Teacher Manual

2nd Grade Technology

A COMPREHENSIVE CURRICULUM

SIXTH EDITION

by Ask a Tech Teacher

SECOND GRADE TECHNOLOGY

A COMPREHENSIVE CURRICULUM

Part Three of Nine in the SL Technology Curriculum

Introduction

The educational paradigm has changed—again. Technology has become granular to learning, included in educational standards from Kindergarten onward, like these from Common Core:

- *Expect students to demonstrate sufficient command of **keyboarding** to type a minimum of one page [three by sixth grade] in a single sitting*
- *Expect students to **evaluate different media***
- *Expect students to **gather relevant information** from print and digital sources*
- *Expect students to integrate and evaluate **information presented in diverse media** and formats*
- *Expect students to **interpret information** presented visually, orally, or quantitatively [such as an interactive Web pages]*
- *Expect students to make **strategic use of digital media***
- *Expect students to use print/digital **resources**…*
- *Expect students to use information from **illustrations and words in print or digital** text*
- *Expect students to communicate with a **variety of media***
- *Expect students to **use text features and search tools** (e.g., key words, sidebars, **hyperlinks**) to locate information*

But how is this taught? With the **Structured Learning Technology Curriculum**. Aligned with Common Core State Standards* and National Educational Technology Standards, and using a time-proven method honed in classrooms, students learn the technology that promotes literacy, critical thinking, problem-solving, and decision-making. It's project-based. The purpose is not to teach step-by-step tech skills (like adding borders, formatting a document, and creating a blog). There are many fine books for that. What this curriculum does is guide you in providing the **right information at the right time**.

Just as most children can't learn to read at two, or write at four, they shouldn't place hands on home row in kindergarten or use the internet before they understand digital risks and responsibilities. The Structured Learning curriculum gives students what they need at the right age with proper scaffolding. The end result is a phenomenal amount of learning in a short period of time.

If there are skills you don't know, visit our Help blog (AskATechTeacher) or visit the online companion resources at Structured Learning LLC.

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> "New technologies have broadened and expanded the role that speaking and listening play in acquiring and sharing knowledge and have tightened their link to other forms of communication. Digital texts confront students with the potential for continually updated content and dynamically changing combinations of words, graphics, images, hyperlinks, and embedded video and audio."
>
> *—CCSS*
>
> ● ● ●

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>
> "Use of technology differentiates for student learning styles by providing an alternative method of achieving conceptual understanding, procedural skill and fluency, and applying this knowledge to authentic circumstances."
>
> *—CCSS*
>
> ● ● ●

What's in the SL Technology Curriculum?

The SL Curriculum is project-based and collaborative, with wide-ranging opportunities for students to show their knowledge in the manner that fits their communication and learning style. Each grade level in the curriculum includes five topics that should be woven into 'most' 21st-century lesson plans:

- *keyboarding—more than typing*
- *digital citizenship—critical with the influx of Chromebooks and iPads*
- *problem-solving—to encourage independence, critical thinking*
- *vocabulary—decode unknown words in any subject quickly with technology*
- *publishing-sharing—to promote collaborative learning*

In most curricula, you find full lessons devoted to keyboarding, digital citizenship, and problem solving. Here's a quick overview of what is included:

- *list of assessments, images, articles*
- *articles that address tech pedagogy*
- *Certificate of Completion for students*
- *curriculum map of skills taught*

- *monthly homework (3rd-8th only)*
- *posters to visually represent topics*
- *Scope and Sequence of skills taught*
- *step-by-step weekly lessons*

Each weekly lesson includes:

- *assessment strategies*
- *big idea*
- *warm-up and exit ticket*
- *differentiation strategies*
- *educational applications*
- *essential question*
- *examples, rubrics, images, printables*
- *CCSS and ISTE Standards*
- *materials required*

- *pedagogic articles (if any)*
- *problem solving for lesson*
- *skills—new and scaffolded*
- *steps to accomplish goals*
- *supporting links*
- *teacher preparation required*
- *time required to complete*
- *vocabulary used*
- *weekly how-to video (online)*

Throughout the text are links to extend lessons, add enrichment, and/or provide flexibility in your teaching. No PDF? Usually the website is spelled out. If not, Google the name or contact our help site.

Programs Used

Programs used in this curriculum focus on skills that serve the fullness of a student's educational career. Free alternatives are noted where available:

General		2-8
Email	Drawing program	Word processing tools
Google Earth	Image editor	Spreadsheet tools
Web tools	Keyboarding tool	Desktop publisher
		Presentation tools

What's New in the Sixth Edition?

A good curriculum is aligned with best practices in technology and education. That means it must be updated every few years. Consider the changes to technology in education in less than a decade:

- *Windows updated its platform—twice.*
- *IPads have been joined by Chromebooks as a common classroom digital device.*
- *There is greater reliance in the classroom on internet-based tools than software. This underscores the importance of teaching digital citizenship to even the youngest learners.*
- *Student work is often collaborative and shared.*
- *Student work is done anywhere, not just the classroom and home, meaning it must be synced and available across multiple platforms, multiple devices.*
- *Keyboarding skills are often critical, especially to summative year-end testing.*
- *Technology in the classroom is the norm, but teacher training isn't.*
- *Education is focused on college and career with tech an organic, transformative tool.*
- *Teachers have moved from 'sage on the stage' to 'guide on the side'.*
- *Students have been raised on digital devices. They want to use them as learning tools.*
- *Using technology is no longer what 'geeky' students do. It's what all students want to do.*
- *Printing is being replaced with sharing and publishing.*
- *More teachers are willing to try technology when used authentically.*

In response, here are changes you'll find:

- *The lesson audience is now as likely to be the **grade-level teacher as the tech teacher**.*
- *Ideas deliver lessons on all **popular digital devices**.*
- *The importance of **higher order thinking**— analysis, evaluation and synthesis—is called out**.***
- *The importance of '**habits of mind'—**critical to college and career goals—is included.*
- *It's easy to recognize which **skills are scaffolded** from earlier lessons and which are new.*
- *Each lesson points out **academic applications** of technology.*
- *Students learn to **understand the process**, not just replicate a skill.*
- ***Collaboration and sharing** is often required.*
- ***Differentiation** is encouraged. Teachers learn strategies to meet students where they learn.*
- *Each lesson includes a **warm-up and exit ticket**, to assess and reinforce student learning.*
- *A **Table of Images** and a **Table of Assessments** are included for easy reference.*
- *Updated **Scope and Sequence** includes more references to Common Core.*
- ***Curriculum Maps** shows which month topics are covered as well as which grade.*
- *Each grade-level curriculum includes **student workbooks** (sold separately).*
- *Each grade level has a **lesson on coding**.*

Who Needs This Book

You are the Tech Specialist, Coordinator for Instructional Technology, IT Coordinator, Technology Facilitator or Director, Curriculum Specialist, or tech teacher—tasked with finding the right project for a classroom. You have a limited budget, less software, and the drive to do it right no matter roadblocks.

Figure 1—Tomorrow's student
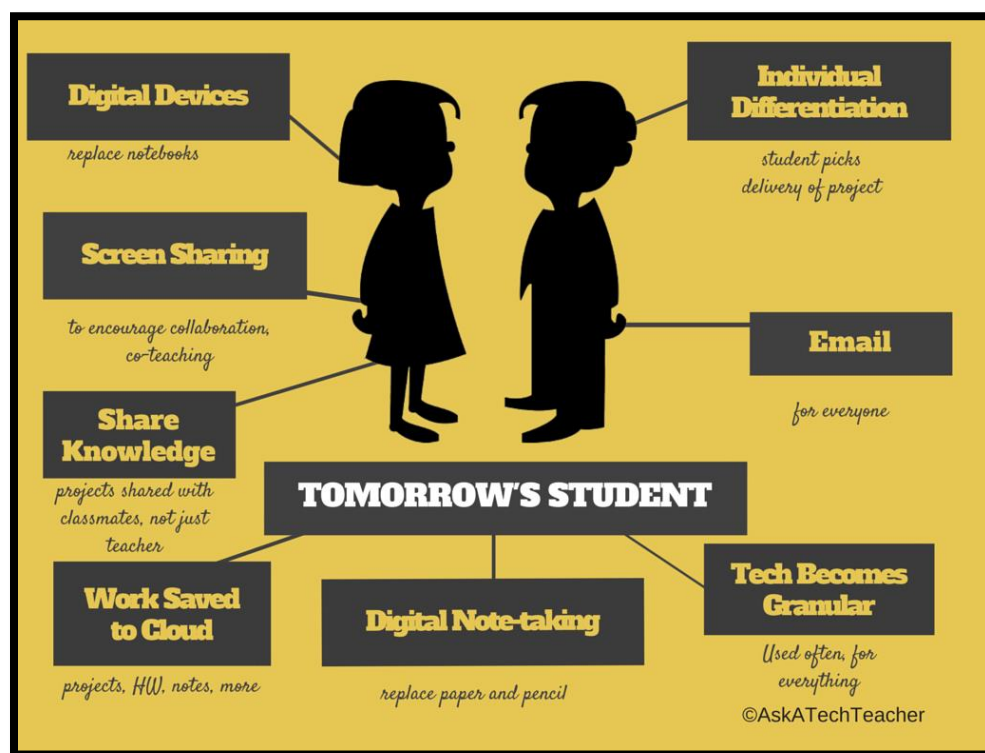
Or you are the class teacher, a tech enthusiast with a goal this year—and this time you mean it—to integrate the wonders of technology into lessons. You've seen it work. Others in your PLN are doing it. And significantly, you want to comply with Common Core State Standards, ISTE, your state requirements, and/or IB guidelines that weave technology into the fabric of inquiry.

You are a homeschooler. Even though you're not comfortable with technology, you know your children must be. You are committed to providing the tools s/he needs to succeed. Just as important: Your child WANTS to learn with these tools!

How do you reach your goal? With this curriculum. Teaching children to strategically and safely use technology is a vital part of society and should be part of every school's curriculum. If not you (the teacher), who will do this? To build Tomorrow's Student (*Figure 1)* requires integration of technology and learning. We show you how.

How to Use This Book

Figure 2a shows what's at the beginning of each lesson. *Figure 2b* shows what you'll find at the end:

- *Academic Applications*
- *Assessment Strategies*
- *Big Idea*
- *Class Warm-up*
- *Essential Question*

- *Material Required*
- *Problem solving*
- *Skills*
- *Standards*
- *Steps*

- *Teacher Prep*
- *Time Required*
- *Vocabulary*

Figure 2a—Beginning of each lesson; Figure 2b—end of each lesson
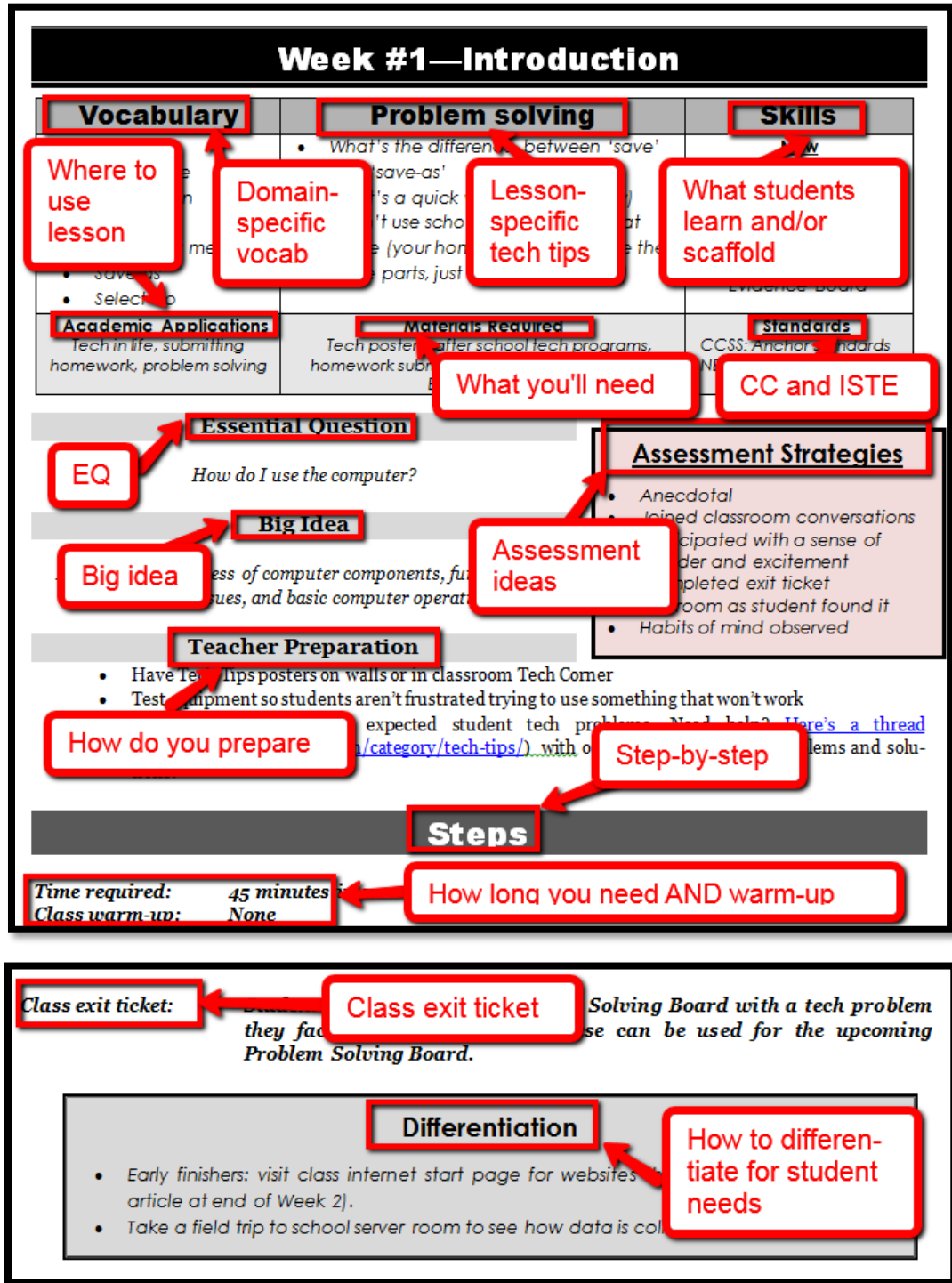
- *Class differentiation strategies*
- *Class exit ticket*

The curriculum map in *Figure 3* shows what's covered in which grade. Where units are taught multiple years, teaching reflects increasingly less scaffolding and more student direction.

Figure 3—Curriculum Map—K-8

	Mouse Skills	Vocabulary - Hardware	Problem-solving	Platform	Keyboard	WP	Slide-shows	DTP	Spread-sheet	Google Earth	Search/ Research	Graphics/	Co-ding	WWW	Games	Dig Cit
K	☺	☺	☺	☺	☺					☺		☺	☺	☺		☺
1	☺	☺	☺	☺	☺			☺	☺	☺		☺	☺	☺		☺
2		☺	☺	☺	☺	☺	☺	☺	☺	☺		☺	☺	☺		☺
3		☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺		☺
4		☺	☺		☺	☺	☺	☺	☺	☺	☺	☺	☺	☺		☺
5		☺	☺		☺	☺		☺	☺	☺	☺	☺	☺	☺		☺
6		☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺		☺
7		☺	☺	☺	☺	☺			☺	☺	☺	☺	☺	☺	☺	☺
8		☺	☺	☺	☺	☺			☺	☺	☺	☺	☺	☺	☺	☺

If you're the grade-level teacher, here's how to use the map:

- Determine what skills were covered earlier years. Expect students to transfer that knowledge to this new school year.
- Review the topics and skills, but don't expect to teach.
- If there are skills listed as covered prior years, confirm that was done. If they weren't (for whatever reason), when you reach lessons that require the skills, plan extra time.

Figure 4 is a month-by-month curriculum map for this grade level. In the student workbook, students complete this themselves or as a group when they finish each lesson.

Figure 4—Curriculum Map—2nd grade, month-to-month

	Sept **Wk1-4**	Oct **Wk5-8**	Nov **Wk9-12**	Dec **Wk13-16**	Jan **Wk17-20**	Feb **Wk21-24**	March **Wk25-28**	April **Wk29-32**
Blogs								
Class mgmt tools	X							
Coding/Programming		X						
Communication		X	X	X	X	X		X
Computer etiquette	X							
Critical thinking	X		X					
DTP				X				
Digital Citizenship	X					X	X	

Topic								
Google Earth		X						
Graphics			X	X	X	X		
Hardware	X	X						
Internet	X		X	X	X	X	X	
Internet privacy	X						X	
Keyboarding	X	X	X	X	X	X	X	X
Problem solving	X	X	X	X	X	X	X	X
Publishing/sharing			X				X	X
Research		X					X	X
Slideshows					X	X	X	X
Speaking and Listening								X
Spreadsheets								
Visual learning		X		X	X	X	X	X
Vocabulary	X	X	X	X	X	X	X	X
Webtools			X	X	X	X	X	X
Word Processing			X		X		X	

Some topics are covered every month. The strategy: spiral and scaffold learning until it's habit.

Here are hints to assist using this curriculum:

- Get free curriculum-aligned resources at our online resource website (shown earlier). If you have difficulty, email askatechteacher@gmail.com with questions. Here, you get weekly videos on how to teach the upcoming lesson, how-to videos on skills, and more.
- Invest in student digital workbooks (sold separately through Structured Learning), perfect student-centric companions to your teacher guide. Here is how to use them:

  o *Full-color projects complete (licensing may vary depending upon the plan your school selected).*
  o *With nominal direction, students learn tech. This is perfect to teach technology across classes and to develop good digital citizens.*
  o *Workbooks can be shared and students add their own notes, how-tos and more.*
  o *Students can work at their own pace.*

- If you want to use student workbooks in your class, here's how:

  o *buy a multi-user license to install workbooks on multiple devices (even at home with some licenses)*
  o *provide a weekly preview by reviewing the lesson on the class screen*

Figure 1--Student workbook
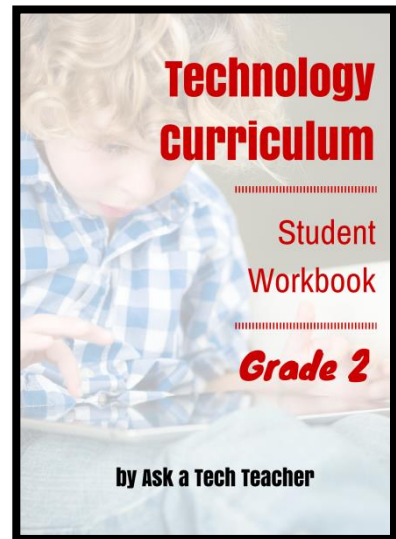
- Teach lessons in the order presented in the book (grades K-5). Lessons introduce, reinforce, and circle back on skills and concepts. Certain skills scaffold others so you want them solid before moving on. Resist the urge to mix up lessons, even if it seems your perfect time for a particular project comes earlier/later than placement in the book. **One exception: Coding/Programming**. Unpack this lesson when it works best for you.
- Personalize the skills taught in each lesson to your needs with 'Academic Applications'. These are suggestions for blending learning into your existing curriculum.
- Each lesson starts with a warm-up to get students back into tech and give you time to finish up a previous class. This is especially useful to the tech teacher and the LMS.
- Each class includes an Exit Ticket to wrap up learning.
- 'Teacher Preparation' often includes chatting with the grade-level team. Why?

  - *tie tech into their inquiry*
  - *offer websites for early-finishers to address topics*

- Check off completed items on the line preceding the activity so you know what to get back to when you have time. If you have the ebook, use iAnnotate, Notable (Google for websites), or another annotation tool that works for your devices.
- We understand when kids and technology collide, sometimes the class is too excited about the learning to move on. Two solutions:

  - *Leave line in front of uncompleted activity blank and return to it when you have time. You'll notice after using this curriculum a few years that students finish material faster.*
  - *Take an extra week. Most school years run 35-40 weeks. This book includes 32 lessons. This provides flexibility also for missed time due to holidays, snow days, or field trips.*

- Don't skip the 'Problem Solving' section, even if the problems don't come up in your class. Bring them up! These are important scaffolding for student ability to think critically and troubleshoot issues when you won't be there to help.
- Some lessons provide options. For example, Lesson 7 has multiple choices to teach coding. Review the entire lesson prior to teaching and choose the option most suited to your students. All will accomplish the tech goals.
- Is class shorter than 45 minutes? Highlight items most important to goals and leave the rest for 'later'.
- Always use lesson vocabulary. Students gain authentic understanding of word use by your example. A complete glossary of lesson vocabulary can be found in the resource website (link

mentioned earlier). Here, you'll find several hundred easy-to-understand definitions of domain-specific tech words.

*Figure 6—Glossary of tech ed vocabulary*
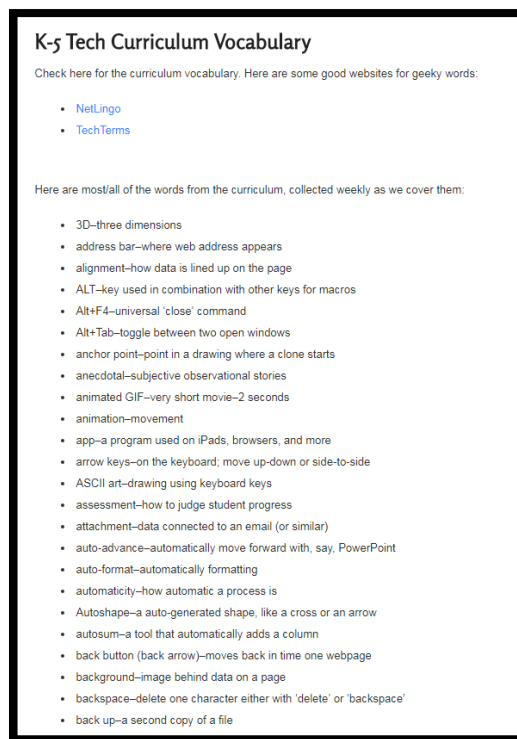
- Expect students to be risk takers. Don't rush to solve their problems. Ask them to think how it was done in the past. Focus on problems listed in the lesson, but embrace all that come your way.
- Expect students to direct their own learning. You are a 'guide on the side'. You are a facilitator, not lecturer. Learning is accomplished by both success and failure.
- Encourage student-directed differentiation, opportunities for them to present their knowledge in ways suited to their abilities. If the Big Idea and Essential Question can be accommodated in other ways, embrace those.
- If you have the digital book, zoom in on posters, rubrics, lessons to enlarge as needed.
- Use as much technology as possible in your classroom—authentically and agilely. Make it adaptive and native. Encourage students to do the same whether it's a smartphone timing a quiz, a video of activities posted to the class website, or an audio file with student input. If you treat tech as a tool in daily activities, so will students.
- Remind students they've learned and understand skills. Check them off in the Scope and Sequence additional times as you circle back on them.

- Lessons expect students to develop 'habits of mind' (*Figure 7* and the article at the end of Lesson #1). In a sentence: Habits of Mind ask students to engage in their learning, not simply recite or memorize.

Figure 7—Habits of Mind
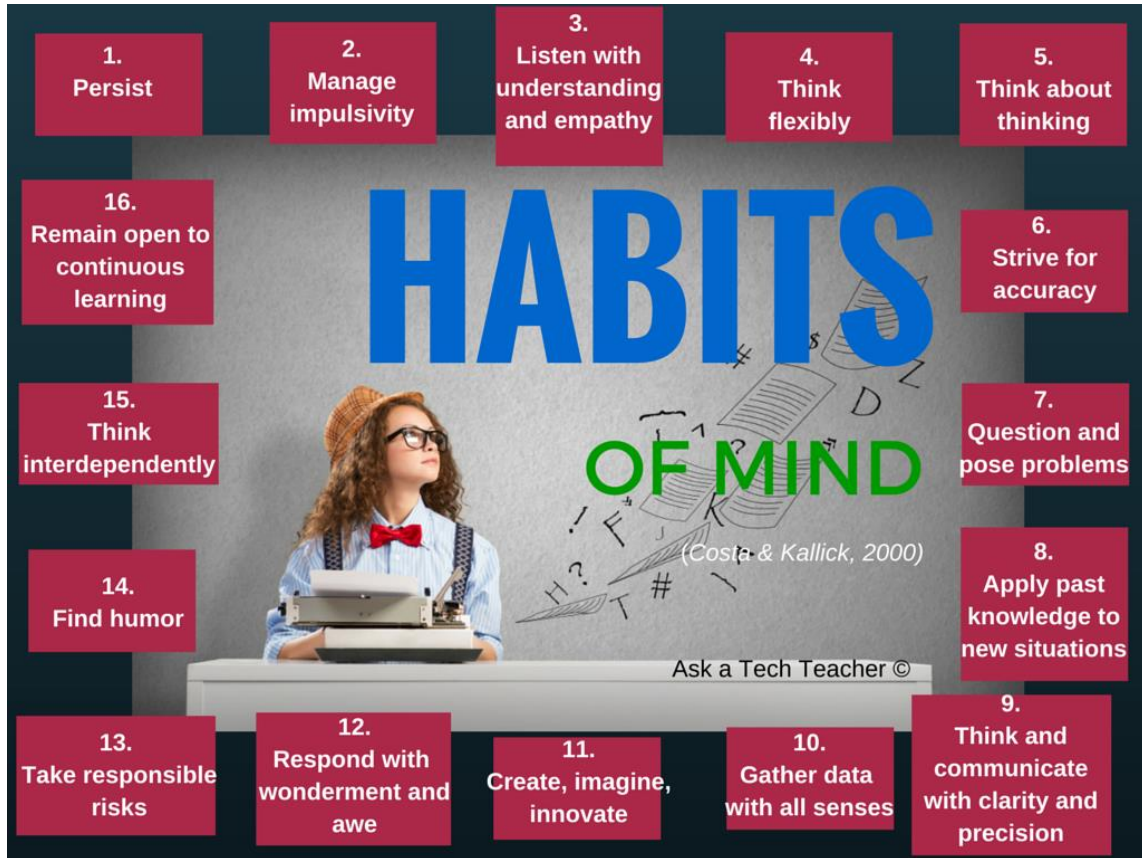
- If you need resources on specific topics, visit Ask a Tech Teacher resource pages.
- Look for the following icons in the book:

  - *video*

  - *work with a partner*

  - *an article*

  - *a topical poster (in the Appendix)*

  - *annotatable material available in student workbooks (like rubrics)*

- Every effort has been made to accommodate Chromebooks, PCs, Macs, iPads, and other digital devices. You will often see examples in multiple platforms. If the activity is impossible in a particular digital device (i.e., iPads don't have mouses; software doesn't run in Chromebooks), focus on the **Big Idea and Essential Question**—the skill taught and its application to inquiry. Adapt instructions to the tool you use as you work through the steps.

Figure 8—Compatible digital devices

A desktop PC, iMac, laptop, MacBook, Chromebook, iPad, or smartphone

- Throughout the year, circle back on lessons. It takes five times seeing a skill to get it—

  - o *First:*   *They barely hear you*
  - o *Second:*   *They try it*
  - o *Third:*   *They remember it*
  - o *Fourth:*   *They use it outside of class*
  - o *Fifth:*   *They tell a friend*

- **Need more help?** Go to Ask a Tech Teacher©, run by teachers using the curriculum or the companion resource website (mentioned earlier). Leave a comment or question. You can also email admin@structuredlearning.net or askatechteacher@gmail.com.
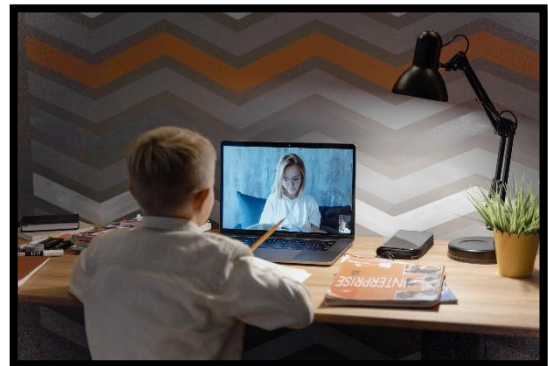
Typical Lesson

Each lesson requires about 45 minutes a week, either in one sitting or spread throughout the week, and can be unpacked:

- *In the grade-level classroom*
- *In the school's tech lab*

Both are covered in each lesson. In general terms, here's how to run a lesson in **the tech lab**:
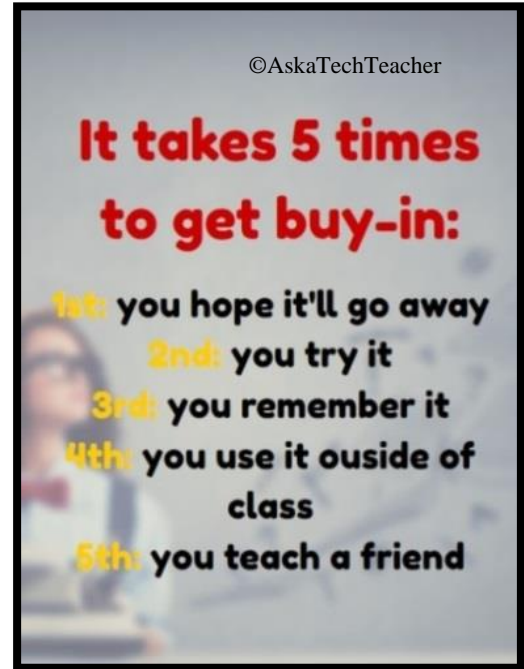

- Post a **simple written schedule** on class screen:

  - o *Warm up*
  - o *Main activity*
  - o *Exit ticket*

  This gives students a visual guideline to get started. Add it to your class blog for students not present. Expect students to start the warm-up when they arrive to class.

- **Warm up about 10 minutes,** often with typing practice. Youngers can work on alphabet sites such as Fischer Price's Learning Letters Puppy app.
- Three students complete **Board presentations** (grades 3-8).
- If it's the end of a grading period, use **Scope and Sequence to review** skills accomplished.
- If starting a **new project, review it** and take questions. If you're in the middle of one, students use the balance of class to work towards completion. Monitor activities, answer questions, help as needed.
- As often as possible, give **younger students two weeks** to finish a project—one to practice, one to save/export/share/print. This redundancy reinforces new skills and mitigates stress. If it's week two, start with the project and finish with typing so students have ample time to work.
- List age-appropriate websites that **tie into inquiry** for students who complete the current project on class internet start page. Students know websites on this page can be used during free time.
- **Class exit ticket** might include lining up in arrays, answering a poll posted on the class screen, or simply leaving stations as students found them.
- Always **use tech wherever possible.** Model what you ask of them.

Figure 2--Five times for buy-in

©AskaTechTeacher

It takes 5 times to get buy-in:

1st: you hope it'll go away
2nd: you try it
3rd: you remember it
4th: you use it ouside of class
5th: you teach a friend

Here's how to run the lesson in **the grade-level classroom**:

- Take the lesson pieces mentioned above and scatter them throughout the week. For example:

  o *3-10 minutes for the class warm-up—at the start the week*
  o *10-15 minutes keyboarding practice—any day*
  o *10-15 minutes Board presentations—any day*
  o *15-35 minutes for the project—any day*
  o *2-3 minutes for the class exit ticket—to reinforce learning*

- Check off accomplished activities so you know what remains each week.
- In every class, **use tech wherever possible.** Be the model for what you're asking of them.

Here are useful pieces to extend this curriculum (most found through Structured Learning):

- *Teacher manual—the roadmap. That's this book.*
- *Student workbooks—allow students to be self-paced*
- *Digital Citizenship curriculum— if this is a focus of your school*
- *Keyboarding Curriculum— if this is a focus of your school*

- *Class internet start page—provides a class agenda, themed links, and more. Created by you, the teacher, in Protopage (Figure 10a), Diigo, LiveBinders (Figure 10b), Symbaloo (Figure 10c) or another option.*

Figure 10a—Start page using Protopage; 10b—LiveBinders; 10c—Symbaloo

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About the Authors

Ask a Tech Teacher *is a group of technology teachers who run an award-winning resource blog. Here they provide free materials, advice, lesson plans, pedagogical conversation, website reviews, and more to all who drop by. The free newsletters and articles help thousands of teachers, homeschoolers, and those serious about finding the best way to maneuver the minefields of technology in education.*

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Table of Contents

Articles

Intentionally deleted

K-5 TECHNOLOGY SCOPE AND SEQUENCE©

Aligned with ISTE (International Society for Technology in Education) and Common Core State Standards
Check each skill off with I (Introduced), W (Working on), or M (Mastered)
Organized by ISTE Standards 1-7

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Lesson #2 Digital Tools in the Classroom

Vocabulary	Problem solving	Skills
• *Annotation* • *Decode* • *Desktop* • *Digital tool* • *Flying windows* • *Font* • *Icons* • *iPad* • *Menus* • *Network* • *Right click* • *Start button* • *Taskbar* • *Toolbar*	• *Monitor doesn't work (check power)* • *Shift doesn't work (Check caps lock)* • *Can't find drawing program (use 'search' on Start button)* • *What color do I use to annotate?* • *How do I print (Ctrl+P)* • *Taskbar's gone (push flying windows)* • *I use Caps Lock to capitalize a letter (for one letter: Use Shift)* • *Why can't I touch neighbor's mouse? (help—with your words)* • *Where's class internet start page (where was it last year?)* • *There are too many digital tools*	**New** *Log-ins* *Class website* *Annotation tools* **Scaffolded** *Digital citizenship* *Digital tools* *Digital portfolio* *Annotate workbooks (if using student workbooks)*
Academic Applications *General, digital citizenship, digital literacy*	**Materials Required** *Internet, digital devices, drawing program, keyboarding software, student workbooks (if using)*	**Standards** *CCSS Student Portrait NETS: 1b, 4b*

Essential Question

How does technology make learning easier and more authentic?

Big Idea

Students develop an awareness of the digital tools that contribute to education

Teacher Preparation

- Have class digital tools ready to use.
- Know student log-ins for digital tools that require one.
- Talk with grade-level team so you tie into conversations.
- Integrate domain-specific tech vocabulary into lesson.
- Know which tasks weren't completed last week.
- Know whether you need extra time to complete this lesson with your student group.

Assessment Strategies

- *Followed directions*
- *Anecdotal observation*
- *Able to annotate workbook (if using workbooks)*
- *Completed exit ticket*
- *Joined class conversations*
- *Made decisions that followed class rules*
- *Left room as s/he found it*
- *Higher order thinking: analysis, evaluation, synthesis*
- *Habits of mind observed*

Steps

Time required: *45 minutes in one sitting or spread throughout the week*
*Class warm-up:*   *None*

_____Review hardware (adapt this to your particular digital device):

- *mouse buttons—left and right, double click, scroll; how to hold mouse*

- *CPU—power button, disk drives, connections*
- *monitor—power button, screen*
- *headphones—volume, port*
- *keyboard—separate or built-in*
- *peripherals—what are those?*

_____Find the parts listed in *Figure 15a* on your school's devices or *Figure 15b* for iPads (See *Assessment 1* and *2* at end of lesson). For example, where are 'headphones'? Or mouse? USB Port?   The microphone? And the charging dock on a desktop computer? What are the smartphone parts (see *Assessment 3* at end of lesson)?

Figure 15a—Parts of computer; 15b—Parts of iPad
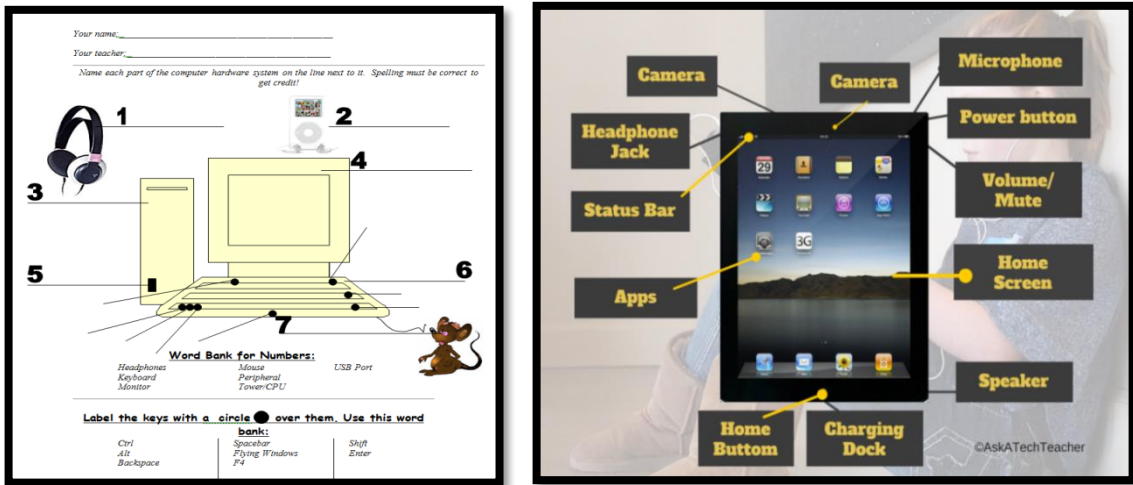
_____Have students review mouse hold with a neighbor (see *Figure 16*).

Figure 16—Mouse hand position
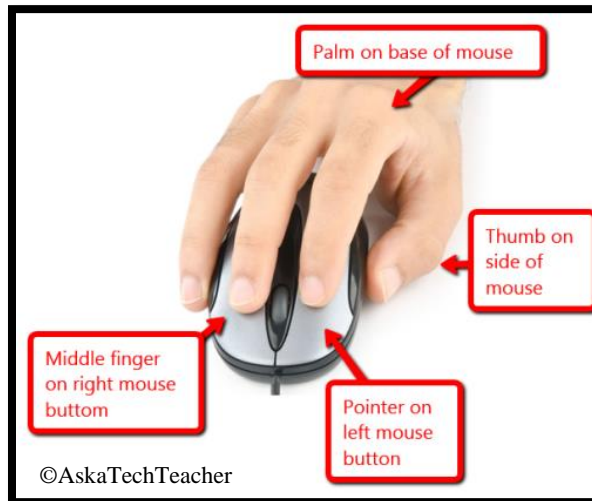
_____If using student workbooks, have students annotate their copy of the hardware parts (*Assessment 1, 2* or *3*) with a tool like Notability, iAnnotate, Notable, or Adobe Acrobat. More on this digital tool later in the lesson.

_____Review how parts connect—behind CPU, under table, in ports, or built in. Adapt to student digital device at school and home whether a laptop, Chromebook, iPad, or desktop.
_____Discuss the proper care of a digital device. What rules would students add to the following list?

- *no food or drink around computer—not even water*
- *no banging on keyboard, monitor or any other part of computer*
- *demonstrate how to help a neighbor: Use words, don't touch their computer parts*

_____Discuss the difference between:

- *menus (Figure 17a)*
- *ribbons (Figure 17b)*
- *toolbars (Figure 17b and 17c)*
- *taskbar (Figure 17d)*

_____These organizational techniques are confusing. Circle back on them often.

Figure 17a—Menu bar; 17b and c—Toolbar; 17b—Ribbon; 17d—Taskbar
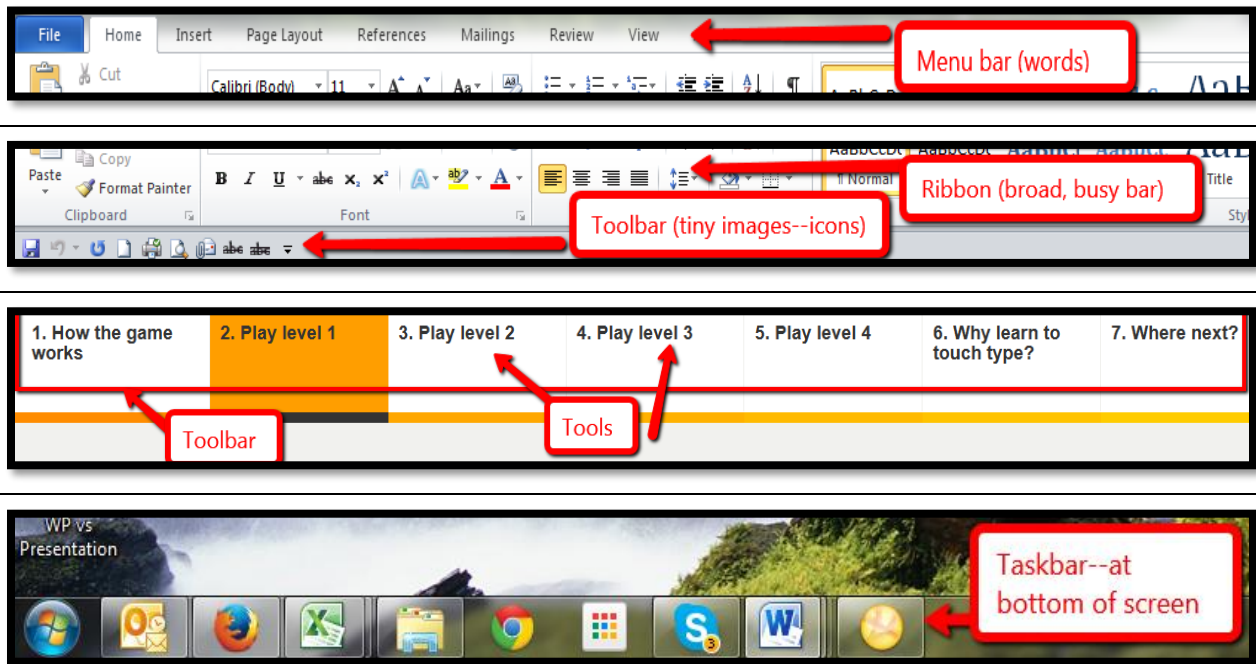
Log-ins

_____Review how students log into digital devices using user names and passwords.
_____Required log-ins may include:

- *class etextbooks*
- *keyboarding program*
- *class website (with grades)*
- *class math and/or reading program*
- *online webtools*

_____Have a method for tracking log-ins. It might be as simple as a 3x5 card (*Figure 18*):

- *Keep a physical copy by the student's seat or in their personal binder.*
- *Keep a digital copy in the student's digital portfolio.*
- *Take a snapshot to keep on their digital device for quick reference.*

Figure 18—Curation of log-ins

| User Name/Passwords		
PROGRAM	UN	PASSWORD
Keyboarding Program		
Math Program		
Computer		
Class wiki		
Add'l		

_____Have students log into school digital portfolios—website, class pages, other.

Desktop

_____Review the screen that greets students when they sign onto their digital device. For example, *Figure 19* is a Windows desktop and *Figure 20* is for a Chromebook:

- *clock*
- *icons*
- *recycle bin*
- *screen*
- *start button*
- *taskbar*
- *tasks*

Figure 19—Desktop
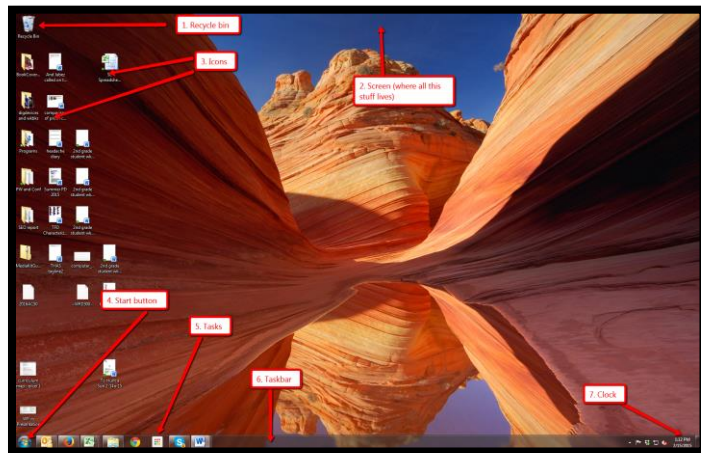
_____Where are these Windows desktop parts on a Chromebook screen (*Figure 20*):

Figure 20—Chromebook desktop

Class Digital Tools

Student workbooks

_____If using student workbooks that go along with this curriculum, introduce them now. Show how to open them, find rubrics and project samples, and take notes using the annotation tool. Students can circle back to review concepts or forward to preview upcoming lessons.

Annotation Tool

_____If you're using student workbooks, show how to annotate with a tool such as iAnnotate (*Figure 21a*), Notability (*Figure 21b*), Notable for Chromebooks, Adobe Acrobat (*Figure 21c*)) or another tool available in your school.
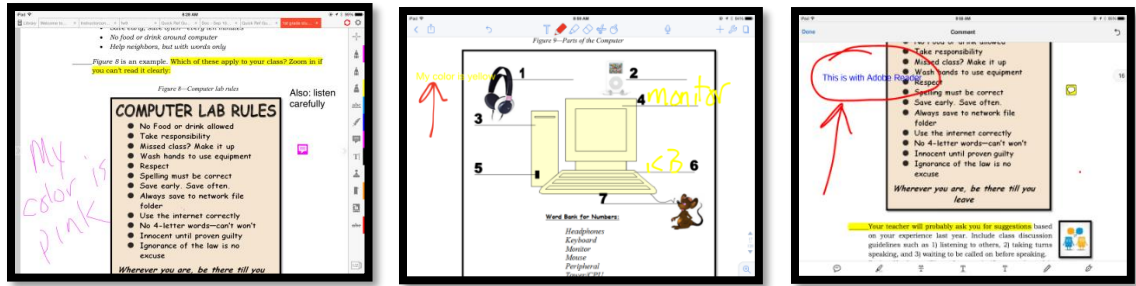
_____If students are sharing a PDF (for example, it's loaded on a computer that multiple classes visit), show how to select a personal color that's different from other students.

_____Review options available in the annotation tool you use, such as:

- *highlighting*
- *text*
- *note*
- *freeform*

Figure 21a—PDF annotation with iAnnotate; 21b—Notability; 21c—Acrobat

Student digital portfolios

_____Discuss how students use digital portfolios (also known as digital lockers or digital binders):

- *store work (in Cloud) required in other classes or at home*
- *interact, collaborate, and publish with peers, experts, or others*
- *contribute to project teams*
- *edit or review work in multiple locations*
- *submit class assignments*

_____There are a variety of digital portfolios that satisfy some or all of the above: 1) folders on school network, 2) fee-based programs, 3) cloud-based storage like Dropbox, 4) online collaborative sites like Google Classroom, or 5) an LMS like Otus (Google for addresses if interested).
_____Have students practice by uploading something to their digital portfolio.

Class Calendar

_____Demonstrate how to access and edit (if they are permitted to do this) class calendar that tracks due dates, class events, and other important information.

Figure 22a—Class calendar 22b—Padlet; 22c—DTP

_____Try Google Calendar, Office 365, a Padlet calendar template (*Figure 22b*), or another option (i.e., Publisher shown in *Figure 22c*). If possible, embed it into class website.

_____Assign a student each month to be responsible for adding events to the class calendar.

Class Internet Start Page

_____An internet start page is a website that comes up when students open the internet. It organizes critical content into a single location and curates links students will use on a weekly basis.

_____Include what students visit daily (i.e., guidelines, calendar, 'to do' list, typing websites, research locations, sponge sites, calculator) as well as info specific to current project.

_____*Figure 23* is an example using Protopage.com.

Figure 23—Internet start page
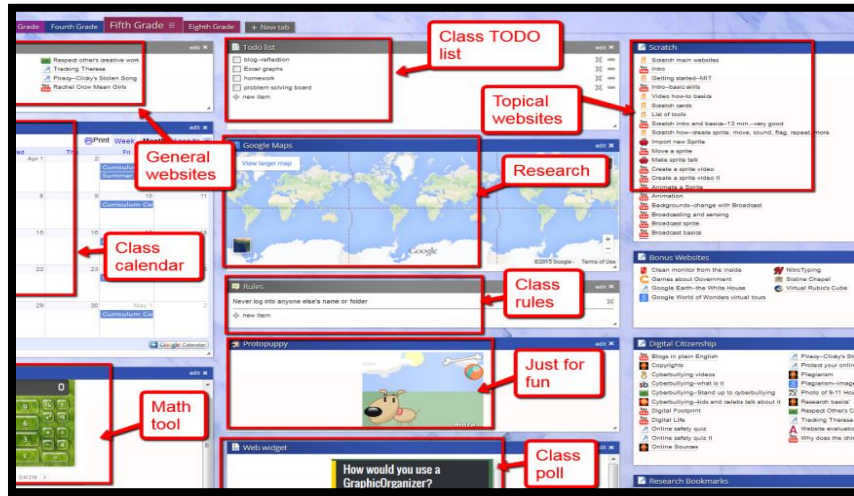
Class website

_____Available with Google Apps for Education, these websites encourage reflection, organization, logical thinking, and embedding of sharable projects i.e., Tagxedos and Animotos. If your school doesn't have Google Apps, free websites can be created at Weebly, Wix, or a blog account like WordPress (Google for addresses).

Google Apps (or Office 365)

_____Show students how to access their student account, use the storage drive, and share documents with others. Demonstrate similarity between Google Docs/Sheets/Presentation and Office.

Class Webtools

_____Discuss the wide variety of digital tools students will use this year to complete projects. Let students know that you are open to alternative suggestions. For example, if you suggest Wordle, a student can request Tagxedo. Approval is required, but it will be granted if the tool fulfills project needs. Expect students to use evidence to build their case, compare-contrast their tool to your suggestion, and draw logical conclusions.

_____*Figures 24a-d* are examples of webtools you might use with your students. These may include:

- *online math program (i.e., Khan Academy)*
- *digital keyboarding program (i.e., Type to Learn, Typing Web)*
- *an avatar creator for digital citizenship*
- *a badge to assess progress*
- *RAZ Kids for close reading*

Figure 24a—Avatar; 24b—DTP badge; 24c—digital storytelling; 24d—RAZ Kids

_____If any class requires a log in, have students test their log-in.

Vocabulary Decoding Tools

_____Show students how to access the native apps or webtools available on their digital devices used to decode vocabulary. Depending upon the device, these will be on the homepage, the browser toolbar, a shortkey, or a right click. Show students how to quickly look up words rather than skipping over content that includes the word. Let them practice with several words in this lesson's *Vocabulary* list.

_____Options for dictionary tools include:

- *Kids Wordsmyth*
- *Merriam-Webster for Kids*
- *right click on word in MS Word and select 'Look up'.*
- *right click in Google Apps (i.e., Google Docs) and select 'research'.*

_____Have students attempt to access all school digital tools.

Class exit ticket: *Have students vote in a poll for which tool they'll use the most this year.*

Differentiation

- *Take a field trip to the server room--track cables from class to the switches and modem.*
- *Visit grade level classroom and explain how digital devices are the same there as in tech lab—on a smaller scale (see directions at end of lesson, "*Take Tech to Classroom*").*
- *Those who finish: Go to class internet start page and visit websites that tie into class conversations. If necessary, go over how to access this link with class.*
- *Replace with one from Inquiry-based Teaching with PBL (from Structured Learning).*

HARDWARE—PARTS OF THE COMPUTER

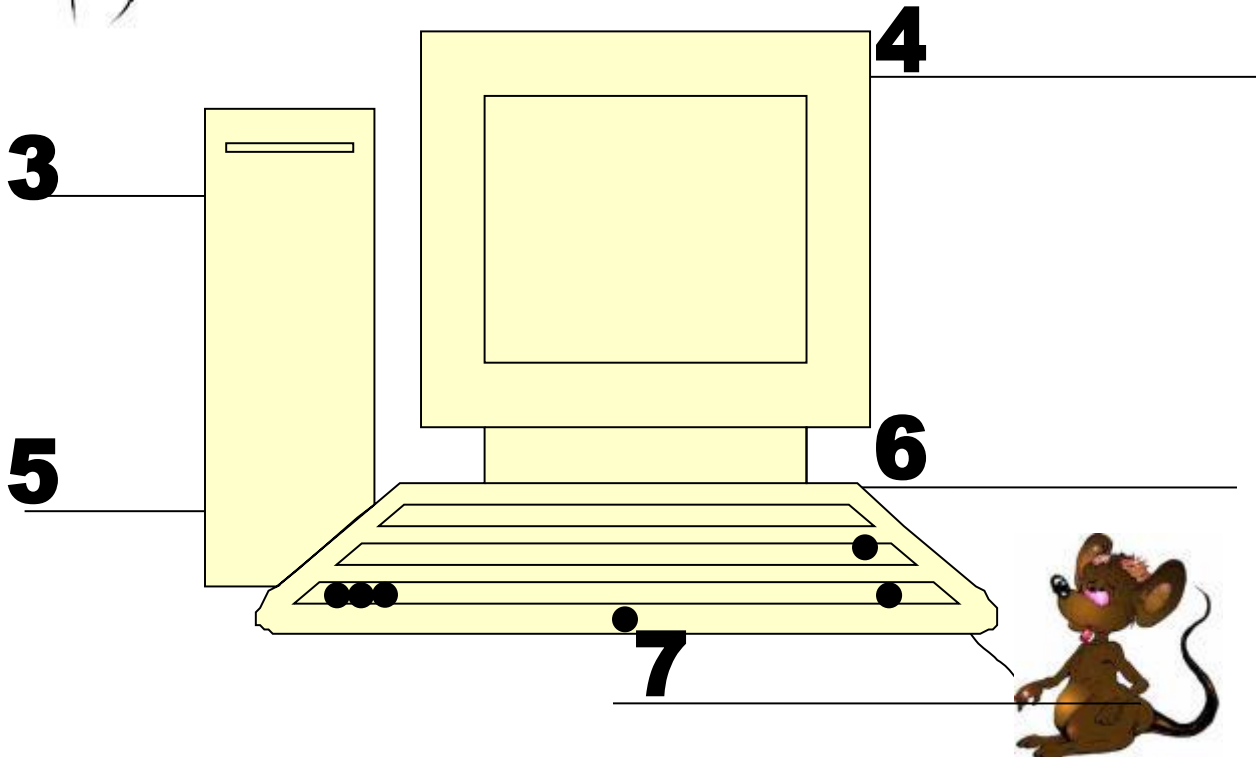*Name each part of computer Draw your own lines for key names. Spelling must be correct to get credit*

1 _____

2 _____

4 _____

3 _____

5 _____

6 _____

7 _____

Word Bank:

Headphones	*Mouse*	*USB Port*
Keyboard	*Peripheral*	
Monitor	*Tower/CPU*	

Label the keys with a circle ⬤ over them. Use this word bank:

Ctrl	*Spacebar*	*Shift*
Alt	*Flying Windows*	*Enter*
Backspace	*F4*	

Parts of an iPad
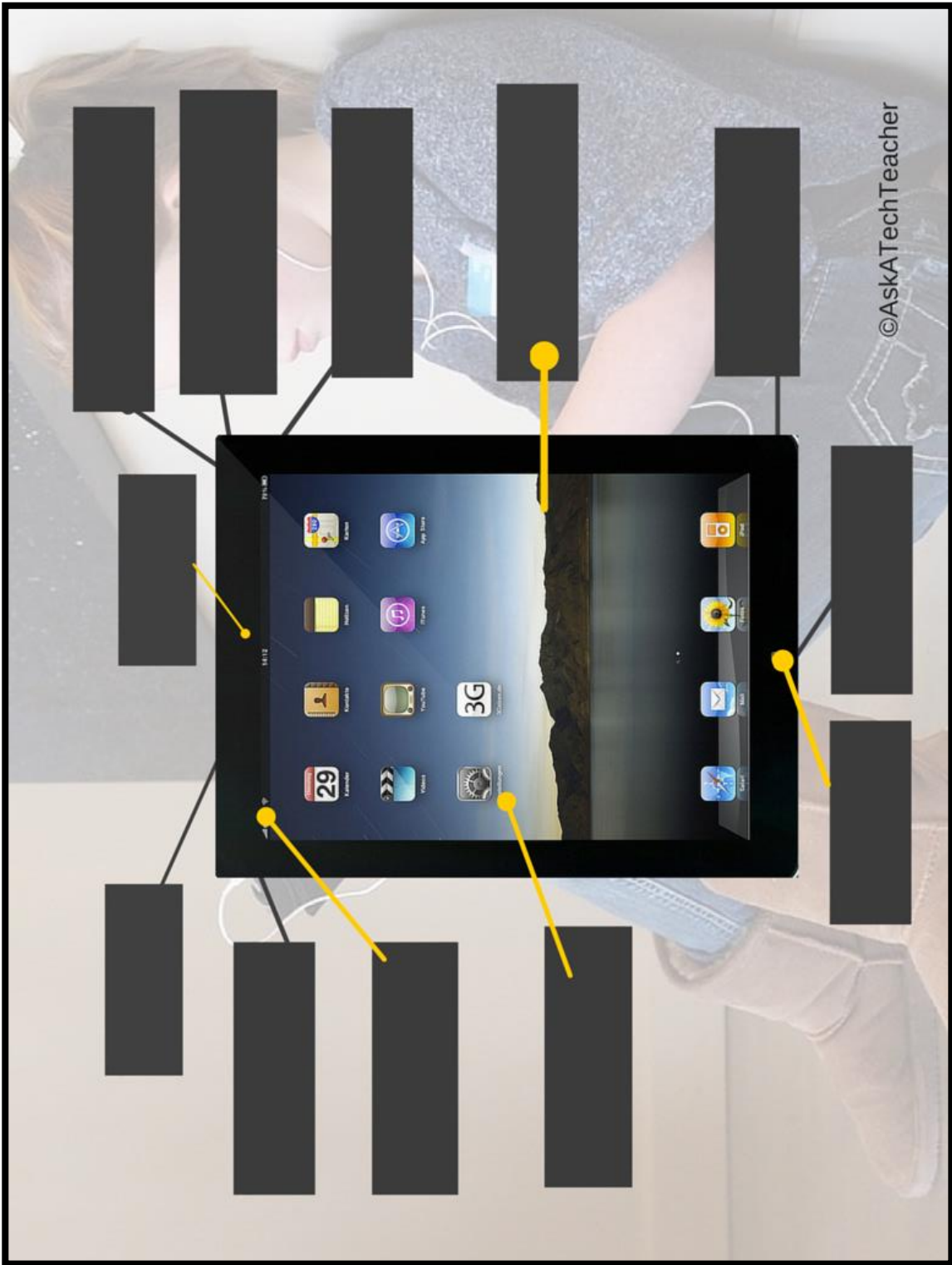
PARTS OF THE SMARTPHONE

Adapt this to your needs
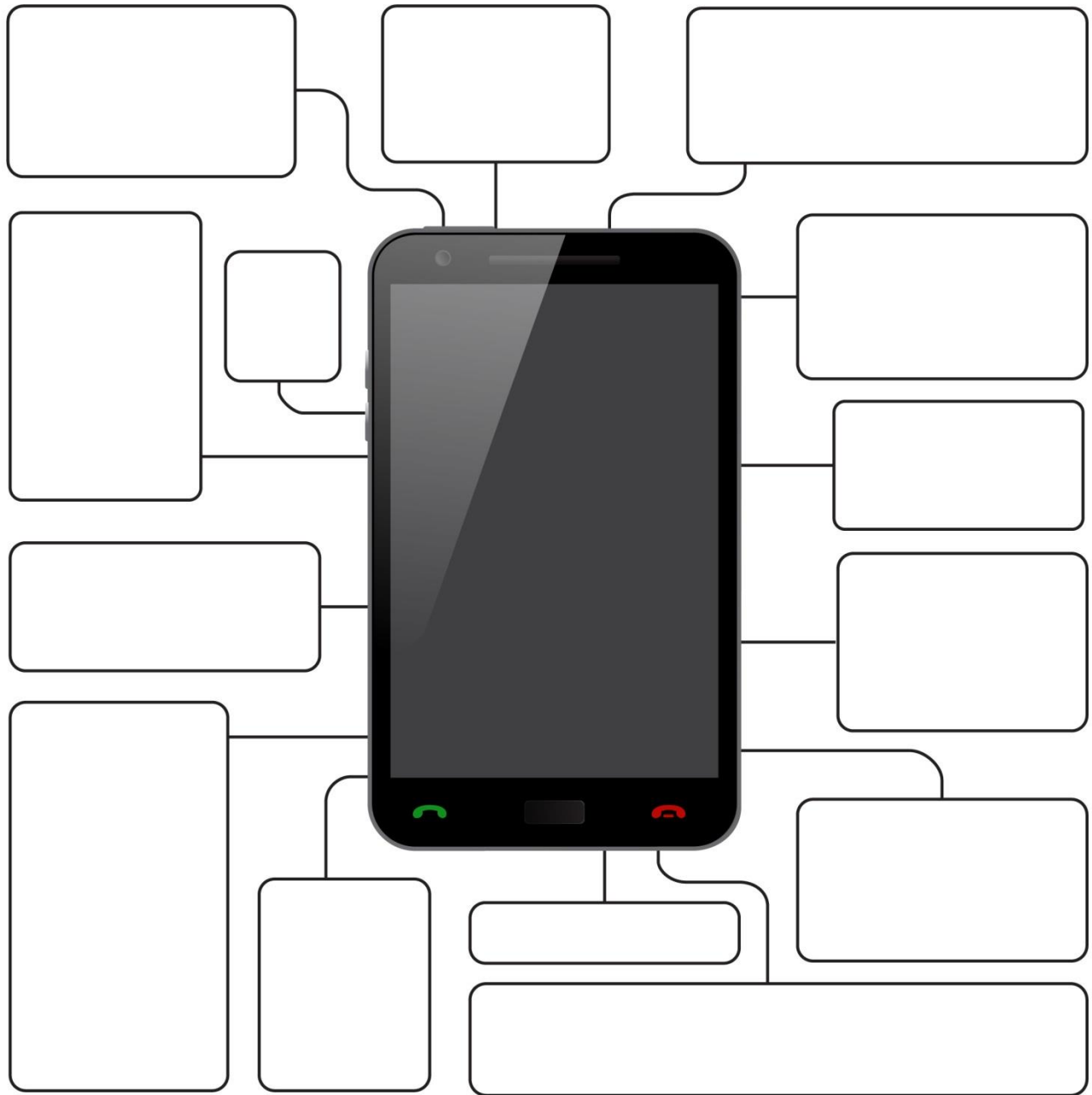
<u>Do You Make These 9 Mistakes?</u>

...with your students/child's technology education?

- Show how to do something rather than allowing her/him to discover
- Do for them rather than let them do it
- Say 'no' too often (or the other enthusiasm-killer, Don't touch!)
- Don't take them seriously
- Take technology too seriously. It's a tool, meant to make life easier. Nothing more.
- Underestimate their abilities
- Over-estimate their abilities
- Give up too quickly
- Think there's only one way to do stuff on the computer

I promise—none of these are necessary to thrive in technology. Children walk in the classroom loving learning. They can't break most computer parts. They *want* to try things out and do it themselves.

Let them. They may discover a Better Mousetrap.

After fifteen years, I still learn from my students. Children are serious about having fun. It's one of their jobs. Technology is how they do this. Feel free to join them. You'll be surprised how much they know.

But, sometimes, they need help. Offer it with a guiding hand.
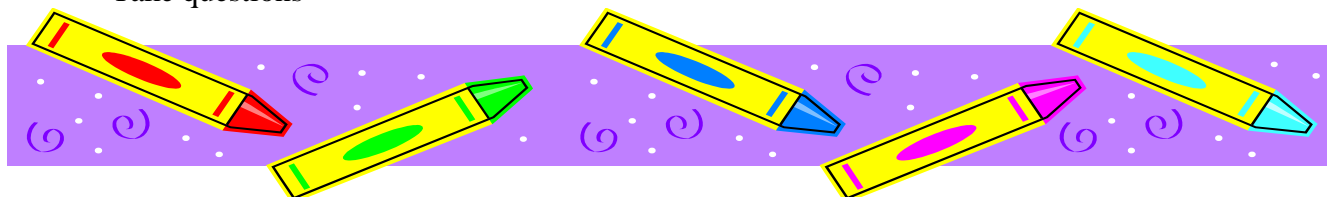
Take Tech into the Classroom

When the classroom teachers feels students are settled into the class routine enough to get started on the class pod of computers, make time to join them for center time and transfer tech class knowledge to the class.

Before going:
- Make sure the class computers work
  - *CPU*
  - *headphones*
- Make sure class computers have all links required for class work. What are the teacher's favorites?
  - *The school website*
  - *Tech lab class internet start page*
  - *Typing practice program*
  - *Starfall*
  - *A math program*
- Make sure they are set up the same as the tech lab (or know where the differences are so you can explain to students

During your visit, go over these with students:
- Same rules that apply in the tech class apply in the classroom (add your rules)
  - *No food or drink by computers*
  - *No fooling around*
  - *No grabbing neighbor's equipment*
  - *No internet except on approved sites*
  - *Try to solve problems before asking for help (especially important because you as tech teacher won't be there to help)*
  - *Read the screen before asking for help*
  - *Leave the station the way you found it*
  - *Print only with permission*
- Practice good habits every time you sit at computer
- Take questions

Intentionally deleted

Lesson #6 Tools and Toolbars

Vocabulary	Problem solving	Skills
• *Alt* • *Ctrl* • *Double-click* • *Enter* • *Icon* • *Log-on* • *Palette* • *Port* • *Shortkeys* • *Spacebar* • *Toolbars* • *Tools*	• *My mouse doesn't work (wake it)* • *My volume doesn't work (are headphones plugged in?)* • *Double-click doesn't work (enter)* • *Students turn monitors off because they can't close programs? Have them leave monitors on at class end.* • *Trouble remembering tools? Use shortkeys.* • *I can't close the program (Alt+F4)* • *My drag-and-drop doesn't work (use left mouse button, not right)*	**New** **Scaffolded** *Tools/toolbars* *Hardware problems* *Important keys* *Shortkeys* *Keyboarding* *Symbols*
Academic Applications *Math, tech, relationships, compare-contrast*	**Materials Required** *Internet, drawing program, keyboard program, student workbooks (if using)*	**Standards** *CCSS.St. for Math.Pr #2* *NETS: 1d, 5c*

Essential Question *How do tools and toolbars help me use technology?* **Big Idea** *Use symbols to share ideas faster and more efficiently* **Teacher Preparation** • Talk with grade-level team to tie into symbols. • Know which tasks weren't completed last week. • Integrate domain-specific tech vocabulary into lesson. • Know if you need extra time to complete this lesson.	**Assessment Strategies** • *Anecdotal observation* • *Completed warm-up, exit ticket* • *Joined class conversations* • *[tried to] solve own problems* • *Decisions followed class rules* • *Left room as s/he found it* • *Higher order thinking: analysis, evaluation, synthesis* • *Habits of mind observed*

Steps

Time required: ***45 minutes in one sitting or spread throughout the week with 20 minutes set aside for Symbols lesson***

Class warm-up: ***Keyboard homerow with Popcorn Typer, Dance Mat Typing, or another that focuses on one row.***

_____Review important keys (poster in Appendix) students should know by year-end.

_____Review parts of the digital devices used in your class—CPU, monitor, keyboard, mouse, headphones, volume, printer, power buttons, USB ports, peripherals. Show how they connect to the device. Discuss troubleshooting hardware problems:

• *If volume doesn't work, check headphones and volume control.*
• *If mouse doesn't work, is it lit up (which means mouse works)?*
• *If keyboard doesn't work, does NumLock work (which means keyboard works)?*

- *If headphones don't work, are they plugged in? In correct CPU?*
- *If monitor doesn't work, is it on? Is mouse awake?*
- *If computer doesn't work, is it on? Is it hibernating?*

_____Review shortkeys students are familiar with:

- *Ctrl+P*
- *Ctrl+S*
- *Alt+F4*

- *Ctrl+V*
- *Ctrl+C*
- *Alt+Tab*

_____Remind students of the pictures they drew in 1st grade (if they used the SL tech curriculum last year) to symbolize their homeland (for example, students thought *Figures 43a-b* symbolize America).

Figure 43a-b: Pictures as symbols

_____What do the images in *Figures 44a-d* symbolize to you (or pick symbols relevant to your inquiry)?

Figure 44a-d: Common symbols
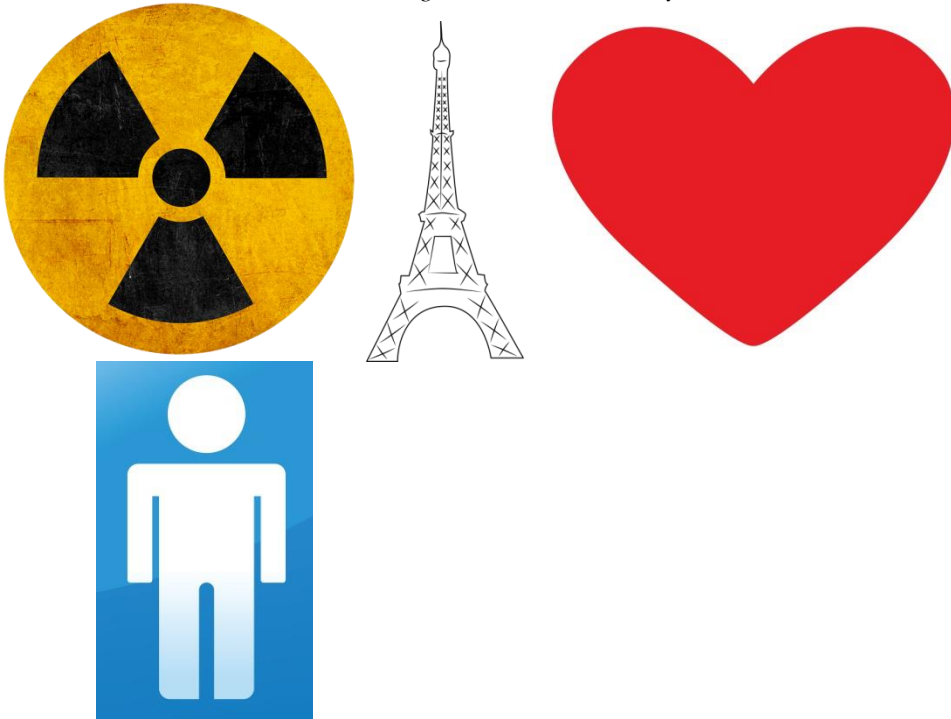
_____Discuss the idea a picture is worth a thousand words. What does that mean? Is a picture a symbol of words and thoughts?

_____Discuss math signs (*Figure 45a*) and numbers (*Figure 45b*). How are these symbols? Why are 'numbers' symbols?

Figure 45a-b: Mathematical symbols
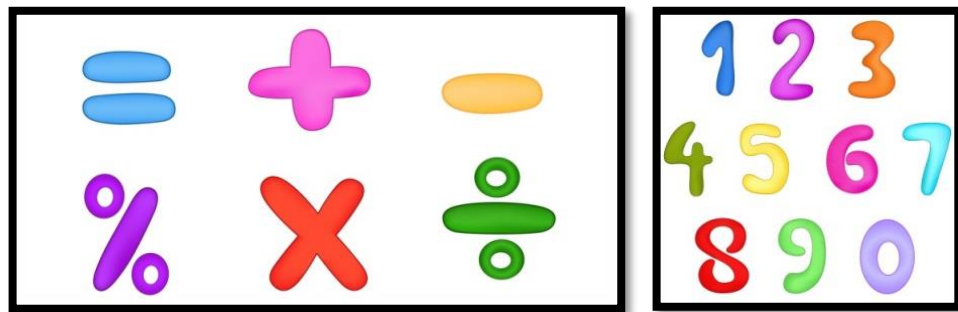
_____What are tools? Toolbars? How do they symbolize an action (*Figures 46a-b)*?

Figure 46a—Toolbar symbols; 46b—desktop icon symbols
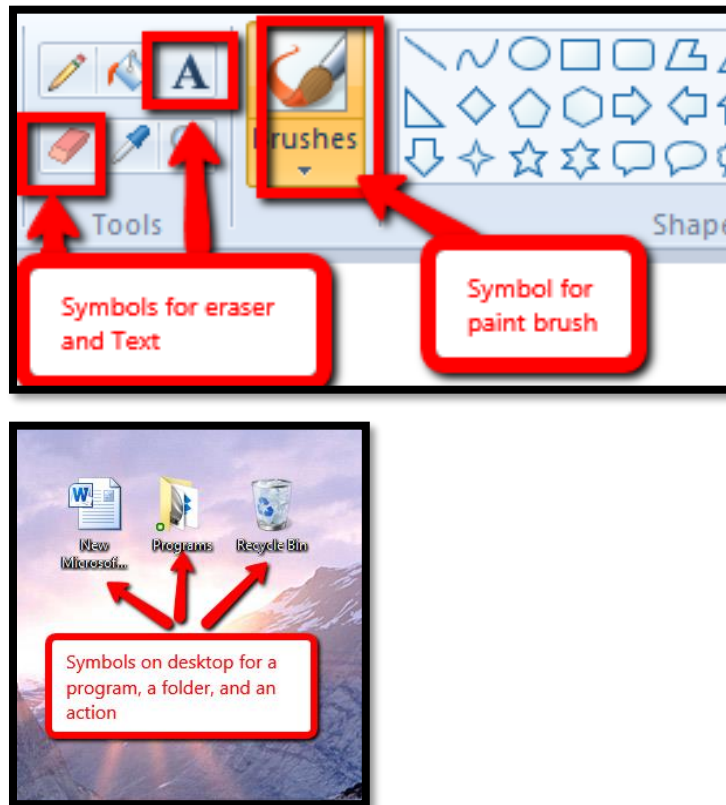
_____Open drawing program (KidPix, TuxPaint, ABCYa, other) in the digital device you use. Allow students to explore the tools and toolbars that are available.

_____If you use multiple digital devices in your classroom (say, Chromebooks and iPads), compare toolbars and tools in both. Discuss differences and reasons.

_____Draw a symbol that visually represents an idea, words, or something else.

Class exit ticket: Create a poll with a word that can be interpreted many ways. Ask students to vote on what they think the meaning is. See article at the end of Lesson on ***The Power of Symbols–What does 'Turkey' mean?***

Differentiation

- *Replace this lesson with one from Inquiry-based Teaching with PBL (from Structured Learning)).*
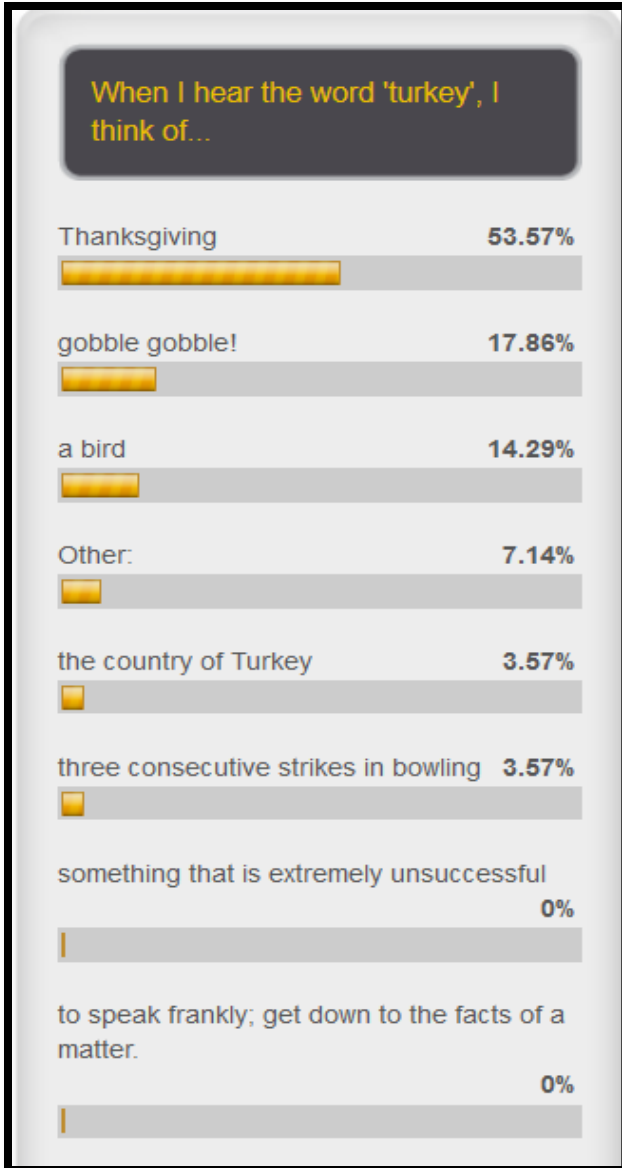
The Power of Symbols–What Does 'Turkey' Mean?

As a summation to your discussion with students on symbols, idiomatic expressions, geography, farms, or another topic, post this on your class screen. The poll includes lots of definitions for the word 'turkey'–from objective to idiomatic. Have each student come up some time during the day (or class) and make pick all those they are familiar with.

Figure 47a—Symbols poll; 47b—result of poll

When I hear the word 'turkey', I think of...

○   a bird

○   gobble gobble!

○   Thanksgiving

○   something that is extremely
     unsuccessful

○   the country of Turkey

○   three consecutive strikes in bowling

○   to speak frankly; get down to the
     facts of a matter.

○   Other: [ ]

- -

View Results

Polldaddy.com

vote

When I hear the word 'turkey', I think of...

Thanksgiving   53.57%

gobble gobble!   17.86%

a bird   14.29%

Other: 7.14%

the country of Turkey   3.57%

three consecutive strikes in bowling   3.57%

something that is extremely unsuccessful
                                                      0%

to speak frankly; get down to the facts of a
matter.
                                                      0%

Intentionally deleted

Lesson #22 My Body

Vocabulary	Problem solving	Skills
• Align • Default • Dialogue box • Export • Form • Handles • Resize • Server • Template • Text box	• *Program disappeared (check taskbar)* • *Text box is too big (resize)* • *Didn't print (select correct printer?)* • *Drawing program won't save (take screenshot)* • *Text is too big (reduce font size)* • *I can't find template (try server)* • *I can't find server (follow directions)* • *My text boxes overlap (resize)* • *Where's the camera roll?*	**New** *Camera roll* **Scaffolded** *Digital citizenship* *Using templates* *Digital tool mash-up* *Keyboarding* *Annotate workbooks* *(if using these)*
Academic Applications *Health, human body, other inquiry requiring labels*	**Materials Required** *human body template, keyboarding program, human body websites, student workbooks (if using)*	**Standards** *CCSS.ELA-Literacy.RI.2.7* *NETS: 1c, 3c-d, 4b*

Essential Question

How can a form I fill out help me remember information?

Big Idea

Typing into a form helps me to remember what I'm studying

Teacher Preparation

- Have classroom digital tools ready.
- Place human body template where students can access.
- Have list of human body websites on start page.
- Decide whether this is practice or assessment.
- Integrate domain-specific tech vocabulary into lesson.
- Know which tasks weren't completed last week.
- Know if you need extra time to complete this lesson.
- Talk with grade level team to use the same terminology.

Assessment Strategies

- *Followed directions*
- *Completed project*
- *Used good keyboarding habits*
- *Completed warm-up*
- *Annotate workbook (if using)*
- *Worked well with a partner*
- *Joined class conversations*
- *[tried to] solve own problems*
- *Decisions followed class rules*
- *Left room as s/he found it*
- *Higher order thinking: analysis, evaluation, synthesis*
- *Habits of mind observed*

Steps

Time required: **45 minutes in one sitting or spread throughout the week with 20 minutes set aside to label and format human body template**

Class warm-up: **Keyboard all keys on class typing program.**

_____For this lesson, students will label a digital document with its parts. In past lessons, we used the world (continents and oceans). In this lesson, we'll use the human body as an example. You can label a life cycle, parts of a story, or anything else being studied in the classroom.

_____Introduce the unit. For the human body, start with a video and discuss as a group. If you don't have a favorite, try one from the Ask a Tech Teacher resource pages.

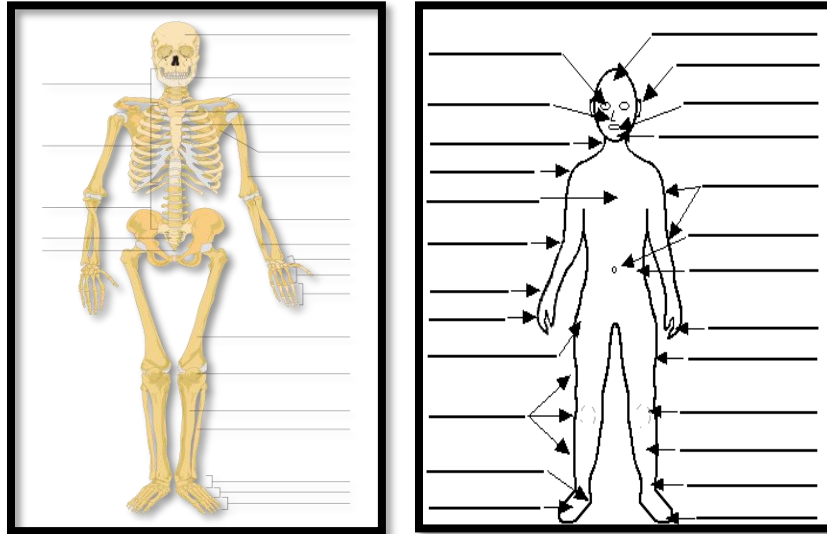_____This lesson provides three approaches to supporting inquiry using:

- *Fill-in-the-blank template*
- *Label student picture*
- *Label an avatar as though it was human*

Fill-in-the-blank Template

_____Ask students to fill in a digital worksheet (see *Assessment 11*):

Figure 94a-b: Fill in the blank templates of human body

_____If you have desktop computers, you might use KidPix, Paint, or Google Draw. You can even use a word processing program like Google Docs or MS Word.
_____If you're a Chromebook school, try ABCYa Pain or SumoPaint.
_____If you're an iPad school, try these:

- *Drawp for School*
- *Doodle Buddy*

_____If using student workbooks, students can annotate the blank rubric in their workbook (*Assessment 11*) using a tool like iAnnotate or Adobe.
_____For most digital devices, you can supply the template as a PDF to students and they can fill in the blanks using the annotation tool supplied with the digital device.
_____Demonstrate how to complete worksheet:

- *Open drawing program that allows students to write on an imported image.*
- *Demonstrate how to find template on server and bring it into.*
- *Fill in collaboratively on class screen. Use body part words from class. If they say 'jaw' in class, don't put 'mandible', and vice versa.*
- *Show students how to resize font and move text box to align on worksheet.*
- *Decorate with paint bucket, paint brush, and stamps (skills familiar to students).*

_____Now students complete theirs. Display blank sample (*Figures 94a-b*) or completed sample (*Figure 95*) on class screen. Let students know you expect them to come up with as many parts as possible on their own.
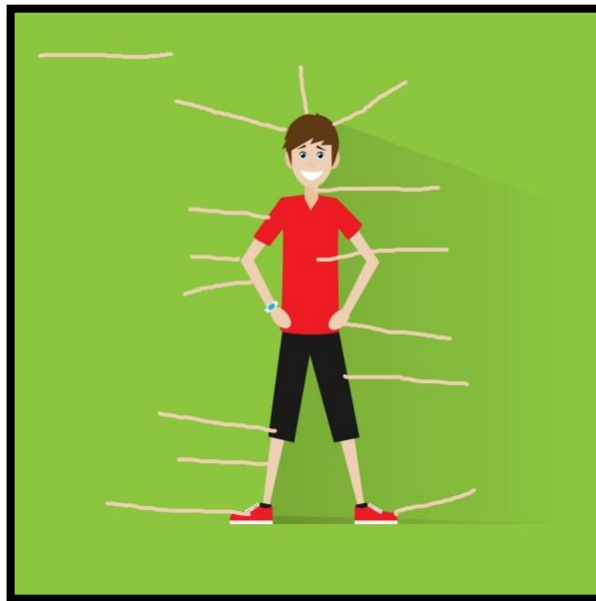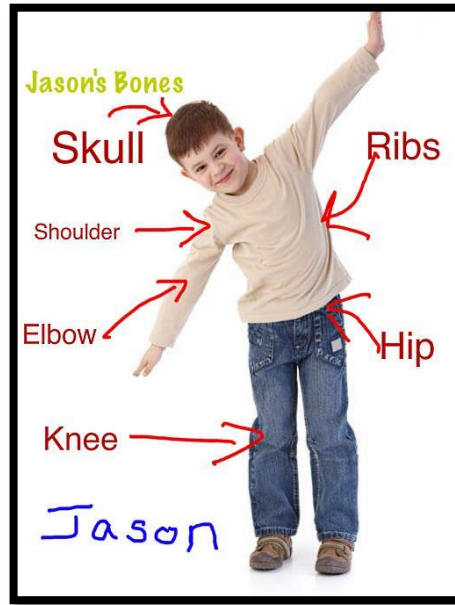
Figure 95—Completed human body template
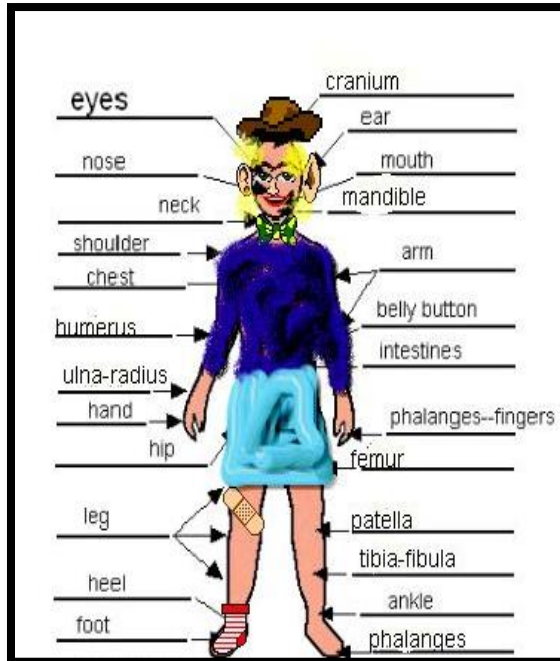
_____Those who finish early can format the picture with stickers, stamps, or other widgets are available on the digital program you select (*Figure 95*).

Label Student Picture

Figure 96a-b—Label student picture

_____Have students help each other take their pictures with the iPad camera. Then, use an iPad app like Doodle Buddy to label parts using a brush and/or text tools. *Figures 96a-b* are examples.

_____You can also open the student picture in Google Draw and annotate via PicMonkey (*Figure 97*):

Figure 97—Mashup of Google Draw and PicMonkey
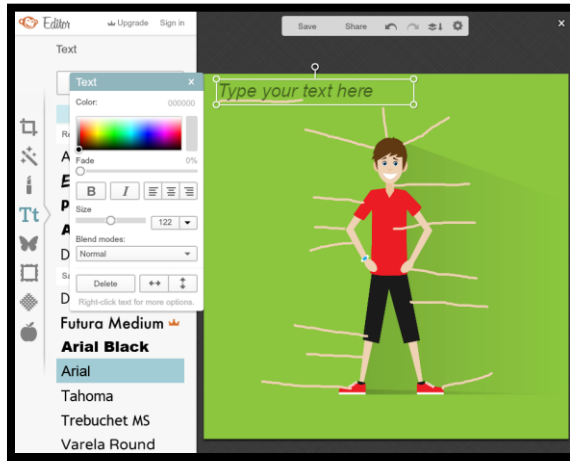
_____If using student workbooks, students open the PDF on their digital device and fill in the blanks with the device's annotation tool (like iAnnotate or Adobe).

_____For most digital devices, you can supply the template as a PDF and students can fill in the blanks using the digital device's annotation tool.

Label an Avatar as Though It is Human

_____This is a great approach to circle back on digital citizenship and the importance of privacy on the internet. Why are avatars a good personal representation rather than a photograph?

_____Students can either draw an avatar or select one they've used before. Load the avatar onto the computer, Chromebook, or iPad. *Figures 98a-b* are examples:

Figure 98a-b—Label avatar bodies
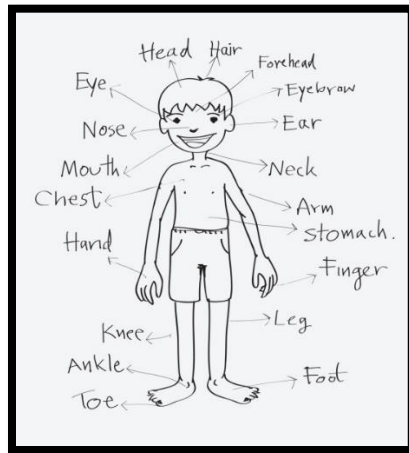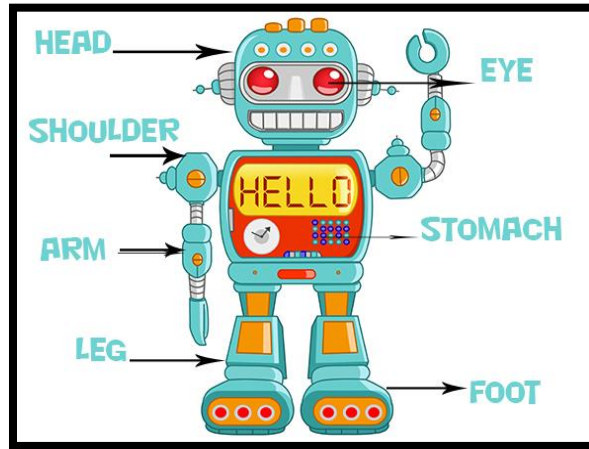
_____Save the drawing as a PDF, use the digital device's annotation tool to fill in the body parts.

_____If using workbooks, students fill in the blanks with the device's annotation tool (like Adobe).

_____When done, export/save/publish/share without assistance. Print if desired.

_____Done? Practice keyboarding on installed software or online website.

_____Continually throughout class, check for understanding.

Class exit ticket: None

Differentiation

- *Instead of a template, use the student's picture taken with an iPad.*
- *If this is NOT a formative/summative assessment, students can work in pairs.*
- *Done? Visit Human Body websites on the Ask a Tech Teacher resource pages.*
- *If lesson doesn't work, use one from Inquiry-based Teaching with PBL (from Structured Learning.*

Assessment 11—Parts of human body template

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CLASSROOM POSTERS

1. Backspace-Delete
2. Digital neighborhood
3. Digital online image law (reworded)
4. Here's what we've done
5. How to solve a problem
6. I can't find my file
7. Important keys
8. Keyboarding Hints
9. Keyboarding Stages
10. Landscape
11. Netiquette rules
12. Portrait
13. Save and save-as
14. Select-Do
15. Steps for internet research
16. Undo is your friend
17. Use keyboard shortcuts
18. Want to use this image?
19. What's a Mulligan
20. Why learn to keyboard

Intentionally deleted
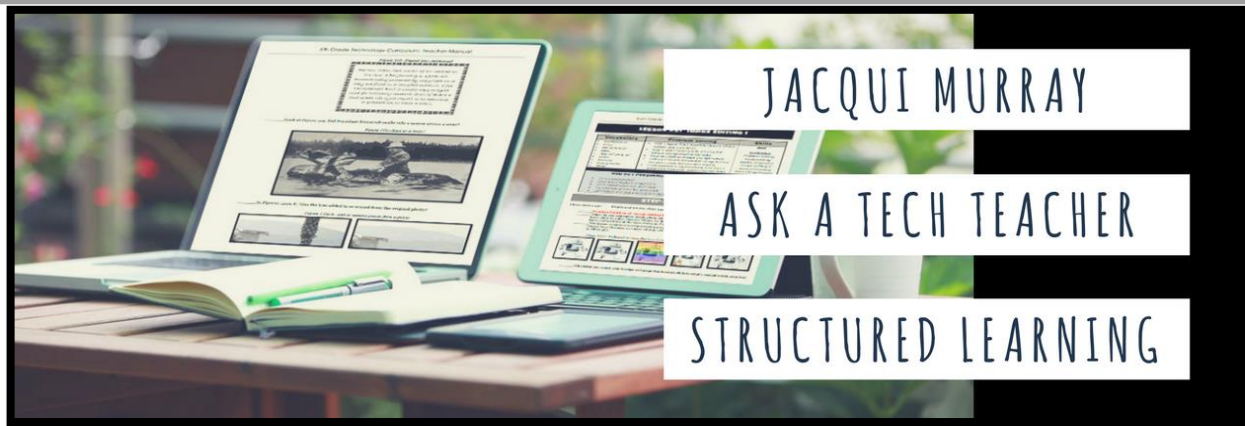
Which book	Price (print/digital/Combo)
K-8th Tech Textbook (each)	$25.99 p&h (print delivery by Amazon)
K-8 Combo (all 9 textbooks)	$248-450 + p&h
K-8 Student workbooks (per grade—tech/kb)	$199/550/1500 (room/school/district)
35 K-6 Inquiry-based Projects	$31.99/25.99/52.18 + p&h
55 Tech Projects—Vol I,II, Combo	$18.99 /$35.38–digital
K-8 Keyboard Curriculum—3 options	$20 and up + p&h
K-8 Digital Citizenship Curriculum	$29.95/25.99/50.38 + p&h
CCSS—Math, Language, Reading, Writing	$26.99 ea/80 for 4–digital only
K-5 Common Core Projects	$29.95/23.99/48.55 + p&h
Themed webinars	$8-30
Weekly tech webinars	Free or $99 per year for 180+ per year
Summer PD classes (online—for groups)	$795
Summer tech camp for kids	$179 + p&h
College credit classes (online)	$497 and up
Digital Citizenship certificate class	Starts at $29.99
Classroom tech poster bundles	Start at $9.99
PBL lessons--singles	$1.99 and up
Bundles of lesson plans	$4.99 and up (digital only)
Tech Ed Scope and Sequence (K-6 and 6-8)	$9.99 and up (digital only)
New Teacher Survival Kit	$285-620+ p&h
Homeschool Tech Survival Kit	$99 + p&h
Mentoring (30 min. at a time)	$50/session
169 Tech Tips From Classroom	$9.99 (digital only)
Consulting/seminars/webinars	Call or email for prices

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