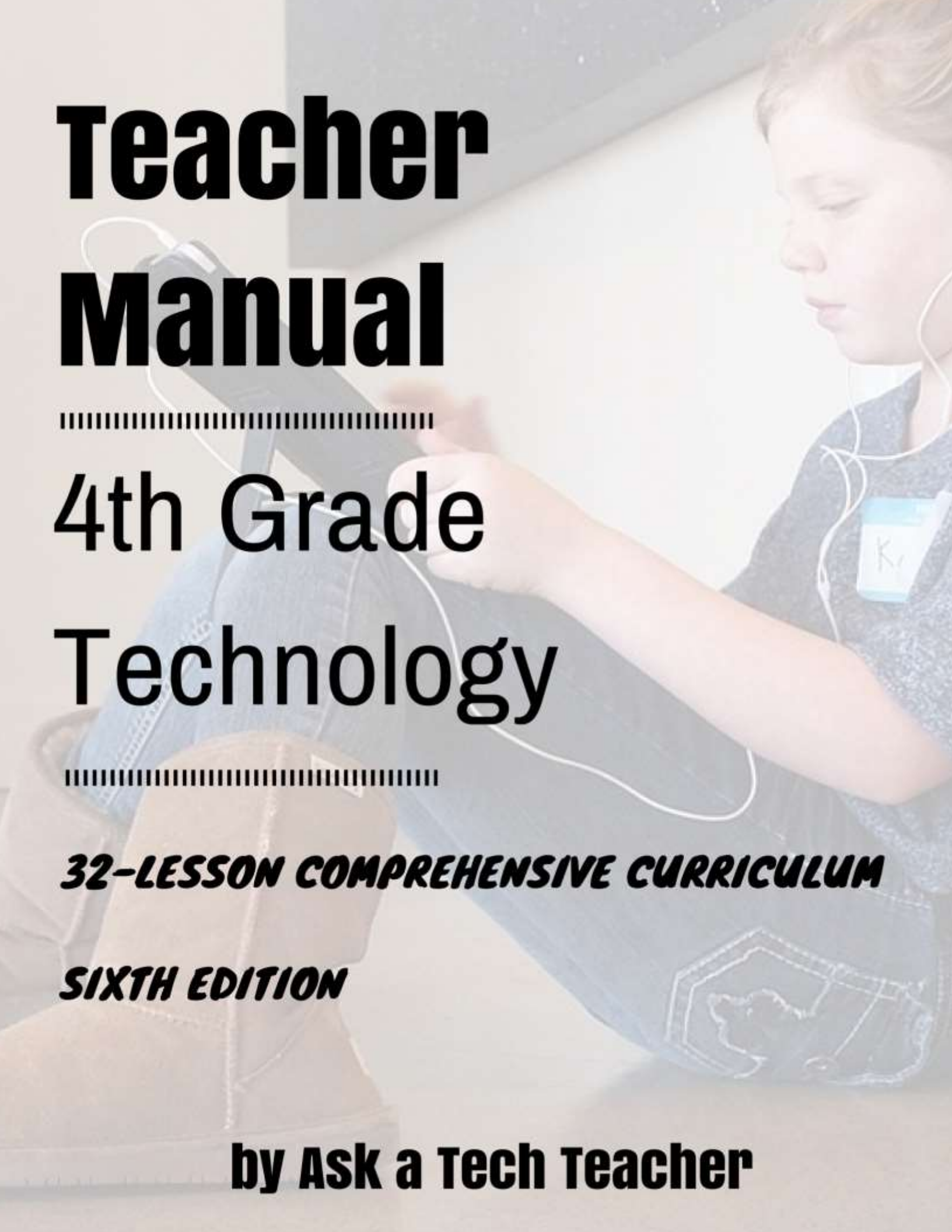

Teacher Manual

4th Grade Technology

32-LESSON COMPREHENSIVE CURRICULUM

SIXTH EDITION

by Ask a Tech Teacher

FOURTH GRADE TECHNOLOGY

A 32-LESSON COMPREHENSIVE CURRICULUM

SIXTH EDITION

Part Five of Nine of the SL Technology Curriculum

Sixth Edition 2016
Part Five of Structured Learning's nine-volume Technology Curriculum
Visit the companion website at http://askatechteacher.com for more resources and online assistance with this textbook.

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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 two pages [three by sixth grade] in a single sitting*
- *Expect students to **evaluate different media** [print or digital]*
- *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 interactive Web pages]*
- *Expect students to make **strategic use of digital media***
- *Expect students to use **glossaries or dictionaries** …*
- *Expect students to use information from **illustrations and words in print or digital** text*
- *Expect students to use a **variety of media** in communicating ideas*
- *Expect students to **use text features and search tools** (e.g., keywords, 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 by using it. It's project-based. The purpose is not to teach step-by-step tech skills (like adding borders, formatting a document, 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 be required to place hands on home row in kindergarten or use the internet before they understand the risks and responsibilities. The Structured Learning curriculum makes sure students get what they need at the right age. The end result is a phenomenal amount of learning in a short period of time.

"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

"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

If there are skills you as teacher don't know, visit our Help blog (AskATechTeacher.com) and co-teaching wikis (if link doesn't work, copy-paste into your address bar):

- *K-3rd grade — http://k-3tech.wikispaces.com/*
- *4th grade — http://fourthgradetech.wikispaces.com/*
- *5th grade — http://5thgradetechclass.wikispaces.com/*

They're free and staffed by teachers who use the curriculum.

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 grade-level curricula, you will find full lessons devoted to keyboarding, digital citizenship, and problem solving.

Here's a quick overview of what is included at the fundamental level:

- *A list of assessments, posters, images*
- *Articles that address tech pedagogy*
- *Certificate of Completion for students*
- *Curriculum map of skills taught*
- *Monthly homework (3rd-8th only)*
- *Scope and Sequence of skills taught*
- *Step-by-step weekly lessons*
- *Weekly how-to video (online)*

Each weekly lesson includes:

- *assessment strategies*
- *big idea*
- *class exit ticket*
- *class warm-up*
- *Common Core/ISTE Standards**
- *differentiation strategies*
- *educational applications*
- *essential question*
- *examples, rubrics, images, printables*
- *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*

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

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	K-8	2-8
Email	*Drawing program*	*Word processing, spreadsheet, presentation*
Google Earth	*Keyboarding tool*	*Desktop publisher*
Web tools	*Image editor*	

What's New in the Sixth Edition?

A good tech 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 since SL's Fifth Edition published in 2013:

- *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 in the Sixth Edition:

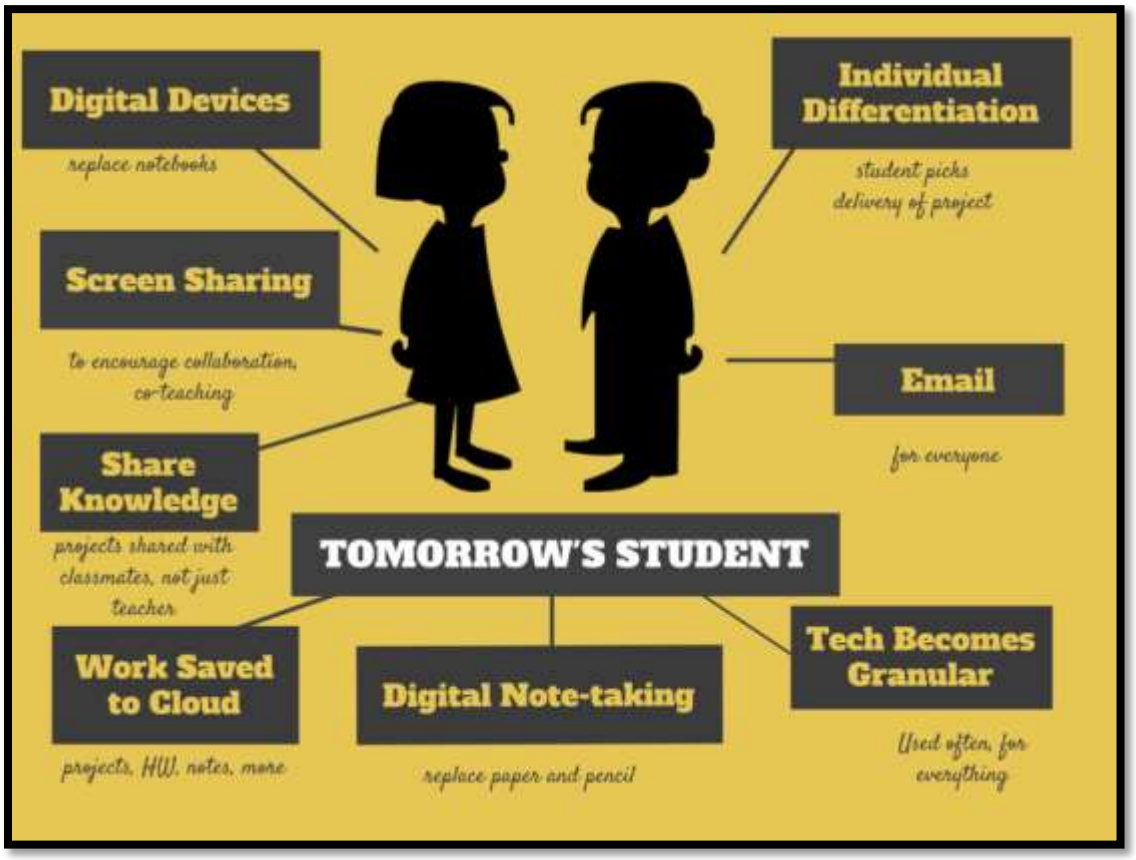
- *The lesson audience is now as likely to be the **grade-level teacher as the tech teacher**. You'll learn how to unpack the lesson regardless of which hat you wear.*
- *Ideas are provided to deliver lessons on all **popular digital devices** including desktop computers, Chromebooks, and iPads.*
- *The 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****. These are free-standing and can be moved to any spot in the curriculum—like December for Hour of Code.*

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 classroom 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.

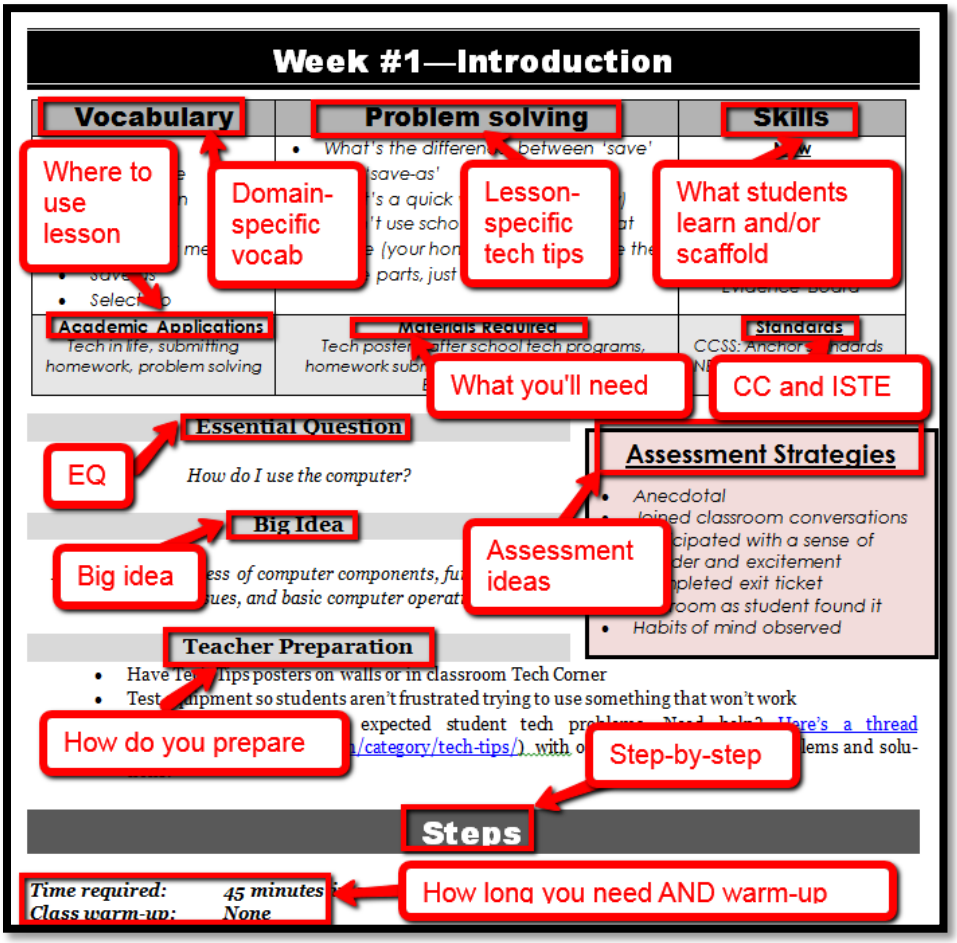
You are a homeschooler. Even though you're not comfortable with technology, you know your children must be. You are committed to providing the tools s/he needs to succeed. Just as important: Your child WANTS to learn with these tools!

How do you reach your goal? With this curriculum. Teaching children to strategically and safely use technology is a vital part of being a functional member 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.

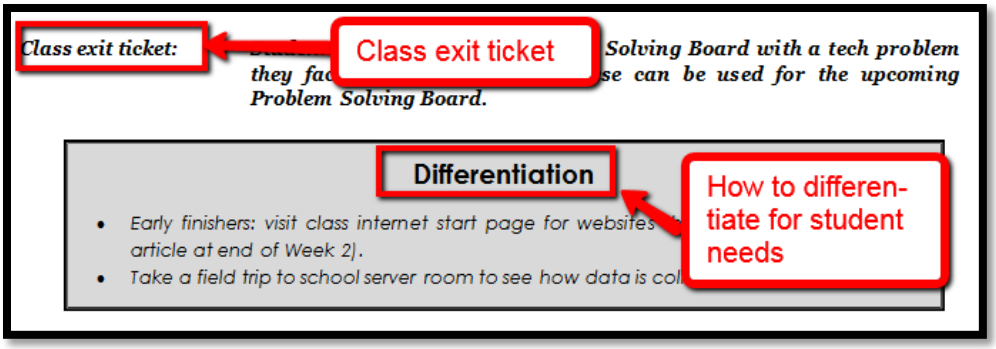
How to Use This Book

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

Figure 2a—Beginning of each lesson; Figure 2b—end of each lesson



- *Academic Applications*
- *Assessment Strategies*
- *Big Idea*
- *Class Warm-up*
- *Essential Question*
- *Material Required*
- *Problem solving*
- *Skills*
- *Standards*
- *Steps*
- *Teacher Prep*
- *Time Required*
- *Vocabulary*



- *Class exit ticket*
- *Class differentiation strategies*

The curriculum map below (*Figure 3*) tells you 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	Presen-tation	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—4th 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		x						
Class mgmt tools	x							
Coding/Programming		x						
Collaboration				x			x	
Communication	x	x		x	x	x		x
Computer etiquette	x							
Critical thinking	x		x	x	x			x
DTP				x	x	x		
Digital Citizenship	x	x	x	x	x	x		
Google Earth		x				x		
Graphics					x	x		x
Internet		x	x				x	
Internet privacy		x						
Keyboarding	x	x	x	x	x	x	x	x
Presentations							x	x
Problem solving	x	x	x	x	x	x	x	x
Publishing/sharing				x		x		x
Research		x	x	x			x	
Spreadsheets						x		
Visual learning					x	x		
Vocabulary	x	x	x	x	x	x	x	x
Webtools		x	x	x	x			
Word Processing	x		x	x	x			

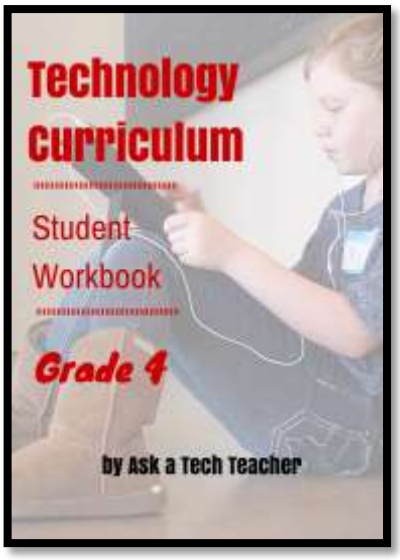
Some topics are covered every month. The strategy: spiral and scaffold learning until it's habit.

Here are hints to assist using this curriculum:

- Join the free grade-level companion wiki with the coupon code from the front of the book. If you have difficulty, email askatechteacher@gmail.com for a Join Code. Here, you get weekly videos on how to teach the upcoming lesson.
- Invest in student digital workbooks (sold separately — http://bit.ly/1FVU6Sm), a perfect student-centric companion to your teacher guide. Here are suggestions on how to use the workbooks:

- *Full-color projects are at student fingertips complete with examples and directions (licensing may vary depending upon the plan your school selected).*
- *With nominal direction from you, students learn tech skills. This is perfect if your school teaches technology across classes and developing good digital citizens is a priority.*
- *Embedded links enable students to click and go—no searching for the site, typing in addresses, or suffering through spelling errors.*
- *Workbooks can be shared through a reader where you and students add your own notes, how-tos and more.*
- *Students can work at their own pace.*

Figure 5--Student workbook



- If you want to use student workbooks in your class, here's how:
  - *buy a multi-user license (room, school, district) to install eworkbooks on multiple devices (even at home with some licenses)*
  - *provide a weekly preview by reviewing the lesson on the class screen*

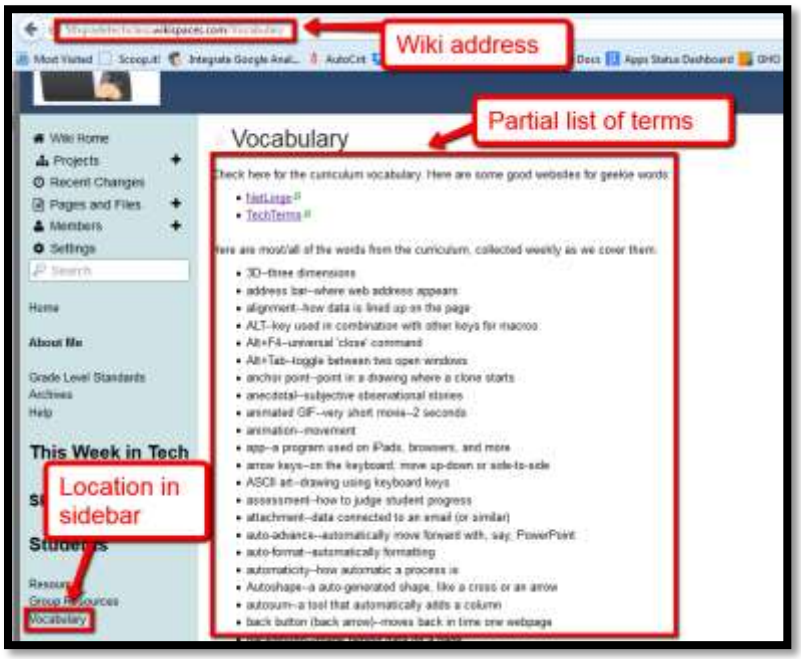
- Teach lessons in the order presented in the book (grades K-5). Lessons introduce, reinforce, and circle back on skills and concepts. Certain skills scaffold others so you want them solid before moving on. Resist the urge to mix up lessons, even if it seems your perfect time for a particular project 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 that address their 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, Goodreader, Subtext, 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.*

- If a link doesn't work, copy-paste the address into your internet browser. **A note: Links die.** If a link doesn't work even after copy-pasting, email us. We'll let you know a work-around.
- If there is no link, this means it was already provided or shows up readily in a Google search.
- Consider expecting students to back up their work—as a life habit. This can be onto a flash drive, by emailing the document to themselves, or saving to a secondary location on their digital device.
- 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.
- 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 Companion Wiki (joined via the Coupon Code), in the sidebar tab 'Vocabulary' (*Figure 6* is from the 5th grade Companion Wiki). Here, you'll find several hundred easy-to-understand definitions of domain-specific tech words.

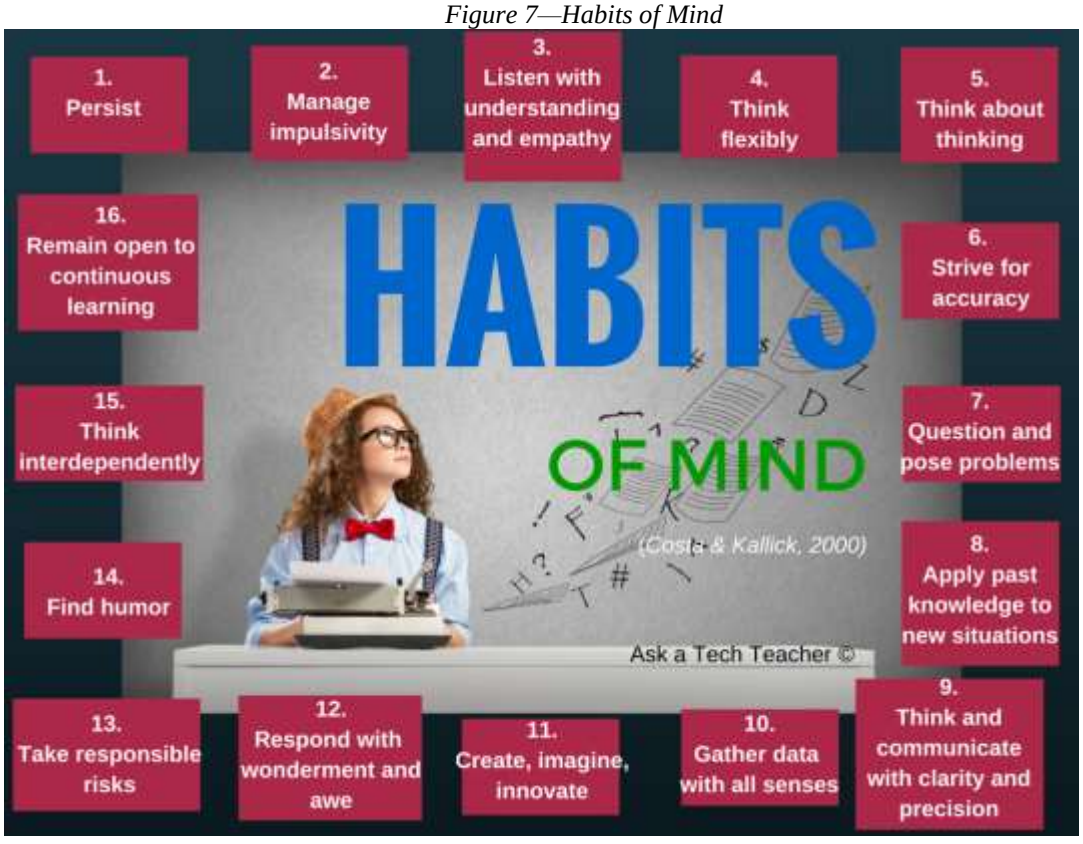
Figure 6—Glossary of tech ed vocabulary



- 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 your goals and leave the rest for 'later'.

- 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. Don't expect to have free time while students work. Move among them to provide feedback and assistance, and make anecdotal observations on their keyboarding, problem-solving, and vocabulary decoding skills.
- 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'. You can read more about Art Costa and Bena Kallick's discussion of these principles at http://habitsofmind.org, in *Figure 7*, and in 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, click for websites (http://askatechteacher.com/great-kids-websites/) or apps (http://askatechteacher.com/great-apps/).

-  *indicates video*
-  *indicates working with a partner*
- 

indicates an article
- 

indicates a topical poster (usually in the Appendix section)
-  *indicates annotatable rubric available in student workbooks (like rubrics)*

- If you need resources on specific topics, click for websites (http://askatechteacher.com/great-kids-websites/) or apps (http://askatechteacher.com/great-apps/).
- If the poster you want is too small and not in the Appendix, there are free printable copies of many here (http://askatechteacher.com/getting-started/free-posters/).
- 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—
    - *First:* *They barely hear you*
    - *Second:* *They try it*
    - *Third:* *They remember it*
    - *Fourth:* *They use it outside of class*
    - *Fifth:* *They tell a friend*

- **Need more help?** Go to Ask a Tech Teacher© (http://askatechteacher.com) run by teachers using the curriculum or the discussion board on the grade-level companion wiki. 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*

Figure 9--Five times for buy-in

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** for the day on the class screen:
    - *Warm up*
    - *Main activity*
    - *Exit ticket*

  This gives students a visual guideline to get started. Add it to your class blog or website to serve those students who aren't present. Expect students to start with the warm-up when they arrive to class.
- **Warm up about 10 minutes,** often with typing practice. Some days, youngers work on alphabet sites such as Bembo's Zoo.
- 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.

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:
    - ***3-10 minutes for the class warm-up—****at the start the week*
    - ***10-15 minutes keyboarding practice—****any day*
    - ***10-15 minutes Board presentations—****any day*

- ***15-35 minutes for the project—****any day*
- ***2-3 minutes for the class exit ticket****—to reinforce learning*

- Check off each activity as accomplished 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:

- *Teacher manual—the roadmap. That's this book.*
- *Student workbooks (http://bit.ly/1FVU6Sm) —allow students to be self-paced and self-directed*
- *Teacher companion videos (http://bit.ly/1DltFUB) —preview before lesson. Free with K-5 book*
- *Digital Citizenship curriculum (http://bit.ly/1JgKioZ) — if this is a focus of your school*
- *Keyboarding Curriculum (http://bit.ly/1JgKy7t) — if this is a focus of your school*
- *Class internet start page—provides a class agenda, links, and more. This can be created in Protopage (Figure 10a), Diigo, LiveBinders (Figure 10b), Symbaloo (Figure 10c) or another.*

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.*

**Throughout this text, we refer to Common Core State Standards. We refer to a license granted for "…a limited, non-exclusive, royalty-free license to copy, publish, distribute, and display the Common Core State Standards for purposes that support the Common Core State Standards Initiative. These uses may involve the Common Core State Standards as a whole or selected excerpts or portions.*

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Articles Included

Linked

- ***6 Stand-alone Lesson Plans for Sub***
  http://wp.me/pZUgb-2wQ
- ***10 Tips for Teachers who Struggle w/ Tech*** *(http://wp.me/pZUgb-2hu)*
- ***11 Ways to Wrap Up the School Year***
  http://wp.me/pZUgb-2AS
- ***20 Techie Problems Students Can Fix***
  http://wp.me/pZUgb-2Lj
- ***22 Ways Any Teacher Can use Tech***
  http://wp.me/pZUgb-1Dq
- ***5 Sure-fire Ways to Teach Vocabulary***
  http://wp.me/pZUgb-1nf
- ***Faceoff: Digital Devices***
  http://wp.me/pZUgb-c0R
- ***Handwriting vs. Keyboarding***
  http://wp.me/pZUgb-18Y
- ***How Do You Grade Tech? I Have 14 Ideas***
  http://wp.me/pZUgb-9fi
- ***How do I teach a program I don't know how to use?*** *(http://wp.me/pZUgb-1Vs)*
- ***I Can Solve That Problem…***
  http://wp.me/pZUgb-23h
- ***Want to Code on an IPad? 3 Apps***
  http://wp.me/pZUgb-c0Q
- ***What Happens When Tech Fails? 3 Work-Arounds*** *(http://wp.me/pZUgb-6Jm)*
- ***What's the Class of the Future Look Like?***
  http://wp.me/pZUgb-4LJ
- ***Why Keyboarding Should NOT be Dead***
  http://wp.me/pZUgb-13J

Posters

Table of Images

Table of Assessments

K-6 TECHNOLOGY SCOPE AND SEQUENCE©

Aligned with ISTE Standards

Check each skill off with I/W/M/C under ''ISTE' as students accomplish it
('ISTE' refers to the ISTE Standard addressed by the skill)

Intentionally deleted

Lesson #1—Introduction

Vocabulary	Problem solving	Skills
• *Digital* • *Embed* • *Landscape* • *PC* • *Portrait* • *Right-click menu* • *Right-mouse* • *Select-do* • *Start page* • *UN-PW* • *USB port*	• *Double-click doesn't work (enter)* • *What if monitor doesn't work (Is power on?)* • *What if computer doesn't work? (move mouse around)* • *What's Select-do (select first, and then do what you need done)* • *How do I change page layout?* • *What's the difference between 'save' and 'save-as'?* • *Where do I find class calendar?*	**New** *Class rules* *Some posters* **Scaffolded** *Problem solving* *Log-ins* *Digital citizenship* *Hardware* *Mouse skills*
Academic Applications *Tech in life, submitting homework, problem solving*	**Materials Required** *Tech posters, after school tech programs, homework submittal plan, last year class rules, Evidence Board, student workbooks (if using)*	**Standards** *CCSS: Anchor standards* *NETS: 3a, 6*

Essential Question

How do I use technology?

Big Idea

Students develop an awareness of technology and how it enhances educational goals

Assessment Strategies

- *Understood tech in their life, log-ins, and more*
- *Completed exit ticket*
- *Joined classroom conversations*
- *Left room as s/he found it*
- *Higher order thinking: analysis, evaluation, synthesis*
- *Habits of mind observed*

Teacher Preparation

- Talk with grade-level team so you tie into conversations.
- Have posters up with tech hints.
- Test all equipment.
- Ensure all required links are on student digital devices.
- Be prepared to integrate domain-specific tech vocabulary into lesson.
- Collect words students don't understand for upcoming Speak Like a Geek Board presentations.

Steps

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

_____Before anything, explain to students your expectations for their time with you—what's the **21st century tech-infused lesson plan** (article at end of lesson)?

_____Clarify technology in their lives by drawing a sillhouette of a student on the class screen and ask students what they use technolgoy for in their lives. As they mention activities, add them to your drawing. It may look like *Figure 11:*

Figure 11—Digital Student

_____Tour classroom. Show students where everything is. Review important posters, i.e., difference between 'save' and 'save-as', difference between 'backspace' and 'delete', 'save early save often', Mulligan Rule, portrait and landscape (posters in Appendix).

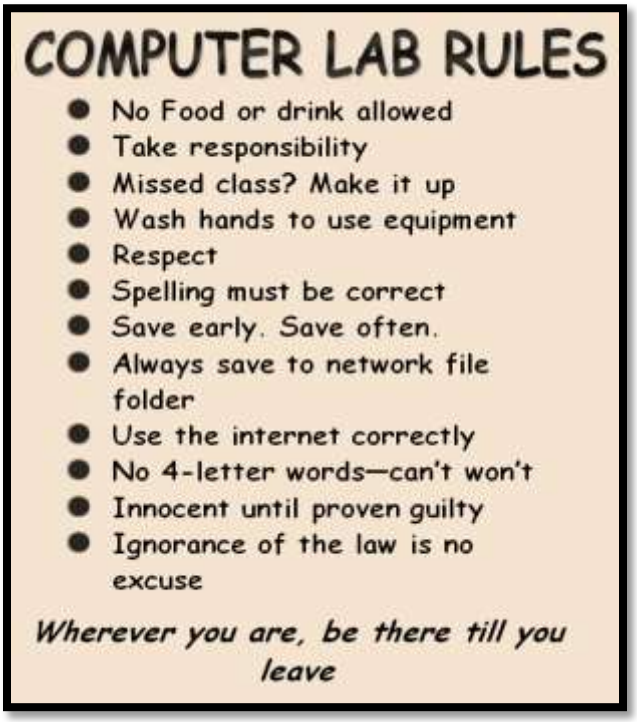
_____Review 'Select-Do' (poster in Appendix). What does that mean? (Hint: You must select something before you can do to it).

_____Collect rules from students to guide classroom actions, including:

- *No excuses; don't blame others; don't blame computer.*
- *Save early, save often—about every ten minutes.*
- *No food or drink around digital devices. Period.*
- *Respect the work of others and yourself.*
- *Keep hands to yourself. Feel free to help neighbors, but with words only.*

_____You may start with a list like *Figure 12* from the prior year:

Figure 12—Classroom rules



_____Make sure to include class discussion guidelines such as 1) listening to others, 2) taking turns while speaking, and 3) waiting to be called on before speaking.

_____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.

_____Offer a Keyboarding Club after school two days a week to accommodate students who can't do their homework at home. Limit it to 45 minutes.

_____Also offer after-school help on those same days for students who need assistance with a tech skill or a project involving tech. Request student volunteers who will commit to assisting classmates. You may collaborate with your school's STAR program, where students volunteer for activities as part of their class requirements.

_____Review homework policy (homework in back of this text): due at the end of each month. Students submit homework in the manner that works best for your group (email, Google Apps, or another). Homework is keyboard practice, one row at a time from Popcorn Typer (http://bit.ly/1da4z5G):

- *months 1-3: practice only one row per month*
    - *1st month: homerow*
    - *2nd month: QWERTY row*
    - *3rd month: lower row*
- *months 4-9: practice all rows*
- *too easy? cover hands*

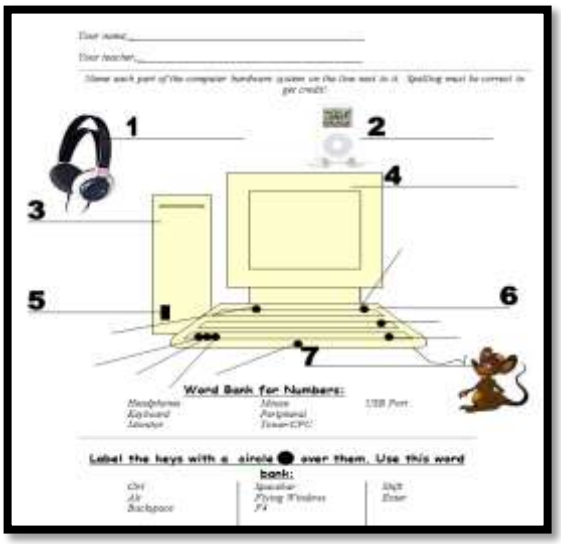
_____Discuss the evidence board (*Figures 13a* and *13b*):

Figure 13a—Evidence board; 13b—badge

_____This is a bulletin board that celebrates student transfer of knowledge from tech class to home, friends, or other educational endeavors. About once a month, students will have an opportunity to share how they use the tech skills they've learned in other classes, at home, or with friends. They will fill out a badge (like *Figure 13b*) and post it on the Evidence Board by their class. By the end of the year, you want this collection to encircle the classroom.

_____Review computer parts. *Figure 14a* is generic. Find the parts on your school's devices (there's a full-size copy at the end of the lesson to use for a study guide and testing) in preparation for the upcoming assessment. For example, if you use iPads, ask students where the 'headphones' are on this device (see full-size assessment at end of lesson)? Or the mouse? How about the USB Port (there is none)? Ask students where the iPad microphone (see *Figure 14b*) is on, say, the PC or Chromebook you use. How about the charging dock? Smartphones—there's a full size assessment at the end of the lesson.

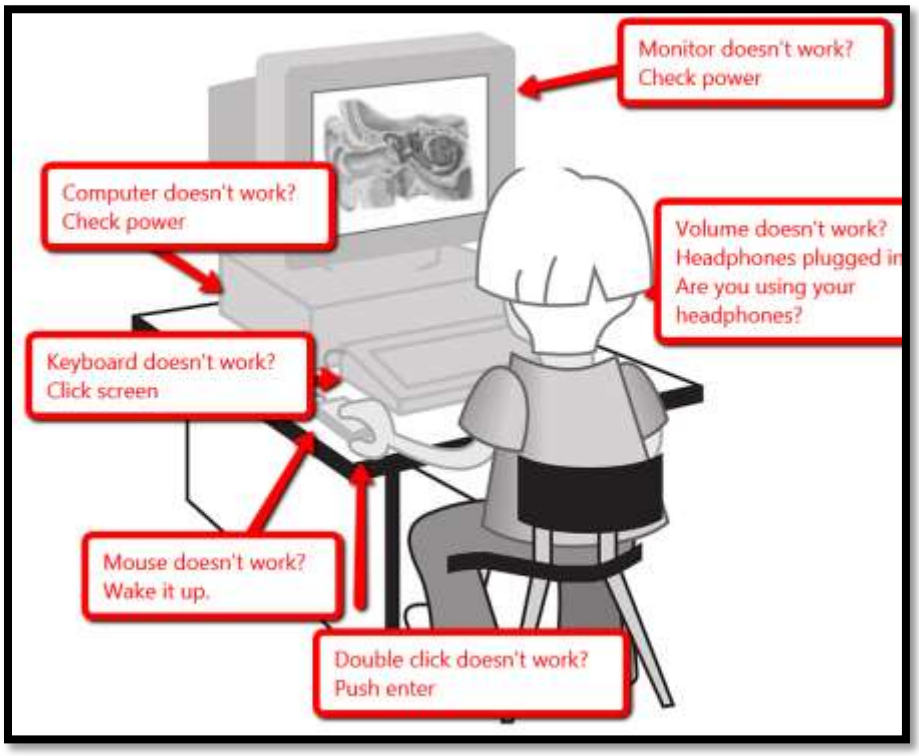
Figure 14a—Parts of computer; 14b—Parts of iPad



- *mouse buttons—left and right, double click, wheel in center*
- *CPU—power button, CD drive, USB port*
- *monitor—power button, screen, station number*
- *headphones—volume, size adjustment, connection to CPU*
- *keyboard—home row, F-row, enter, spacebar, ctrl, alt, shift*

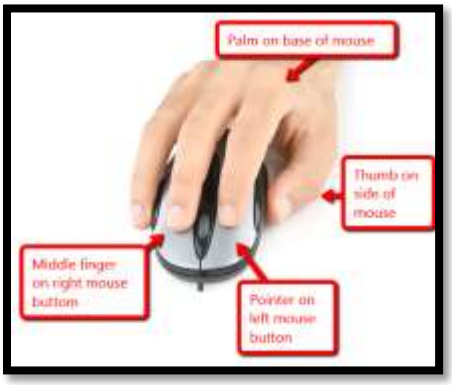
_____Discuss how understanding hardware helps to solve tech problems (*Figure 15*).

Figure 15—Hardware-related problems and solutions



_____Review mouse hold with a neighbor (see *Figure 16*). If this isn't already a habit, make sure students hold the mouse correctly every time they use it:

Figure 16—Mouse hold



_____Reinforce the importance of students solving their own problems. This includes hardware problems (*Figure 15*). Relate the problems to your digital device. For example, if sound doesn't work on the Chromebook, what should students do? This will be discussed in depth in the Problem Solving lesson.

_____Review how parts connect—behind CPU, under table, in front ports.

_____Review how to log in. What does 'User Name' and 'Password' mean? How are these unique to each student? More on this later.

_____Provide a template for students to collect log-ins for programs and websites (*Figure 17*)—more on this later:

Figure 17—UN and PWs

User Name/Passwords

PROGRAM	UN	PASSWORD
Keyboard program		
Math program		
Computer		
Class wiki		
Add'l		
Add'l		

_____Discuss **digital citizenship**. You'll cover it in depth throughout the year and in Lesson 6. If you want more depth on digital citizenship, see K-8 Digital Citizenship curriculum (http://www.structuredlearning.net/book/k-8-digital-citizenship-curriculum/), a companion to this curriculum. Remind students any time they visit the internet, they do so safely and legally.

_____Discuss the **class internet start page** (see article at end of this lesson). An internet start page is a website that comes up when student opens internet. It organizes critical content in a single location and curates links students will use on a weekly basis.

_____Continually throughout the class, check for understanding.

_____Remind students: next week is the first keyboarding speed and accuracy quiz.

Class exit ticket: ***Students tack a post-it on Problem Solving Board with a tech problem they faced last week. These will be used for the upcoming Problem Solving Board.***

Differentiation

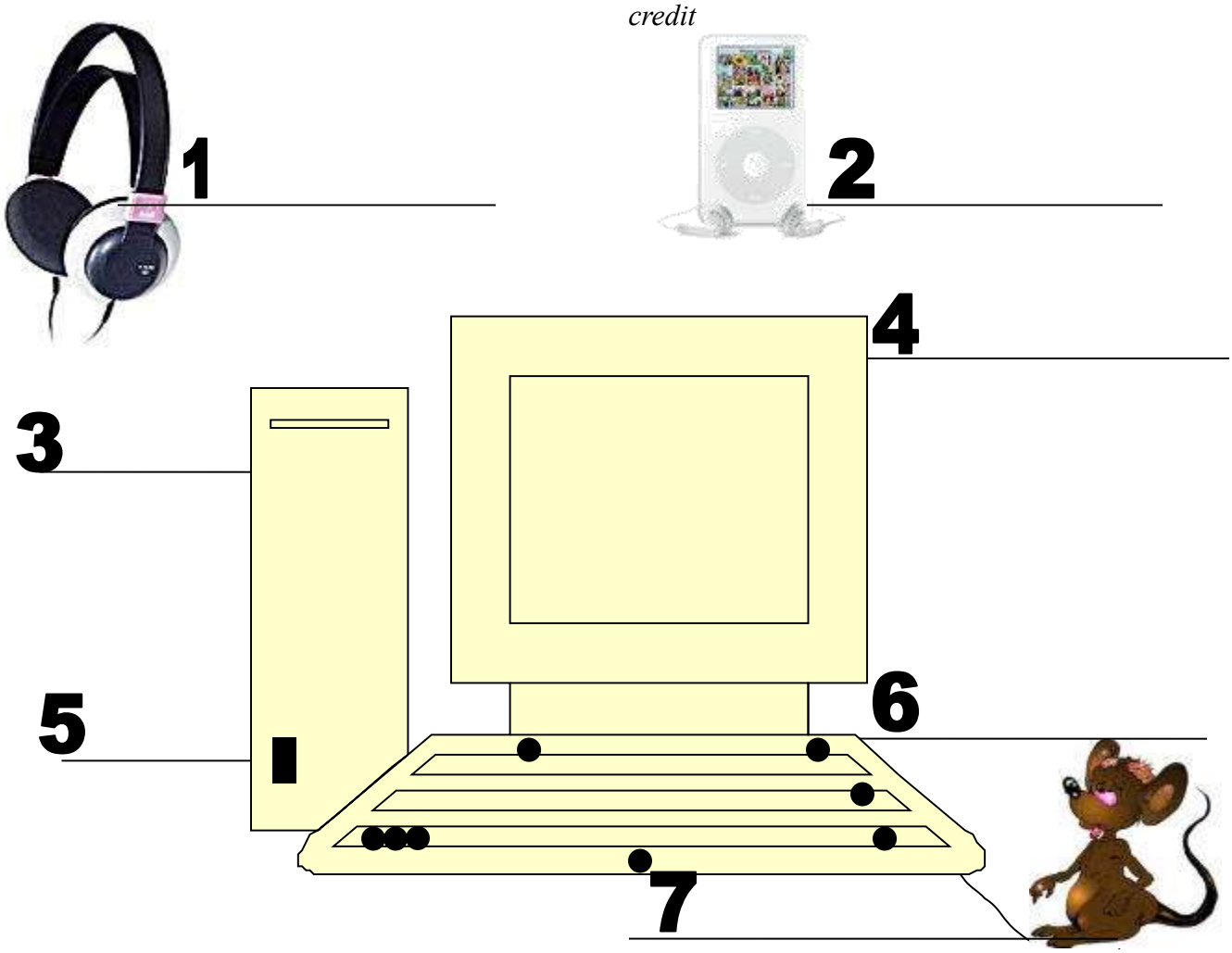
- *For more assessment strategies, read '5 Authentic Assessment Tools' at lesson end.*
- *Early finishers: visit class internet start page for websites that tie into classwork.*
- *Take a field trip to school server room to see how data is collected and curated.*
- *Have a calendar of class events. You may update it or you may assign this task on a revolving basis to a student. Embed it into class website, wiki, or blog with quizzes, project due dates, and more. Add the upcoming keyboarding speed quiz (next week)*
- *If this lesson doesn't work for your student group, use one from [How to Jumpstart the Inquiry-based Classroom (http://bit.ly/1FryFN8).](http://bit.ly/1FryFN8) It has 5 additional projects aligned with the SL curriculum.*

"A printer consists of three main parts: the case, the jammed paper tray and the blinking red light"

Assessment 1—Hardware Quiz

HARDWARE—PARTS OF THE COMPUTER

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



Word Bank:

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

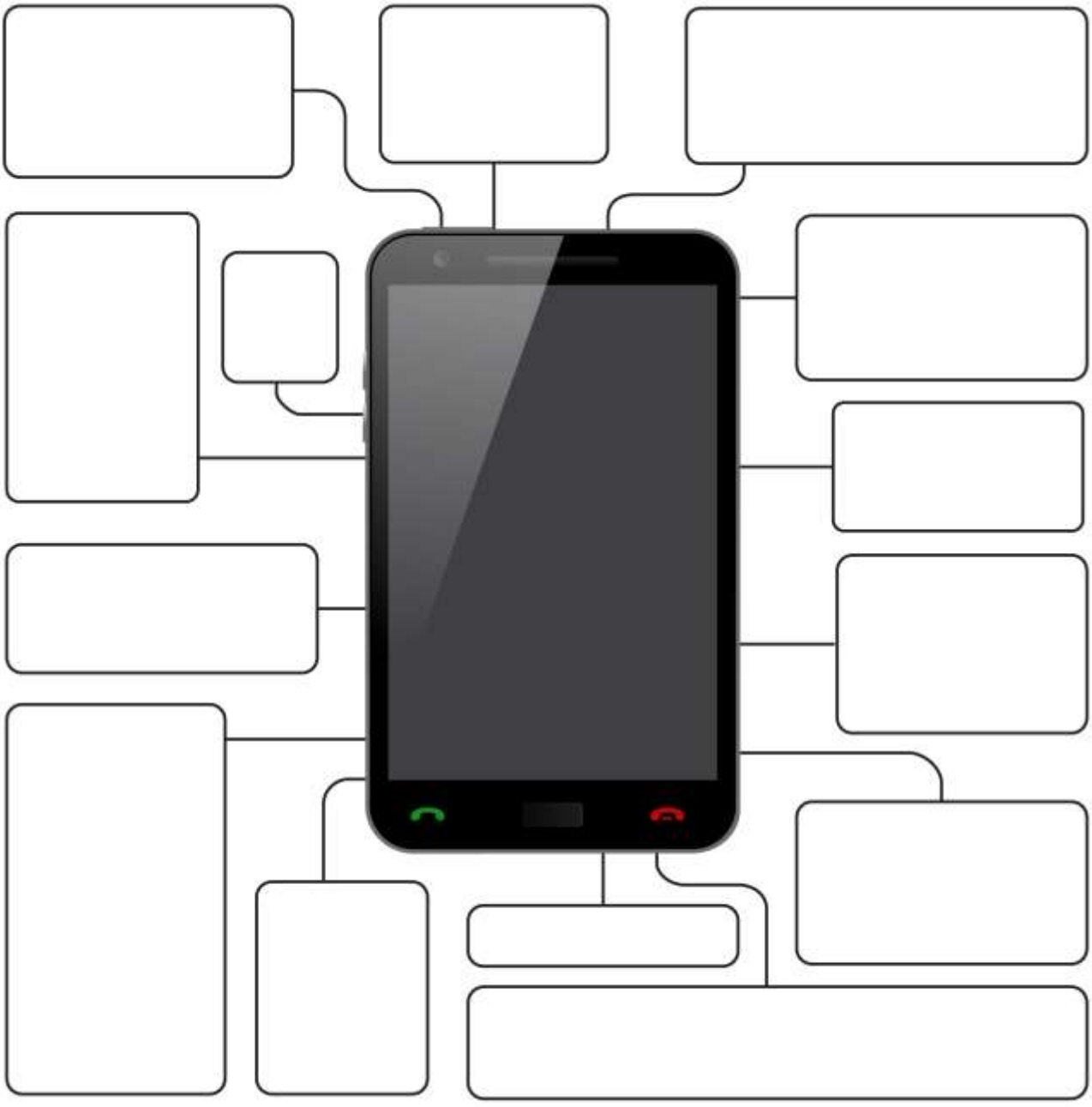
Label the keys with a circle ⬤ over them. Use this word bank:

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

Assessment 2—Parts of Smartphone

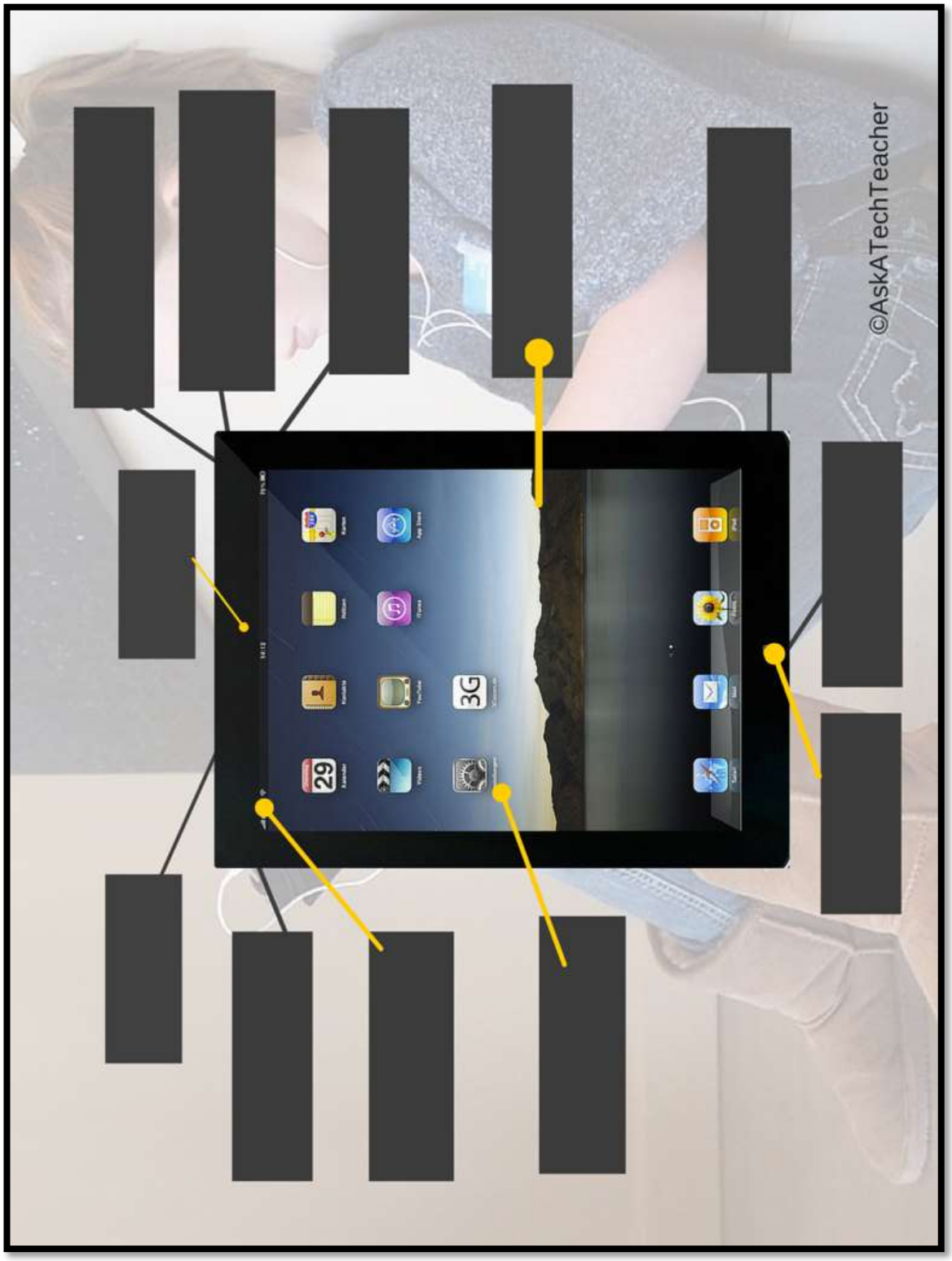
HARDWARE—PARTS OF THE SMARTPHONE

Adapt this to your needs

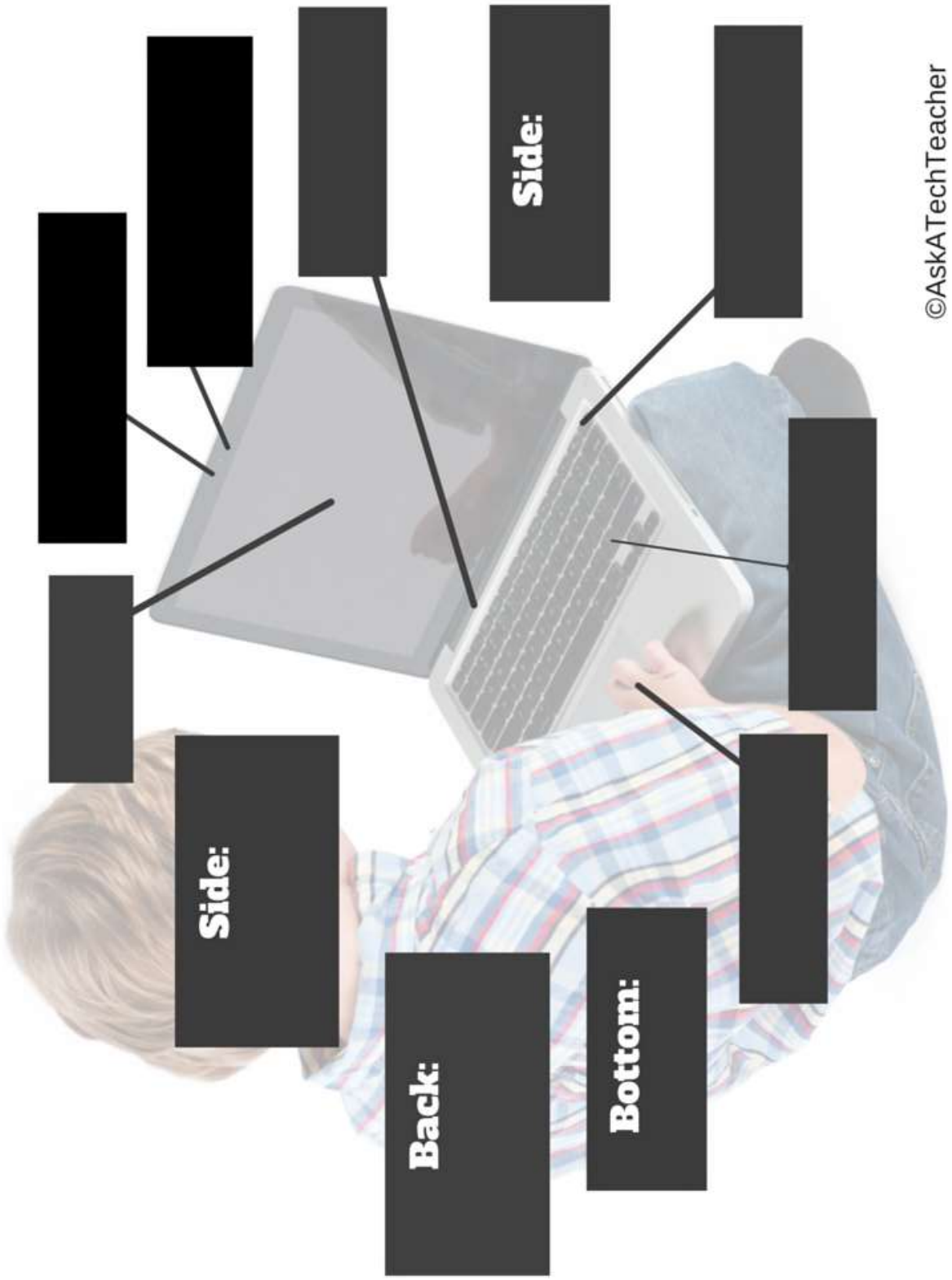


Assessment 3—iPad assessment

IPad Assessment



Assessment 4--Chromebook



Article 1—21st Century Lesson Plan

21st Century Lesson Plan

Technology and the connected world put a fork in the old model of teaching—teacher in front of the class, sage on the stage, students madly taking notes, textbooks opened to a particular chapter being reviewed, homework as worksheets based on the text, tests regurgitating important facts. Did I miss anything? This model is outdated **not because it didn't work** (many statistics show students ranked higher on global testing years ago than they do now), **but because the environment changed.** Our classrooms are more diverse. Students are digital natives, already in the habit of learning via technology. The 'college and career' students are preparing for is different so the education model must be different.

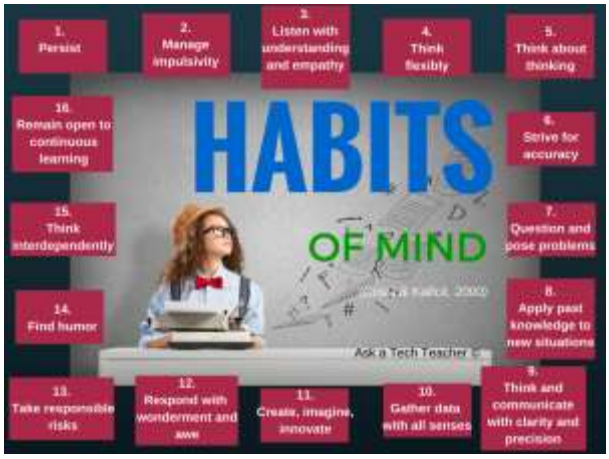
Preparing for this new environment requires radical changes in teacher lesson plans. Here are seventeen concepts you'll want to include in your preparation:

1. Students are graduating from high school unable to work in the jobs that are available. It's the teacher's responsibility to insure students **learn over-arching concepts** such as how to speak to a group, how to listen effectively, how to think critically, and how to solve problems. The vehicle for teaching these ideas is history, science, literature, but they aren't the goal.
2. To focus on the over-arching concepts above, make earning **platform-neutral**. For example, when teaching spreadsheets, make the software or online tools a vehicle for practicing critical thinking, data analysis, and evidence-based learning, not for learning one brand of software or a particular spreadsheet tool. Besides, what you use at school may not be what students have at home. You don't want students to conflate your lessons with 'something done at school'. You want them to apply them to their life.
3. **Morph the purpose from 'knowing' to 'understanding'**. Teach the process, not a skill. Students should understand why they select a particular tool, not just how to use it. Why use a slideshow instead of a word processing program? Or a spreadsheet instead of a slideshow? Expect students to be critical thinkers, not passive learners.
4. **Transfer of knowledge is critical.** What students learn in one class is applied to all classes (where relevant). For example, *word study* is no longer about memorizing vocabulary, but knowing how to decode unknown academic and domain-specific words using affixes, roots, and context.
5. **Collaboration and sharing** is part of what students learn. They help each other by reviewing and commenting on projects before submittal to the teacher (GAFE makes that easy). The definition of 'project' itself has changed from 'shiny perfect student work' to *review-edit-rewrite-submit*. You grade them on all four steps, not just the last one. This makes a lot of sense—who gets it right the first time? I rewrote this article at least three times before submitting. Why expect differently from students? **Plus:** No longer do students submit a project that only the teacher sees (and then a few are posted on classroom bulletin boards). Now, it is shared with all classmates, so all benefit from student work.
6. **Self-help methods** are provided and you expect students to use them. This includes online dictionaries and thesauruses, how-to videos, and access to teacher assistance outside of class. These are available 24/7 for students, not just during classroom hours. This happens via online videos, taped class sessions, the class website, and downloadable materials so students don't worry that they 'left it in their desk'.

7. **Teachers are transparent** with parents. You let them know what's going on in the classroom, welcome their questions and visits, communicate often via email or blogs when it's convenient for them. That doesn't mean you're on duty around the clock. It means you differentiate for the needs of your parents. Your Admin understands that change by providing extended lunch hours, compensatory time off, or subs when you're fulfilling this responsibility.
8. **Failure is a learning tool.** Assessments aren't about 'getting everything right' but about making progress toward the goal of preparing for life
9. **Differentiation is the norm.** You allow different approaches as long as students achieve the Big Idea or answer the Essential Question. You aren't the only one to come up with these varied approaches—students know what works best for their learning and present it to you as an option.
10. The **textbook is a resource**, supplemented by a panoply of books, primary documents, online sites, experts, Skype chats, and anything else that supports the topic. This information doesn't always agree on a conclusion. Students use habits of mind like critical thinking, deep learning, and evidence-based decisions to decide on the right answers.
11. The **lesson plan changes from the first day to the last**—and that's OK. It is adapted to student needs, interests, and hurdles that arise as it unfolds, while staying true to its essential question and big idea.
12. **Assessment** might include a quiz or test, but it also judges the student's transfer of knowledge from other classes, their tenacity in digging into the topic, their participation in classroom discussions, and more.
13. **Vocabulary is integrated into lessons,** not a stand-alone topic. Students are expected to decode words in class materials that they don't understand by using quickly-accessed online vocabulary tools, or deriving meaning from affixes, roots, and context.
14. **Problem solving is integral** to learning. It's not a stressful event, rather viewed as a life skill. Who doesn't have problems every day that must be solved? Students are expected to attempt a solution using tools at their disposal (such as prior knowledge, classmates, and classroom resources) before asking for help.
15. **Digital citizenship is taught,** modeled and enforced in every lesson, every day, and every classroom. It's no longer something covered in the 'tech lab' because every class has as much potential for working online as offline. Every time the lesson plan calls for an online tool or research using a search engine or a YouTube video, teachers review/remind/teach how to visit the online neighborhood safely. It's frightening how students blithely follow weblinks to places most parents wouldn't allow their child to visit in their neighborhood. Just as students have learned how to survive in a physical community of strangers, they must learn to do the same in a digital neighborhood.
16. **Keyboarding skills are granular.** They aren't used only in the computer lab, but in every class students take. If students are using iPads, Chromebooks, laptops, or desktops for learning, they are using keyboarding—which means they must know how to do so efficiently, quickly, and stresslessly. Since keyboarding benefits all classes, all teachers–including the librarian–become partners in this effort. I go into classrooms and show students the broad strokes; the teacher reinforces it every time the student sits down at the computer.
17. **Play is the new teaching.** It is a well-accepted concept for preschoolers and has made a successful leap to the classroom, relabeled as 'gamification'. Use the power of games to draw students into learning and encourage them to build on their own interests. Popular games in the classroom include Minecraft, Mission US, Scratch, and others on this list. If your school is new to this concept, clear it with admin first and be prepared to support your case.

Article 2—Habits of Mind vs. CC vs. IB

Habits of Mind vs. Common Core vs. IB



Pedagogic experts have spent an enormous amount of time attempting to unravel the definition of 'educated'. It used to be the 3 R's—reading, writing, and 'rithmetic. The problem with that metric is that, in the fullness of time, those who excelled in the three areas weren't necessarily the ones who succeeded. As long ago as the early 1900's, Teddy Roosevelt warned:

"C students rule the world."

It's the kids without their nose in a book that notice the world around them, make connections, and learn natively. They excel at activities that aren't the result of a GPA and an Ivy League college. Their motivation is often failure, and taking the wrong path again and again. As Thomas Edison said:

"I have not failed. I've just found 10,000 ways that won't work."

Microsoft founder, Bill Gates, and Albert Einstein are poster children for that approach. Both became change agents in their fields despite following a non-traditional path.

In the face of mounting evidence, education experts accepted a prescriptive fact: student success is not measured by milestones like 'took a foreign language in fifth grade' or 'passed Algebra in high school' but by how s/he thinks. One curated list of cerebral skills that has become an education buzz word is Arthur L. Costa and Bena Kallick's list of sixteen what they call Habits of Mind (Copyright ©2000):

1. *Persisting*
2. *Managing impulsivity*
3. *Listening with Understanding and Empathy*
4. *Thinking Flexibly*
5. *Thinking about Thinking*
6. *Striving for Accuracy*
7. *Questioning and Posing Problems*
8. *Applying Past Knowledge to New Situations*
9. *Thinking and Communicating with Clarity and Precision*
10. *Gathering Data through All Senses*
11. *Creating, Imagining, Innovating*
12. *Responding with Wonderment and Awe*
13. *Taking Responsible Risks*
14. *Finding Humor*
15. *Thinking Interdependently*
16. *Remaining Open to Continuous Learning*

Together, these promote strategic reasoning, insightfulness, perseverance, creativity and craftsmanship.

But they're not new. They share the same goals with at least three other widely-used education systems: 1) Common Core (as close as America gets to national standards), 2) the International Baccalaureate (IB) program (a well-regarded international curriculum, much more popular outside the US than within), and 3) good ol' common sense.

For the rest of the article, click http://wp.me/pZUgb-coJ

Article 3—Which class internet start page is best?

Which Class Internet Start Page is Best?

The internet is unavoidable in education. Students go there to research, access homework, check grades, and a whole lot more. As a teacher, you do your best to make it a friendly, intuitive, and safe place to visit, but it's challenging. Students arrive there by iPads, smartphones, links from classroom teachers, suggestions from friends—the routes are endless. The best way to keep the internet experience safe is to catch users right at the front door, on that first click.

How do you do that? By creating a **class internet start page**. Clicking the internet icon opens the World Wide Web to a default page. Never take your device's default because there's no guarantee it's G-rated enough for a typical classroom environment. Through the 'settings' function on your browser, enter the address of a page you've designed as a portal to all school internet activity, called an 'internet start page'. Sure, this takes some time to set-up and maintain, but it saves more than that in student frustration, lesson prep time, and the angst parents feel about their children entering the virtual world by themselves. They aren't. You're there, through this page. Parents can save the link to their home digital device and let students access any resources on it, with the confidence of knowing you've curated everything.

In searching for the perfect internet start page, I wanted one that:

- *quickly differentiates for different grades*
- *is intuitive for even the youngest to find their page*
- *is customizable across tabbed pages to satisfy changing needs*
- *presents a visual and playful interface to make students want to go there rather than find work-arounds (a favorite hobby of older students)*
- *includes an immediately visible calendar of events*
- *hosts videos of class events*
- *provides collaborative walls like Padlet*
- *includes other interactive widgets to excite students about technology*

Here are four I looked at:

Symbaloo

A logo-based website curation tool with surprising flexibility in how links are collected and displayed. It's hugely popular with educators because collections are highly-visual and easy to access and use. Plus, Symbaloo collections made by one teacher can be shared with the community, making link collections that much easier to curate.

The downside: Links are about all you can collect on Symbaloo.

Only2Clicks

Great for youngers with their big bold buttons, colorful interface.
The downside: Too often, I have technical glitches as I try to set up collections. Maybe it's just me. Another downside: Like Symbaloo, Only2Clicks is focused mostly on link curation. If I want to add widgets, I have to select from their list. With kids, no matter how comprehensive the list, it misses the one I really really need.

Ustart

Offers a good collection of useful webtools for students including links, news, calendar, notes, even weather. It provides tabs for arranging themed collections (like classes) and is intuitive to set up and use. It even includes options for embeddable widgets like Padlet. This is the closest to what I needed of all three.
Overall: This is a good alternative to the one I selected.

Protopage

Protopage did everything on my list. It's flexible, customizable, intuitive, and quick to use with a scalable interface that can be adjusted to my needs (2-5 columns, resize boxes, drag widgets between tabs—that sort). I set up a separate tab for each grade (or you can set up tabs for subjects). The amount of tabs is limited only by space on the top toolbar. Resources included on each tab can be curated exactly as you need. Mine includes:

- *oft-used websites*
- *themed collections of websites*
- *a To Do list*
- *an interactive map*
- *a calculator*
- *a calendar of events*
- *edit-in-place sticky notes*
- *pictures of interest*
- *rss feeds of interest*
- *weather*
- *news*
- *widget for polling the class (Padlet)*

In addition, the Protopage folks are helpful. Whenever I have a problem (which is rare), they fix it quickly.

If you're looking for more details on how to set up a Protopage start page, here's a longish video with lots of details on setting up your Protopage internet start page (https://youtu.be/h5GQeva4zGU).

Article 4—5 Authentic assessment tools

5 Authentic Assessment Tools

Assessments have become a critical piece to education reform. To prepare students well for college and career means they must deeply learn the material and its application to their lives and future learning. That means assessing student knowledge authentically and accountably.

A well-formed assessment is not always measured by a grade. Sometimes it derives evidence of learning from anecdotal observation, watching students apply prior learning, working in groups, or participating in classroom discussions.

Thanks to technology, there are lots of fun and effective ways to assess learning in ways that transform your classroom. Here are seven ideas:

Polls

Polls are quick ways to assess student understanding of the goal of your daily teaching. It measures student learning as much as lesson effectiveness. Polls are fast—three-five minutes—are anonymously graded and shared immediately with students. It lets everyone know if the big idea of the lesson is understood and if the essential questions have been answered.

These can be graded, but are usually used formatively, to determine organic class knowledge before moving on to other topics.

Quick Quizzes

These are one-two question checks during class to measure understanding. They are either delivered at an assigned time during class (where everyone participates at once) or are questions students answer when they gain that knowledge from a lesson. Both approaches are a great way for a teacher to determine if she has explained a topic clearly enough that students have a useful understanding of it.

A nice by-product of letting students answer questions when they're ready is they get a topic much faster than you expect. That means you know when to move on to more challenging information.

Gameshows

Team students up with study materials and prep time. This may be fifteen minutes or an entire class—you decide. Encourage them to strategize how to work best as a team. For example, they may decide to assign experts on topics or all be generalists. They may also select a captain, depending upon what type of 'gameshow' is being played.

When prep time is completed, review gameshow rules. They will differ depending upon the gameshow you select. Then get started! They'll think it's a game as you see what they really know on a subject.

Virtual Wall

Ask students a question and have them add their answer to a virtual wall.

Virtual walls are also great ideas for reviewing a subject prior to a summative assessment. Have each student post an important idea they got from the unit with significant required details.

Brainstorm

Create a group mindmap to evaluate what the class knows on the subject. This is well-suited to informing you what the class as a whole understands from your teaching, but also creates an excellent study guide for students.

Assessments that work best are those that are fresh and new to students, requiring they think critically and creatively as they share knowledge. What do you use to organically assess student learning?

For more assessment ideas, Education.com has a good discussion on the importance of assessment.

Lesson #4—Problem Solving

Vocabulary	Problem solving	Skills
• *Cerebrally-stimulating* • *Inductive reasoning* • *Irrelevant* • *Life skill* • *Relevant*	• *I tried to solve the problem, but couldn't* • *I asked for help and the person didn't know the answer* • *Nothing works!*	**New** *Using a poll* **Scaffolded** *Problem solving* *Keyboarding*
Academic Applications *Any class, school and life, college and career*	**Materials Required** *keyboard program link, Problem Solving Board rubrics, Evidence Board badges*	**Standards** *CCSS Standards for Math. Practice* *NETS: 6a, 6d*

Essential Question

How do I solve a problem I've never seen before?

Big Idea

Problem solving is 'cerebrally-stimulating—and fun!

Teacher Preparation

- Know which tasks weren't completed last week and whether they are necessary to move forward.
- Be prepared to integrate domain-specific tech vocabulary.
- Know whether you need extra time to complete this lesson with your student group.
- Collect words students don't understand for Speak Like a Geek Board beginning later. Use a physical Vocabulary Wall (i.e., a bulletin board) or a virtual wall like Padlet. Students independently add words.
- Commit one after-school session per week to help students problem solve. You may use student helpers.
- Verify all required links are available.

Assessment Strategies

- *Anecdotal*
- *Committed to solving own problems*
- *Made decisions that followed class rules*
- *Left room as student found it*
- *Completed warm-up and exit ticket*
- *Joined classroom conversations*
- *Higher order thinking: analysis, evaluation, synthesis*
- *Habits of mind observed*

Steps

Time required: ***45 minutes in one sitting or spread throughout week***
Class warm-up: ***Set up a series of hardware problems around the classroom. As students enter, they must solve the one related to their station before starting class.***

_____Start Hardware Quiz (using *Assessment 1, 2 or 3*). Give students 5-10 minutes. Remind them spelling counts. Remind them if they are unhappy with result, they can retake for full credit. This is called the **Mulligan Rule**, taken from golf (poster in Appendix).

_____When students finish, practice keyboarding using Popcorn Typer (http://bit.ly/1da4z5G) or Dance Mat Typing (http://www.bbc.co.uk/guides/z3c6tfr) or another tool that **focuses on one row at a time** while the rest of the class finishes. Students used these last year so they

should be able to begin independently. Observe student ability to maintain correct posture, keep elbows at side, and use proper hand position and all fingers with no flying hands.

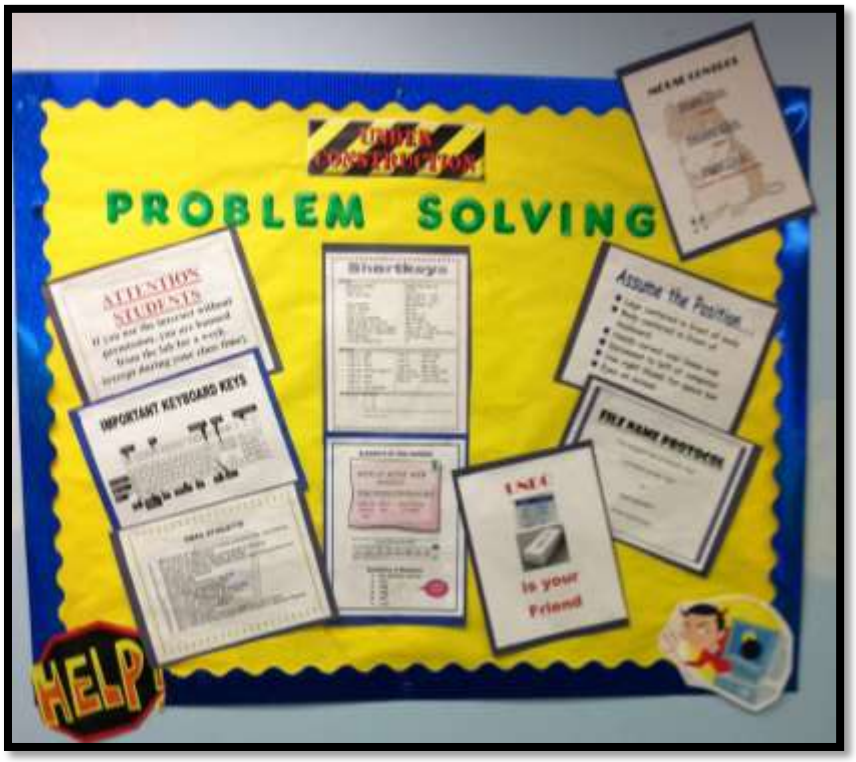
_____Turn music on to establish a typing rhythm for students. Encourage them to type to the beat.

_____Review speed and accuracy quiz from last week. Any common problems—hunt-and-peck? Using a finger for spacebar? Flying elbows?

_____Any evidence of learning to post on Evidence Board?

_____Review Problem Solving corner of classroom—where you collect common tech problems students will be expected to solve wherever they use digital devices (see *Figure 33*).

Figure 18—Problem-solving board



_____Reinforce the importance of students solving their own problems. This includes hardware problems. Relate the problems to school's digital devices. For example, if sound doesn't work on the Chromebook, what should students do? What if it's an iPad? This will be circled back on throughout the year.

_____Sign up for Problem-solving Board—starts next week. Remember 3rd grade? This is the first of three Presentation Boards this year:

1. *Problem-solving board*
2. *Speak Like a Geek*
3. *Google Earth Board*

_____All three Board presentations are independent investigation, risk-taking for cautious students, and presentation skills practice. Here's how this Board works:

- *Post sign-up sheets by the class door where they're easily found. Include slips of paper (Figure 34) that students can track important information:*

Figure 19—Board info required

My name: _____
My question: _____
My presentation date: _____

- *Alternatively, have sign-ups online where they can be shared through:*
    - *GAFE (Google Apps for Education)—either the Calendar or Spreadsheets*
    - *Office 365*
    - *Padlet (using calendar template)— http://padlet.com/*
    - *SignUp Genius— http://www.signupgenius.com/index.cfm*
    - *Appointment Slots in Google Calendar shared with students. For a video, visit Ask the Gooru (http://bit.ly/1DpWDab)*

- *Each student signs up for a date and a problem to present.*
- *Student gets solution from family, friends, or even teacher as a last resort.*
- *Presentation date: Student tells classmates problem, how to solve it, takes questions.*
- *Entire presentation takes about three minutes.*

_____*Assessment 9* is an example of the Board assessment to share with students:

Assessment 5—Problem-solving board rubric

PROBLEM SOLVING BOARD

Grading Rubric

Name: _____

Class: _____

Knew question	_____
Knew answer	_____
Asked audience for help if didn't know answer	_____
No umm's, stutters	_____
Look audience in eye	_____
No nervous movements (giggles, wiggles, etc.)	_____
No nervous noises (giggles,)	_____
Overall	_____

_____Load a copy of *Assessment 9* for each student onto your iPad. As students make their presentations, annotate your grading onto the form and save/share/publish.

_____Students may sign up in groups, as long as there is one problem per group member.

_____A little background: Problem-solving Board covers tech issues faced in class. As you move through the year, collate a list of problems for next year's Board. Start with the problems students posted as a class exit ticket after Lesson 1. Include problems students had with tech in homework, at home as they used tech for a school assignment, with classroom digital devices—from all parts of their life. *Figure 35* is a sample list of common tech problems:

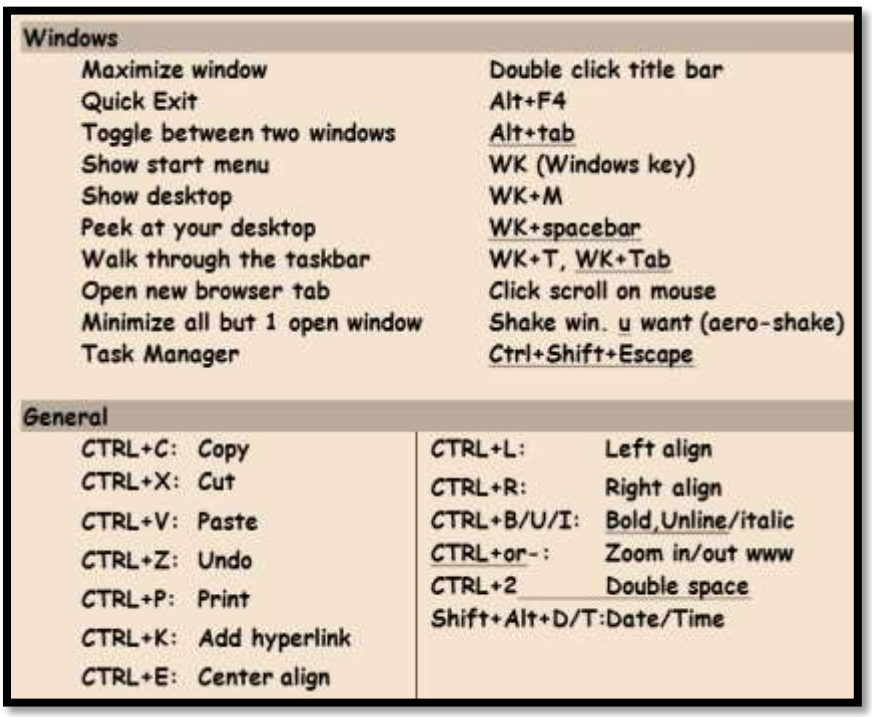
Figure 20—Common computer problems

Common Computer Problems	
What if the double-click doesn't work	What is protocol for email subject line
What if the monitor doesn't work	What does 'CC' mean in an email
What if the volume doesn't work	How do I exit a screen I'm stuck in
What if the computer doesn't work	How do I double space in Word
What if the mouse doesn't work	How do I add a footer in Word
What's the right-mouse button for?	How do I add a watermark in Word
What keyboard shortcut closes program	How do I make a macro in Word
How do I move between cells/boxes?	How do I add a border in Word
How do I figure out today's date?	How do I add a hyperlink in Word
What if the capital doesn't work	Keyboard shortcuts for B, I, U
What if my toolbar disappears	What if the program disappears
What if the document disappears	What if the program freezes
Keyboard shortcut for 'undo'	What is the protocol for saving a file

_____Adapt both questions and answers to the device used in your school.

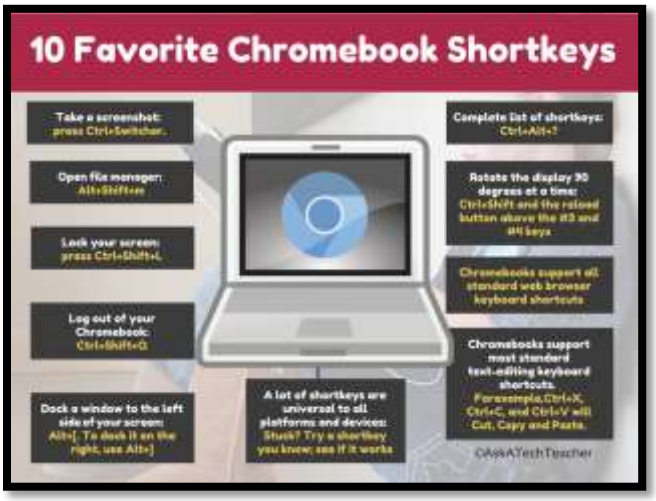
_____Include shortkeys like *Figure 36*:

Figure 21—Common shortkeys



_____Why are shortkeys considered in the category 'problem solving'?
_____See *Figures 37a* and *37b* for examples of platform-specific shortkeys:

Figure 22a—iPad shortkeys; 37b—Chromebook shortkeys



_____If you can't read these posters, visit this website for a free download of these posters and others (http://askatechteacher.com/getting-started/free-posters/). You'll find a lot of posters at this site that are used in this book. Feel free to grab any you'd like (of course, provide proper credit to Ask a Tech Teacher©).
_____Board presentations provide an authentic method of practicing presentation skills discussed in Common Core under 'Speaking and Listening'.
_____While students are signing up, classmates can practice keyboarding or visit inquiry-based websites you've listed on the class internet start page (or wherever you collect links for class use).
_____Remind students that *Important Keys* quiz is next week.
_____Discuss Problem Solving. This is a life skill that transcends a subject. Expect students to transfer knowledge to all parts of life.

_____Review article at lesson end: ***"How to Teach Students to Solve Problems".***
_____Discuss what it means to be a 'problem solver'. Who do students go to when they need a problem solved? Do students believe that person gets it right more often than others? Would they believe most people are wrong half the time?
_____When students face a problem, try to solve it before asking for assistance. Use strategies in *Figure 38* **How to Solve a Problem**.

_____Discuss 'Big Idea': Is problem solving 'cerebrally-stimulating? Is it fun? Why or why not? Discuss quotes in *Figure 39*.
_____Discuss student responsibility to make up missed classes. How is this 'problem solving'?
_____Discuss why you ask students to solve hardware problems independently.
_____Problem solving is closely aligned with logical thinking, critical thinking, reasoning, and habits of mind. Discuss characteristics of a 'problem solver' (from Common Core Standards for Mathematical Practice):

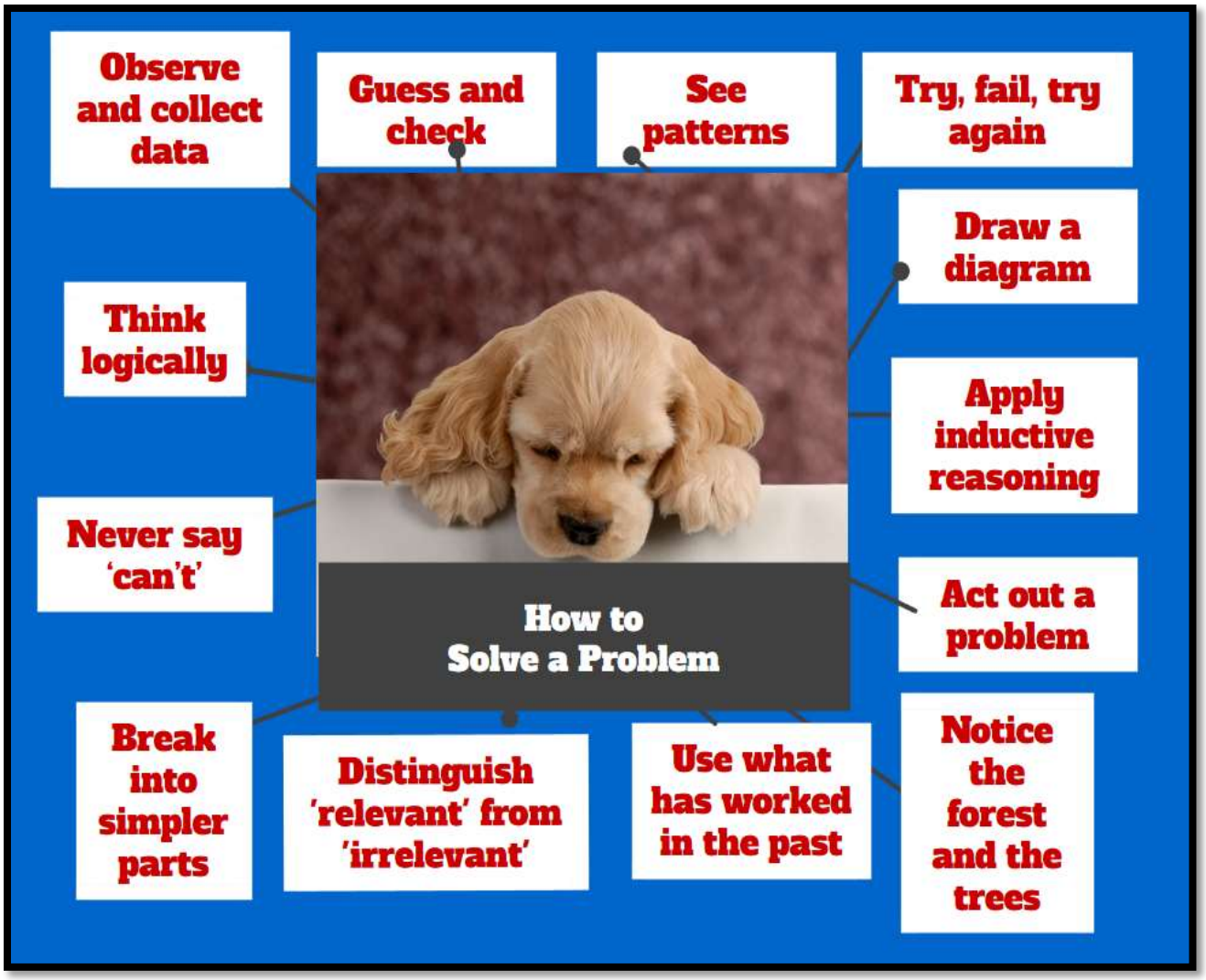
- *Use appropriate tools strategically.*
- *Attend to precision.*
- *Make sense of problems and persevere in solving them.*
- *Value evidence.*

- *Comprehend as well as critique.*
- *Understand other perspectives.*
- *Demonstrate independence.*

_____How do these compare-contrast to the strategies in *Figure 38,* **How to Solve a Problem.**

_____Discuss these strategies with students. Asks them for personal examples of each. If they don't have any, prod them gently with your personal experiences. What is the overlap between solving math problems and solving life problems?

Figure 23—How to solve a problem

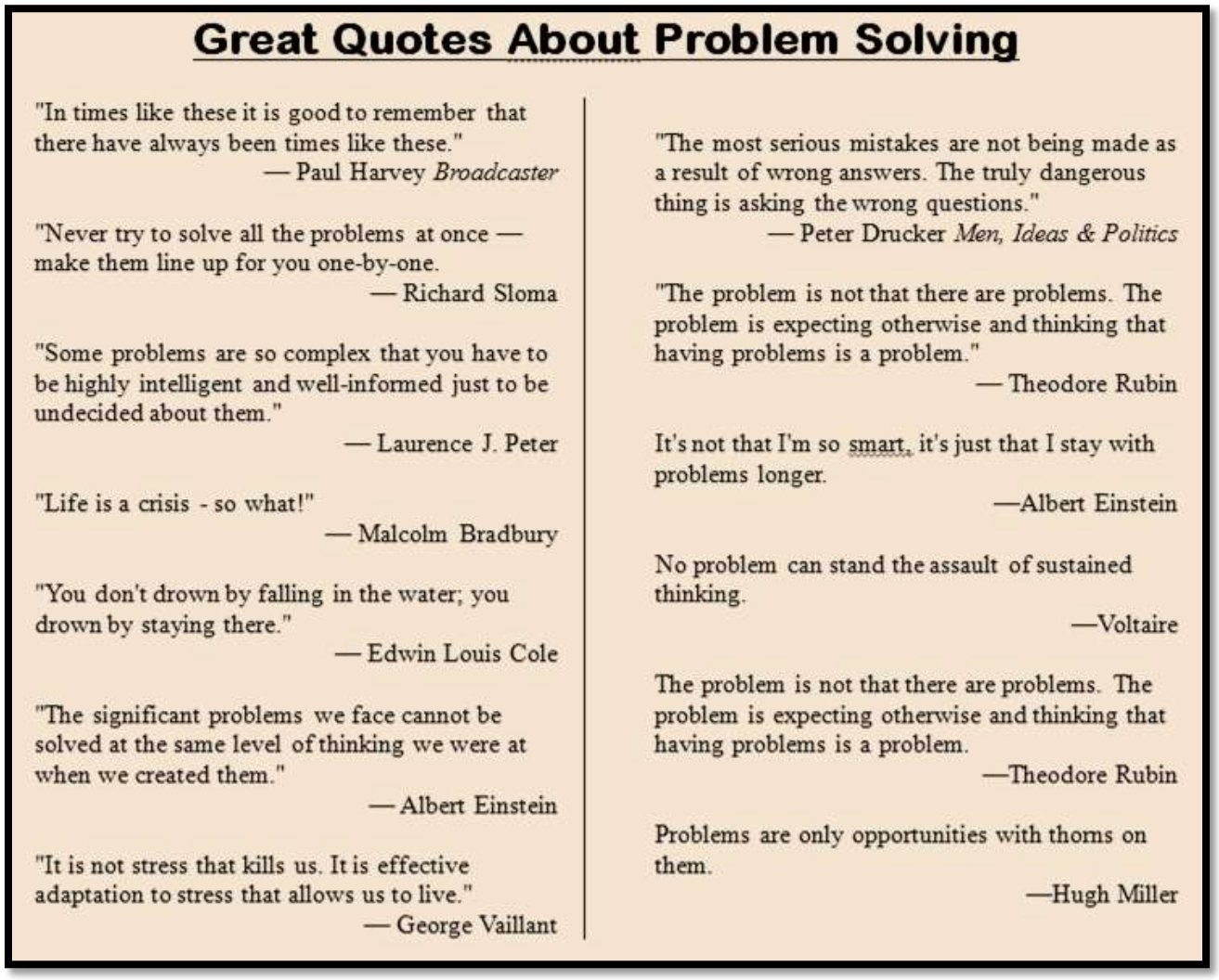


_____Discuss common problems students will be expected to solve by the end of 4th grade by referring back to those included in the Problem-solving Board.

_____Problems at the beginning of each weekly lesson relate to the activities they will complete during the week. They may or may not be different/the same as those on the Problem-solving Board. By the end of each lesson, expect students to solve these independent of assistance.

_____For your own problem-solving skills: Read the article at the end of this lesson, ***"What Happens When Technology Fails"****?*

Figure 24—Problem-solving quotes



Great Quotes About Problem Solving

"In times like these it is good to remember that there have always been times like these."
— Paul Harvey *Broadcaster*

"Never try to solve all the problems at once — make them line up for you one-by-one.
— Richard Sloma

"Some problems are so complex that you have to be highly intelligent and well-informed just to be undecided about them."
— Laurence J. Peter

"Life is a crisis - so what!"
— Malcolm Bradbury

"You don't drown by falling in the water; you drown by staying there."
— Edwin Louis Cole

"The significant problems we face cannot be solved at the same level of thinking we were at when we created them."
— Albert Einstein

"It is not stress that kills us. It is effective adaptation to stress that allows us to live."
— George Vaillant

"The most serious mistakes are not being made as a result of wrong answers. The truly dangerous thing is asking the wrong questions."
— Peter Drucker *Men, Ideas & Politics*

"The problem is not that there are problems. The problem is expecting otherwise and thinking that having problems is a problem."
— Theodore Rubin

It's not that I'm so smart, it's just that I stay with problems longer.
—Albert Einstein

No problem can stand the assault of sustained thinking.
—Voltaire

The problem is not that there are problems. The problem is expecting otherwise and thinking that having problems is a problem.
—Theodore Rubin

Problems are only opportunities with thorns on them.
—Hugh Miller

_____Throughout class, check for understanding.
_____Remember: Bring science book next week.

Class exit ticket: ***Take a poll that asks students to choose problem-solving strategies they are most likely to use in the future.***

Differentiation

- *If homework is due, make sure it's added to class calendar.*
- *Add next week's Important Keys quiz (template in Appendix) to class calendar.*
- *Unplug hardware (i.e., headphones) so students must fix the problem before they start the day's lesson.*
- *Early finishers: visit class internet start page for websites that tie into classwork.*

Article 5—How to teach students to solve problems

How to Teach Students to Solve Problems

Of all the skills students learn in school, **problem solving** arguably is the most valuable and the hardest to learn. It's fraught with uncertainty—what if the student looks stupid as he tries? What if everyone's watching and he can't do it—isn't it better not to try? What if it works, but not the way Everyone wants it to? When you're a student, it's understandable when they decide to let someone tell them what to do.

But this isn't the type of learner we want to build. We want risk-takers, those willing to be the load-bearing pillar of the class. And truthfully, by a certain age, kids want to make up their own mind. Our job as teachers is to provide the skills necessary for them to make wise, effective decisions.

It's not a stand-alone subject. It starts with a habit of inquiry in all classes—math, LA, history, science, any of them. I constantly ask students questions, get them to think and evaluate, provide evidence that supports process as well as product. Whether they're writing, reading, or creating an art project, I want them thinking what they're doing and why.

Common Core puts problem solving front and center. It comes up in ELA ("*Students will be challenged and asked questions that push them to refer back to what they've read. This stresses critical-thinking, problem-solving, and analytical skills that are required for success in college, career, and life."*), but is inescapable in Math. In fact, students cannot fully meet the Math Standards without understanding how to effectively approach the unknown. Consider the Standards for Mathematical Practice that overlay all grade levels K-12:

- *Make sense of problems and persevere in solving them*
- *Reason abstractly and quantitatively*
- *Construct viable arguments and critique the reasoning of others*
- *Model*
- *Use appropriate tools strategically*
- *Attend to precision*
- *Look for and make use of structure*
- *Look for and express regularity in repeated reasoning*

Do these sound like great strategies for everything, not just math? How about deciding what classes to take? Or whether to make a soccer or basketball game on the weekend? Or which college to attend? Using these eight tools strategically, with precision, and tenaciously is a great first step.

The question becomes: How do students **learn to use them**? Certainly, as they accomplish their grade-level math curriculum, you as teacher remind them they aren't doing a multiplication problem (or an Algebra one); rather they're reasoning abstractly or using appropriate tools strategically, or expressing regularity in repeated reasoning. But for deep learning, hands-on authentic experience is required. Let's say, for example, the class is investigating the purchase of an MP3 player. Should they purchase an IPod, a smartphone, a dedicated use MP3 player, or a different option? How do students arrive at a decision—solve that problem? Ask students to work through the steps below as they address a decision. Ask them to note where they accomplish one or more of the Standards for Mathematical Practice above:

1. What do you want in an MP3 player? Should it play music, show videos, pictures, communicate with others, be a phone also? Make that list so you know how to evaluate information as you collect it (**compare/contrast).**

2. What do you know about the topic (**evidence**)? Have you seen some you liked or didn't like? What have you heard about those on your list? You are a good resource to yourself. Don't discount that. You'll be surprised how much you know on a variety of topics. This step is important to college and career. Future employers and schools want you to think, to use your intelligence and your knowledge to evaluate and solve problems.
3. What advice do knowledgeable friends have (**perspective taking, collaboration**)? You want the input of MP3 users. Your friends will think whatever they own is the best, because they're vested in that choice, but listen to their evidence and the conclusions they draw based on that. This is important to a team-oriented environment. Listen to all sides, even if you don't agree.
4. **Dig deeper (close reading)**. Check other resources (**uncover knowledge**). This includes:
    - *people who don't like the product*
    - *online sources. Yep, you might as well get used to online research if you aren't yet. Statistics show more people get their news from blogs than traditional media (newspapers, TV) and you know where blogs are.*
    - *your parents who will bring up topics friends didn't, like cost, longevity, reliability*
5. **Evaluate your resources (integration of knowledge**). How much money do you have? Eliminate the choices that don't fit your constraints (money, time, use, etc.) If there are several choices that seem to work, this will help you make the decision. You might have to save money or get a job so you can afford the one you've chosen. Or, you might decide to settle for a cheaper version. Just make sure you are aware of how you made the choice and are satisfied with it.
6. What are the **risks involved** in making the decision (**reflection**)? Maybe buying an MP3 player means you can't do something else you wanted. Are you comfortable with that choice?
7. **Make a decision (transfer learning)**. That's right. Make a decision and live with it knowing you've considered all available information and evaluated it logically and objectively.

Optionally, you might have students evaluate problem solving in their favorite game, say, Minecraft. All it requires is that they think about what they're doing as they play:

- *What is the goal of Minecraft? How is it best achieved*
- *What does the student know about playing the game that can be used in achieving the goal?*
- *Does working with friends and gaining feedback make life easier in Minecraft?*
- *How does experience in the game affect progress?*
- *And so on...*

This is how students become the problem solvers required of their Future. When the day comes that how they solve a problem affects the direction their life takes (college, career, marriage, children, a tattoo), they'll be happy to have strategies that make it easier.

Article 6—What happens when technology fails?

What Happens When Technology Fails?

Has this happened to you? You spend hours rewriting an old lesson plan, incorporating rich, adventurous tools available on the internet. You test it the evening before, several times, just to be sure. It's a fun lesson with lots of activities and meandering paths students undoubtedly will adore. And it's student-centered, self-paced. Technology enables it to differentiate authentically for the diverse group of learners that walk across your threshold daily.

Everyone who previewed it is wowed. You are ready.

Until the day of, the technology that is its foundation fails. Hours of preparation wasted because no one could get far enough to learn a d*** thing. You blame yourself—why didn't you stick with what you'd always done? Now, everyone is disappointed.

Implosions like this happen every day in tech-centric classrooms. Sometimes it's because the network can't handle the increased traffic, or students can't log in due to a glitch, or the website server goes upside down—nothing a teacher can do about that. Really, the reason doesn't matter. All that matters is an effort to use technology to add rigor and excitement to an old and tired lesson plan fails, leaving the teacher more technophobic than ever. With the pride of place iPads and Chromebooks and 1:1 programs are getting in curriculum decisions, tech problems will be common, varied, frustrating, show-stopping, and nauseating. They will be wide-ranging, everything from a student's device not having required software to the classroom systems not hooking up to the school's network or WiFi. Students will look to their teacher for solutions and the teacher will become best friends with a colleague in thick glasses and the pasty tan of someone rarely away from their computer, whose conversation includes domain-specific words like *gig*, *server*, and *modem* rather than the score of the weekend football games.

To many, 'tech problem' equates to the mind-numbing, bone-chilling feeling of 'I have no idea what to do'.

In a word: Failure. Not a feeling veteran teachers like. As a culture, we eulogize those who go bravely through gates of fire, can think under pressure, are never beaten down, and who can connect the dots even when they're bouncing all over the landscape:

> *No problem can stand the assault of sustained thinking. (—Voltaire)*
>
> *Success consists of going from failure to failure without loss of enthusiasm. (—Winston Churchill)*
>
> *Far better is it to dare mighty things, to win glorious triumphs, even though checkered by failure... than to rank with those poor spirits who neither enjoy nor suffer much, because they live in a gray twilight that knows not victory nor defeat. (—Theodore Roosevelt)*

I've learned you can tell a lot about a teacher by the way s/he handles three things: a rainy day, parents who drop in unexpectedly, and a lesson plan that explodes.

It doesn't stop with the teacher, either. What about when we ask our students to use one of the gazillion available internet tools to communicate-collaborate-share-publish—those exciting Common Core words that are code for 'technology-rich'. Now, when students don't turn in homework, their entirely believable excuse is 'the computer ate my homework' because most everyone has had it happen to them. When I attempt to unravel what happened with questions like: *Where did you save it?* I get the deer-in-the-headlights-look that says: *How am I supposed to know the answer to THAT question?*

Having said all this, I am willing to stipulate: Tech failure is inevitable. There are too many moving parts. Too many circuits and algorithms and scripts and wires shoved under a desk to expect it to go right all the time or even most of the time. Exorcise any thought of *perfection* in the same sentence as *tech* from your syntax. But if fear of failure is a reason NOT to use technology, no one would ever cross that digital threshold. So let's ignore the absolute inevitability of failure, and address the question: *What do I do when it happens?*

I have three ideas:

Prepare for it

I'm not fatalistic. I'm realistic. Technology—be it phones, scanners, your house's water meter, your child's online report cards, the Smart TV you just purchased—fails often and will continue to do so into the foreseeable future. In that way, it is very human. Perfection is well outside of its programming.

Knowing that, bone up on the **Law of Technology Failures**: *The reliability of technology is directly proportional to your needs.* To decode that: Tech fails most often where it is needed most. Prevent failures by having back-ups—not just of data, but devices, hardware, systems. For example, if you're trying to get to Disneyland from Arkansas with three friends, each with Google Maps (or my new favorite, Waze) on their phones, said phones will never run out of battery power. Ever. Redundancy. Install three browsers on your computer so if Firefox won't work, Chrome will. Build in time for system reboots (because that solves at least half the tech problems that plague a classroom). Pre-test relevant systems to become familiar with glitches. Sure, tech will still fail, but not in areas in which you are prepared.

Having said that, keep in mind the **corollary to the Law of Technology Failures**: *The better technology works, the safer you'll feel with it, the less redundancy you will activate.*

Be a problem solver

Dylan Thomas said this as well as anyone in history:

> *Do not go gentle into that good night. Rage rage against the dying of the light.*

Embrace problems. Own them. Here are three basics that will get you through many a stressful tech day:

1. **Know the basics.** My job requires tech every day so I've solved a lot of problems. I've found there are only about twenty that account for 80% of the downtime. The top two: If the digital device won't start, check to see if it's plugged in. If power isn't the problem, reboot. Those two solve about half of the tech traumas I face in the classroom. There are eighteen more I'm equally prepared for. Track yours by writing each down as it happens. Soon, you'll find it's the same ones over and over. The tech version of Groundhog Day.
2. **Google the problem.** Lest you think that's too geeky and shouldn't you call an expert first, it's not and you shouldn't. But I understand your fear. It's such a common fear, it has a name and its own website call LMGTFY.com. That's an acronym for 'Let Me Google That For You'. Before you become that LMGTFY (pronounced *lemjetfy*) person, grab your keyboard, slam those words into the Google search bar, and see if there's a solution. There will be about 70% of the time. BTW, LMGTFY is a noun, an adjective, and a verb, depending upon how you use it. It can even be used as an expletive.
3. **Be a risk-taker.** Sure we mouth that to our students and Common Core expects it in college- and career-ready students, but does that mean teachers too? Well, yes. Make that who you are. Grin in the face of problems. Model solutions. As Edwin Cole famously said, "*You don't drown by falling in the water; you drown by staying there."* Don't drown. Don't stay there. Stand up and you may discover it's only an inch deep.

Build in alternatives

Many times this year during the nation's premiere tech-in-ed conference—ISTE—the internet didn't work. Lots of reasons why—all that mattered was that presenters couldn't access their presentations. Most handled this with aplomb either with screenshots or animated descriptions of what might have been. No one quit and walked off the stage.

Let's face it: If you're over the age of ten, you know life runs off of Plan B.

What else can you do?

- **Don't expect technology to remain unchanged**—Links die, by some counts, about 4% a year. The website you used last week can be 404—not working today (for example: Nimble Fingers for keyboarding). The favorite software you've used for years could be incompatible with system updates (i.e., Oregon Trail). Your new digital device won't run a handful of the programs you use regularly. Prior to presenting, go through the tool you're going to use or the process you're teaching—see if it actually works as it used to.
- **Use it as a teachable moment—**show students how you handle stress, problems, frustration. It's a learning experience. It's an opportunity to stretch that magnificent big brain and devise a solution. It's a chance to ask students, "*What would you do?"*
- **Don't apologize**—save apologies for something you caused. Tech failures are the cause of the Universe.

Tech is the third leg to the 'inevitable experiences' stool, along with death and taxes. Personally, I don't know anyone who hasn't had a major tech failure. You know it's coming. That's out of your control. The only thing you can control is how you react to it.

Lesson #15—Holiday Flier, Cover Page, Greeting

Vocabulary	Problem solving	Skills
• *Back up* • *Border* • *Cover page* • *Ctrl+P* • *Double-space* • *DTP* • *Flier* • *Font* • *Greeting* • *Layout* • *Placeholder* • *QWERTY* • *Schemes* • *Sidebar* • *Template* • *Text box* • *Text box* • *Title page* • *Watermark*	• *Can't find 'save' (use Ctrl+S)* • *Clicked file-print—nothing (Is there a clue on screen?)* • *How do I back up my work?* • *How do I fold this card? (top down, side-to-side)* • *I can't find my file folder (are you logged in as correct user?)* • *I can't type on page (did you add a text box?)* • *Not prepared for presentation (take a deep breath. You know more than you think)* • *Printer didn't work (where'd you print?)* • *What's 'A' mean at end of text box (text overflowed text box)* • *What's the difference between 'save' and 'save as'?*	**New** *Cover page* *Title page* *Compare-contrast productivity tools* **Scaffolded** *One-page greeting* *Compare-contrast skills* *Tables* *Online research* *Greeting cards* *Keyboarding skills* *Problem solving*
Academic Applications *Reports, greeting cards, community service*	**Materials Required** *DTP, Speak Like a Geek rubric, keyboarding program, word processing tool, Evidence Board badges, student workbooks (if using)*	**Standards** *CCSS.ELA-Literacy.W.4.4* *NETS: 1a, 1b*

Essential Question

How do I use technology to create a quick one-page document?

Big Idea

Technology can assist in the creation of quick, sophisticated materials for home and school

Teacher Preparation

- Know if there are any class/school parties that students can make fliers for.
- Have grading rubrics for Speak Like a Geek.
- Talk with grade-level team so you tie into conversations.
- Ensure that all required links are on student computers.
- Know which tasks weren't completed last week and whether they are necessary to move forward.
- Integrate domain-specific tech vocabulary.
- Know whether you need extra time to complete lesson.

Assessment Strategies

- *Completed project*
- *Followed Common Core writing guidelines*
- *Properly used images*
- *Worked independently*
- *Used good keyboarding habits*
- *Completed warm-up and exit ticket*
- *Joined classroom conversations*
- *[tried to] solve own problems*
- *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 with a block of 30 minutes for project***

Class warm-up: ***Keyboarding on school typing tool***

_____Speak like a Geek board starts today (or right after holidays). Students present information, take audience questions. Grade is based on knowledge and confidence. If necessary, review

_____Remember: Homework due end of each month (practicing all keys by now).

_____Any evidence of learning to post on Evidence Board?

_____Students start desktop publishing unit. What is 'desktop publishing'? What's different between the way DTP shares information and word processors? Prompt students to consider the importance of color, layout, and design elements in creating a project. Show students *Figure 74* and ask them as a group to fill in the blank cells.

Figure 25—Compare/contrast tools—A

Element	Presentation	Word processing	Spreadsheets	DTP
Purpose	*Share a presentation*	*Share words*		
Basics		*Text-based* *Design is secondary to content* *Layout may detract from words* *Primarily words communicate*		
Sentences		*Full sentences with proper conventions*		
Content	*Slides cover basics, to remind presenter what to say*			
Use		*As complete resource*		
Presentation		*Speaker reads from document*		
What else				

_____When they're done, it'll look something like *Figure 75*:

Figure 26—Compare/contrast B

Element	Presentation	Word processing	Spread--sheets	DTP
Purpose	*Share a presentation*	*Share words*	*Turn numbers into information*	*Share information using a variety of media*
Basics	*Graphics-based Design is important to content Layout communicates Few words, lots of images*	*Text-based Design is secondary to content Layout may detract from words Primarily words communicate*	*Number-based Focus on tables, graphs Little text; lots of statistics and date Almost no words*	*Mix of media—equal emphasis on text, images, layout, color*
Sentences	*Bulleted, phrases*	*Full sentences with proper conventions*	*None*	*Full sentences, bullets,*
Content	*Slides cover basics, to remind presenter what to say*	*Thorough discussion of a topic. Meant to be complete document*	*Statistics, data, charts, graphs*	*To draw an audience in;*
Use	*As a back-up to presentation*	*As complete resource*	*To support other presentation methods*	*Good way to group information for easy consumption*
Presentation	*Speaker presents with their back to the slideshow*	*Speaker reads from document*	*Speakers uses it in a presentation or 1:1*	*Speaker passes out as a handout or take-way*
What else				

_____Students have used DTP. Remember 1st grade flier cards (*Figure 76a*), 2nd grade document for an extra-curricular activity (*Figure 76b*), and 3rd grade magazine cover (*Figure 76c*) -- if you've been using the SL tech curriculum:

Figure 27a—Fliers from 1st grade; 76b—2nd grade; 76c—3rd grade

_____Select one of the following three projects for your student group:

- *Fliers*
- *Cover pages*
- *Greeting cards*

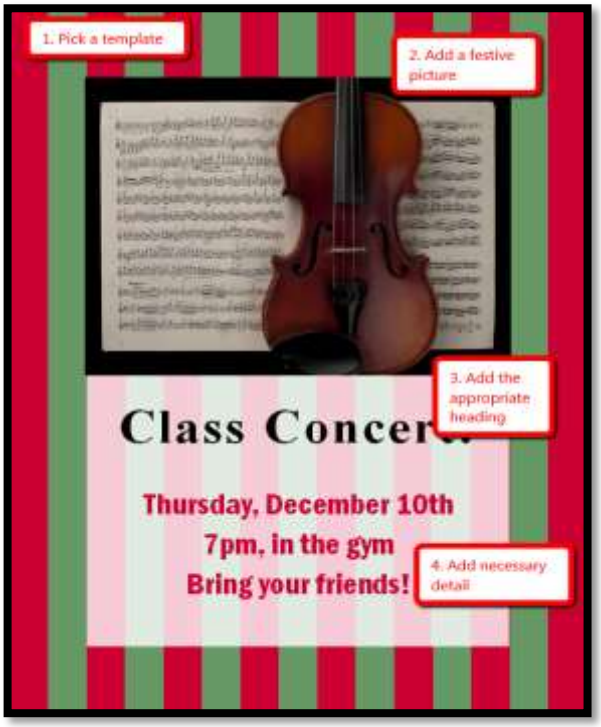
Project #1: Fliers

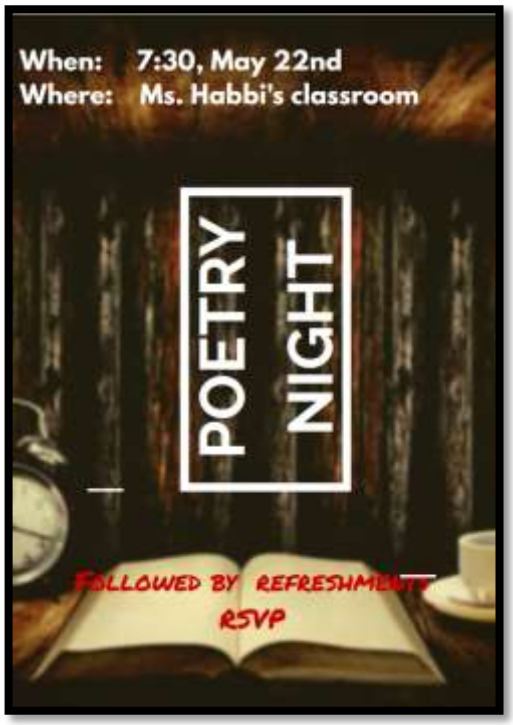
_____Characteristics of a desktop publishing flier include:

- *clear, coherent, concise writing*
- *text, images, design engages the audience*

_____Discuss purpose of flier. Is there a holiday concert coming up? A play? A classroom event they'd like fliers to post around school? Pick one.
_____Review desktop publishing program used at your school (*Figure 77a* is from Publisher; *Figure 77b* is from Canva). *Figure 77a* includes steps to create a flier:

Figure 28a—DTP flier projects in Publisher; 77b—Canva





- *select template*
- *select themed picture*
- *add a title (i.e., Class Concert)*
- *add details*

_____If students get pictures from internet, discuss virtual neighborhood. How can they stay safe?
_____Save to digital portfolio; print/publish/share, as appropriate to your student group.
_____When finished, students work on the timeline for next week's trifold (called *My Life Events*).

- *Create a 3x10 table in a word processing program.*
- *Organize as 'Year', 'World Event', and 'My Event'.*
    - *'Year' is the nine years of the student's life, sequentially.*

- *'World Event' is something big that happened around the world during that year of the student's life. The goal: Provide perspective on what the student experiences compared to what the world does.*
- *'My Event' is a big event in the student's life. This isn't 'I had a birthday', rather 'I got a baby brother'.*

- *Fill in all required information. Provide resources for researching these events, such as Info Please's Year by Year (http://bit.ly/1DE1ZeE).*
- *Figure 78 is an example:*

Figure 29—My Life Events timeline table

Year	World Event	My Event
2015	ISIS is considered by some the world's greatest threat	I changed schools
2014	Russia took Crimea from the Ukraine	My essay won a prize
2013	Beijing air pollution levels declared hazardous to human health	I received an award
2012	Kateri Tekakwitha became first native American saint	I won my first violin competition
2011	Osama bin Laden died	My brother joined the Army
2010	The Winter Olympics took place	We got a new dog
2009	Johanna Sigurdardottir took office as Iceland's first female prime minister.	My brother started college!
2008	Bobby Fischer died	My sister graduated from USNA
2007	Barry Bonds passed Hank Aaron as all-time American home run hitter	My dog got cancer

_____Students use their knowledge of creating tables in this project. Include:

- *one event per year in your life (column three—My Event)*
- *one event per year from around the world (column two—World Event)*

_____Students use their online research knowledge to select web-based information for their table.

Project #2: Cover Pages

_____Today, we create cover pages for a class project. What is the purpose of a cover page? Encourage students to come up with these:

- *Draw reader in.*
- *Provide information for categorizing work.*
- *Provide contact information.*

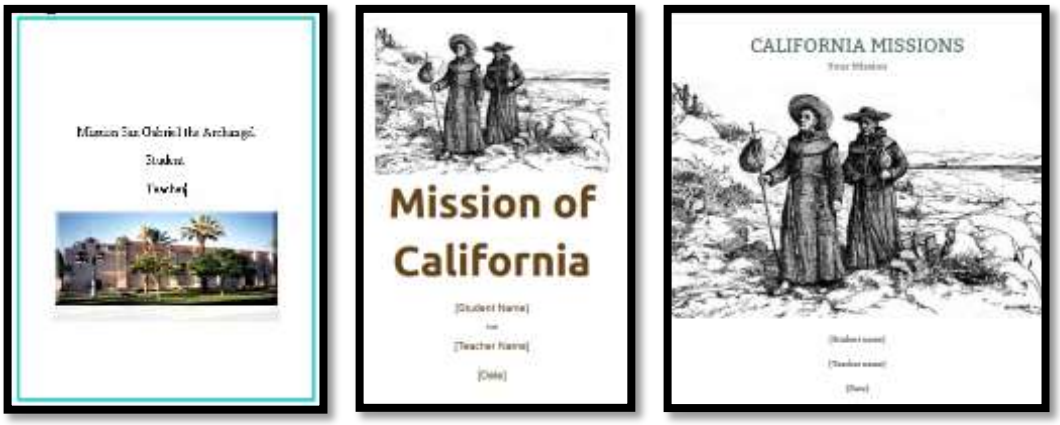
_____We'll use a word processing program (*Figure 79a*), but you can also use Publisher, Google Apps (*Figure 79b*), or an online free tool like Tackk— http://tackk.com (*Figure 79c*).

_____Open the program used in your school. Type in title page info (any font, size 36, Bold). Center vertically/ horizontally on page, double-spaced.
_____Add picture (i.e., mission) as watermark; add same picture at bottom as decoration; add border—no art borders. Why not?
_____Discuss why students can use internet images for this school project. Refer to:

- *copyrights*
- *fair use*
- *public domain*
- *scholarly research*
- *digital rights and responsibilities*

_____Students are familiar with cover page skills; expect them to act independently.

Figure 30a—Cover in Word; 79b—GAFE; 79c—Tackk



_____Before printing, check 'print preview' for layout.
_____Print (Ctrl+P); save to digital portfolio; save-as to flash drive (if available).

Project #3: Greeting Cards

_____Remember designing cards in the past (if you've been using the SL tech curriculum):

Figure 31a—Greeting cards in 1st grade; 80b—2nd grade; 80c—3rd grade

_____*Figure 80a* was a one-page card in a drawing program you created in 1st grade; *Figure 80b* was a one-page card in a desktop publishing program you created in 2nd grade; *Figure 80c* was a folding card (like you might buy in a store) you created in either a software or online tool in 3rd grade.

_____Use any desktop publishing program you have available in your school—or even an online tool. *Figure 81a* uses Word; *Figure 81b* uses Open Office; *Figure 81c* uses Google Apps; *Figure 81d* uses an online tool:

Figure 32a-d—Greeting card templates

_____Open the desktop publishing program. Find the template for 'greeting cards'. How you do this will vary by digital tool. Preview the program first so you know how to accomplish this.

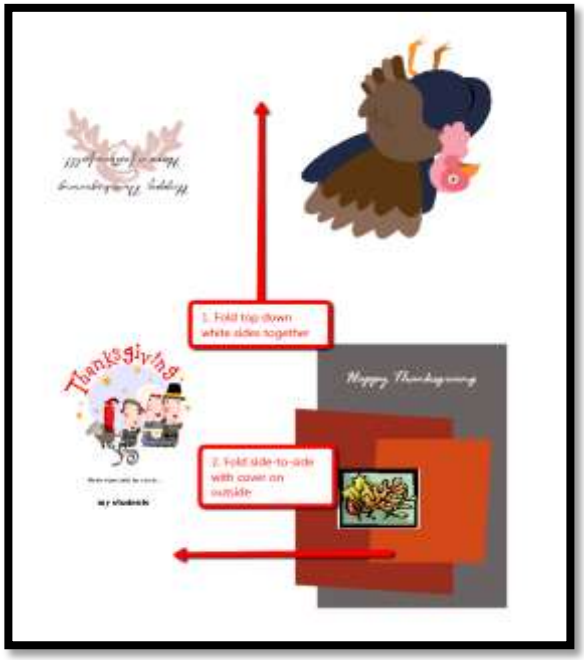
_____Discuss 'templates' with students, what they are, and their purpose for not only creating greeting cards but lots of other documents.

_____Since fourth graders have used this tool often in the past, let them work independently, adding images, editing text, and tweaking the layout. Help if they get stuck, but give them time to problem solve before you step in.

_____Those new to cards: Minimalize this. Just edit text and add a picture.

_____Greeting cards are excellent projects to practice writing conventions being reviewed in student classes. Consider forming the card's message to include skills being discussed in class, i.e.:

Figure 33--How to fold card



- *Use precise language and domain-specific vocabulary to inform about or explain the topic (CCSS.ELA-Literacy.W.4.2.d).*
- *Use relative pronouns (CCSS.ELA-Literacy.L.4.1.a).*
- *Spell grade-appropriate words correctly, consulting references as needed (CCSS.ELA-Literacy.L.4.2.d).*

_____Save (Ctrl+S) to your digital portfolio. Print. If you need help folding, see *Figure 82*.
_____Save (Ctrl+S); save-as to flash drive (if available). Discuss difference between 'save' and 'save-as'.
_____Throughout class, check for understanding.
_____When students finish, they can work on their My Life Events table in preparation for next week's project.

Class exit ticket: ***Students show you how far they are on My Life Events table.***

Differentiation

- *Add My Life Events table due date to class calendar.*
- *Add homework due date to class calendar*
- *Use cover page as a title page, with adjustments.*
- *Students go to holiday themed websites here (http://bit.ly/1J40FFq) and holiday-themed apps here (http://bit.ly/1PMuZsa).*
- *Anytime you can inject tech into class, do it! Students love seeing gadgets in action. For example—take a video of students working and upload to class website/blog/wiki.*
- *Replace lesson with 2nd Grade Lesson #4 Big Huge Labs Those Pictures in curriculum extendors (http://bit.ly/1FryFN8).*
- *Replace this lesson with 4th Grade Lesson #5 IPads 101 in curriculum extendors (http://structuredlearning.net/k6curriculumextenders.html).*

CLASSROOM POSTERS

1. Backspace and Delete
2. Digital Neighborhood
3. Email Etiquette
4. Fair Use
5. Here's What We've Done
6. How I Learn
7. How to Save—4 Ways
8. I Can't Find My File
9. Internet Research
10. K-5 Keyboarding Stages
11. Keyboarding Hints
12. Landscape
13. Netiquette Rules
14. Portrait
15. Save or Save-as
16. Save Early Save Often
17. Select-Do
18. Troubleshooting Computer Problems
19. What's a Mulligan
20. Why Learn to Keyboard?

Which book?	Price
K-8 Tech Textbook (each grade level—print, digital, or both)	*$32.99/25.99//53.08 + p&h*
K-8 Student tech workbooks (with video, teacher manual)	*$199 per grade level*
35 More Projects for K-6 (aligned w curriculum—digital only)	*$31.99/25.99/52.18 + p&h*
55 Tech Projects—Volume I, II, or both (digital only)	*$18.99/$32.49 + p&h*
K-8 Keyboard Curriculum (print, digital, or both)	*$25.99-$64*
K-8 Student keyboarding wkbks (with video, teacher manual)	*$199 per grade level*
K-8 Digital Citizenship Curriculum	*$29.95/25.99/50.38 + p&h*
K-8 Common Core Lessons	*FREE-$48.55 + p&h*
Pedagogic Articles	*$6.99 (digital only)*
K-8 Tech Scope and Sequences (Word doc)	*$9.99 each (digital only)*
Posters for the Tech Lab	*$2.99 each (digital only)*
16 Holiday Projects	*$4.99 (digital only)*
98 Tech Tips From Classroom	*$9.99 (digital only)*
Classes (certificate and college credit)	*$260-$450*
Project-based learning (lesson plans)	*$1.99 each on varied topics*
New Teacher Survival Kit (K-5)	*$360 and up (+ p&h)*
New Teacher Survival Kit (K-6)	*$380 and up (+ p&h)*
New Teacher Survival Kit (6-8)	*$330 and up (+ p&h)*
Homeschool Tech Survival Kit	*Starts at $99.00*
Bundles of lesson plans	*$7.99 and up*
Mentoring (1 hr. at a time)	*$50/hour and up*
Year-long tech curriculum help (via wiki)	*$145*
Consulting/seminars/webinars	*Call or email for prices*
Total	

Fill out this form (prices subject to change).
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