terminology appropriately. They will pick up correct terminology as they are exposed to it on a daily basis from their teachers. They are also expected to name files using appropriate naming conventions set forth by their teacher for example: *lastname_science lab 4*. Students are expected to access and save files in their Google Drive, their personal network G-drives and on common drives and know the difference between them. Students are expected to troubleshoot minor issues with the assistance of online help. This will need continued modeling.

Keyboarding is an important skill that, when mastered, effectively increases student productivity and time on computer. With increasing keyboard skills, instead of searching for the m key, computer time is more productive. Keyboarding activities are an excellent use of computers in the classroom for early finishers. Think aloud and demonstrate often about the appropriate finger placement for home row keys. Students needs direct instruction to keyboard effectively.

File Management - Good naming standards for file names (short and descriptive), appropriate file structures utilizing folders, and deleting unneeded files are examples of file management.

Help feature – is available in any software menu bar. Demonstrate how this feature can help when encountering trouble.

Peripherals – external devices that connect to and can be accessed by the computer in some way. For example: mouse, keyboard, printer, microphone, web cam, etc.



Keyboarding
On Humble ISD
SuperSites

