



# Technology curriculum



Student  
Workbook

6th Edition



*Grade 5*

by Ask a Tech Teacher

# **TECHNOLOGY Curriculum Student Workbook**

***Fifth Grade***

***By Ask a Tech Teacher©***

***Part Six of Nine in the SL Technology Curriculum***

2024

V.6.5

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# Introduction

This is the next step in an exciting journey that employs technology to enhance your learning. You won't be memorizing tools and struggling through new programs. You'll learn them as you use them—authentically, as part of classroom activities. Your goal: Make school easier, more relevant, and more in tune with how you learn. We're going to help. All you need to do is follow this workbook.

How much time will that take? Here's an estimate:

<b>Grades K-2</b>	<b>15-30 min. a week</b>
<b>Grades 3-8</b>	<b>30-60 min. a week</b>



Are you surprised you can learn so much in a short time? Wait till you see how fun it is—with lots of choices. You can even work with a friend, on laptops, Chromebooks, iPads (sometimes) or desktops, Windows or Macs.

Follow the plan. Execute it faithfully. It works.

## Programs You'll Use

Programs used in this curriculum focus on those that serve the fullness of your educational journey. Free alternatives are included where possible:

General		K-2
<i>Email</i>	<i>Drawing tools</i>	<i>Productivity tools (Office, Google Docs)</i>
<i>Google Earth</i>	<i>Keyboard tools</i>	<i>Desktop publishing tools</i>
<i>Web tools</i>		<i>Photo editing tool(s)</i>

To become the person in *Figure 4* means you use technology as a learning tool. We'll show you how.

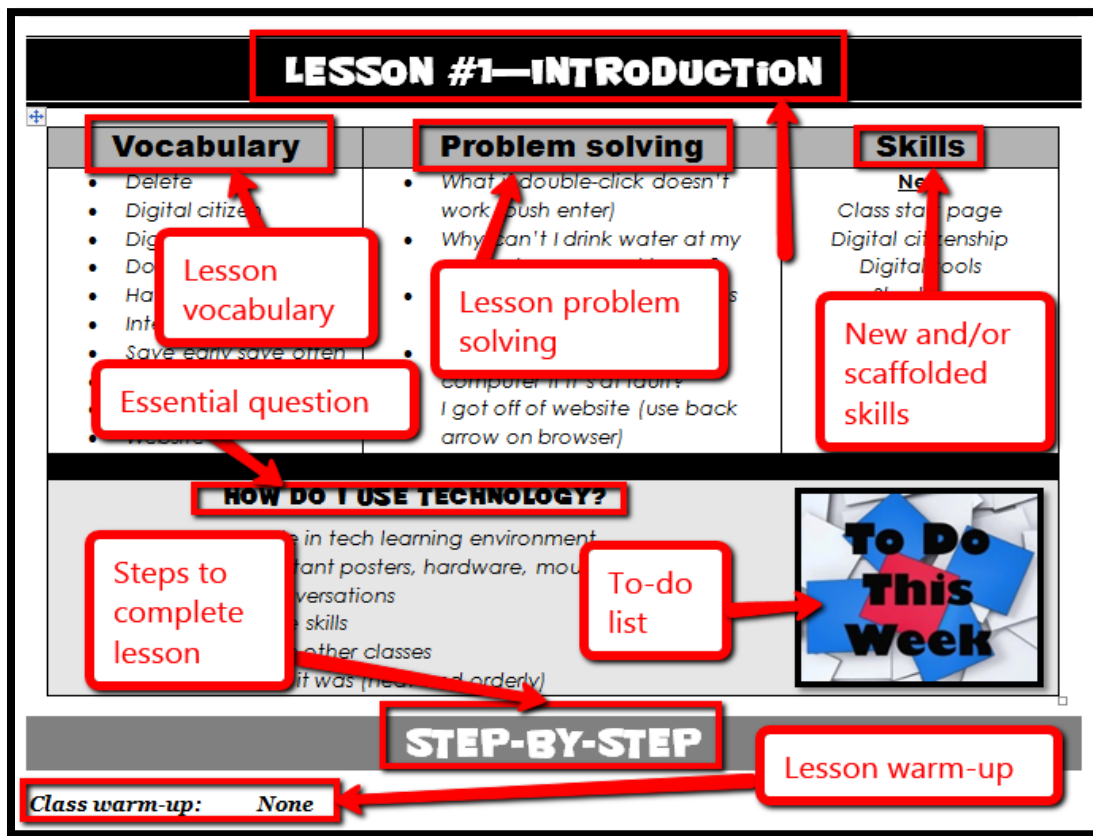
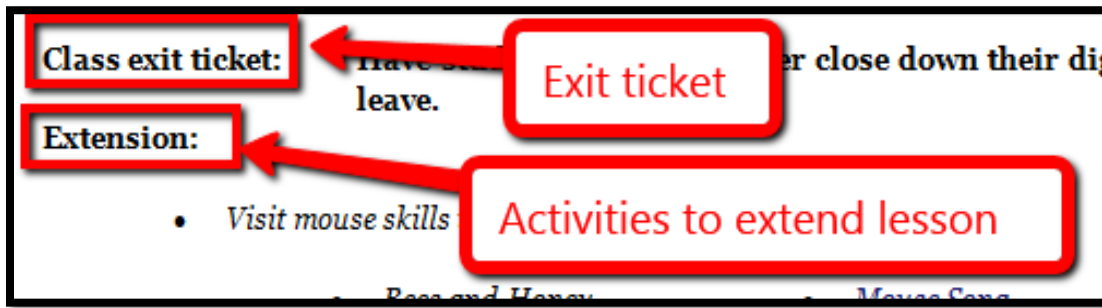
## What's in this Workbook?

Each lesson includes:

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• <i>activities to extend lessons</i></li> <li>• <i>class exit ticket</i></li> <li>• <i>class warm-up</i></li> <li>• <i>essential question</i></li> <li>• <i>examples, rubrics, images, printables</i></li> <li>• <i>problem solving</i></li> </ul> | <ul style="list-style-type: none"> <li>• <i>skills—new and scaffolded</i></li> <li>• <i>steps to accomplish goals</i></li> <li>• <i>suggestions based on digital device</i></li> <li>• <i>supporting links</i></li> <li>• <i>to-do list</i></li> <li>• <i>vocabulary used</i></li> </ul> |
|--|--|

*Figure 1a-b* shows what comes at the beginning of each lesson and the end:

Figure 1a-b—Detail of each lesson



## How to Use This Book

Your teacher(s) (meaning the adults who direct your technology training) will work with you about forty-five minutes a week. You'll spend an additional fifteen-sixty minutes each week using tech skills—online, with software, teaching friends, for homework, or in class projects. If there is a skill you don't understand, get help, especially when you see it come up a second or third time. By the end of 8<sup>th</sup> grade, you'll have a well-rounded tech education that prepares you for college and career.

The curriculum map in Figure 2 (zoom in if needed) shows what's covered in which grade. Where units are taught multiple years, teaching reflects increasingly less scaffolding and more independence on your part.

## 5th Grade Technology Curriculum: Student Workbook

*Figure 2—Curriculum Map—K-8*

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

Figure 3 is a month-by-month map. Highlight each topic with your annotation tool when you finish it.

*Figure 3—Curriculum Map—5th grade, month-to-month*

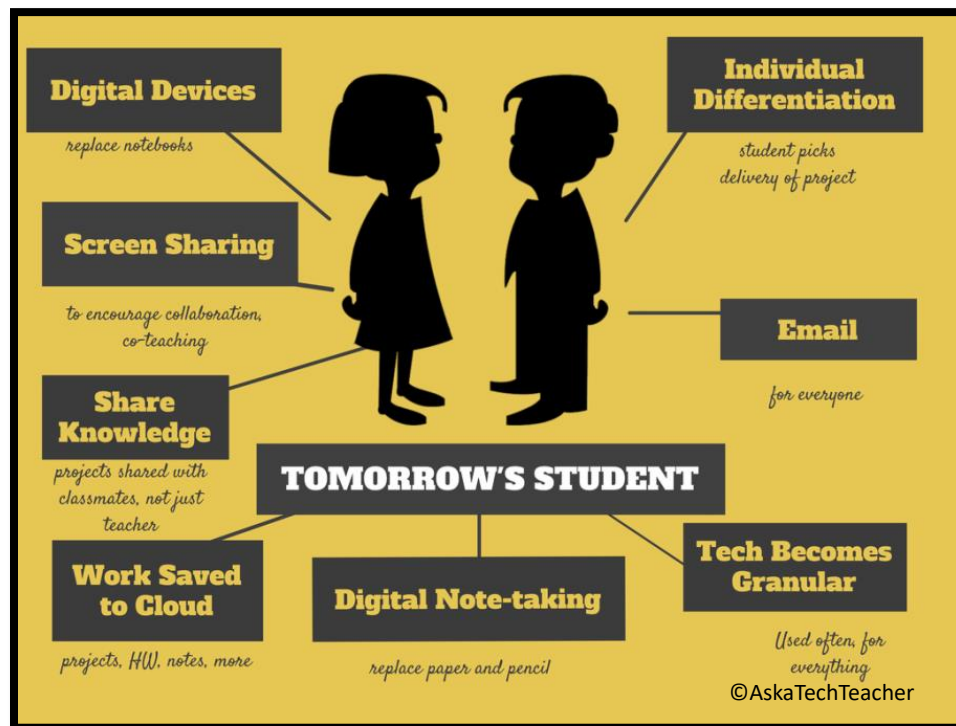
	Sept Wk1-4	Oct Wk5-8	Nov Wk9-12	Dec Wk13-16	Jan Wk17-20	Feb Wk21-24	March Wk25-28	April Wk29-32
<i>Blogs</i>	x			x		x		
<i>Class mgmt tools</i>	x							
<i>Coding/Programming</i>		x						x
<i>Collaboration</i>						x	x	x
<i>Communication</i>	x							x
<i>Computer etiquette</i>	x							x
<i>Critical thinking</i>	x			x	x			x
<i>DTP</i>			x	x				x
<i>Digital Citizenship</i>	x							x
<i>Google Earth</i>						x		x
<i>Graphics</i>						x	x	x
<i>Internet</i>			x			x		x
<i>Internet privacy</i>	x					x		x
<i>Keyboarding</i>	x	x				x		x
<i>Presentations</i>								x
<i>Problem solving</i>	x	x	x	x	x	x	x	x
<i>Publishing/sharing</i>	x							x



Research			X					X
Spreadsheets					X			X
Visual learning		X	X	X	X			X
Vocabulary	X	X	X	X	X	X	X	X
Webtools	X	X				X		X
Word Processing	X	X				X		X

Here's where you're headed (Figure 4—zoom in if necessary):

Figure 4—Tomorrow's student



Here are a few hints on how this workbook will get you there:

- At your grade level, you'll probably have help from a teacher, parent, or another adult as you work. When you see a section for 'Notes' at the end of some lessons, this is where you add your thoughts, ideas, comments, and suggestions.
- Each lesson starts with a *warm-up* to get you back into tech.
- Each class ends with an *Exit Ticket* to wrap up learning.
- Lessons include *Extensions*, in case you get done early.
- Zoom in or out of workbook pages to get exactly the size that works for your needs. Don't worry if the PDF reader is at 80% or 120%. Set it to fit your learning style.
- If you have an idea on how to complete a lesson using a different tool, suggest it. Your teacher will probably be happy to accommodate you.
- You can work at your own pace, try skills, and ask for help when you need it. There's a lot of detail in the book to explain how to complete projects and lessons.

- You can use this workbook on the following digital devices:

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

*Figure 5a-h—Digital Devices for workbooks*



...at school or at home

*Figure 6—Use workbooks at school or home*



- Check with your teacher on which of these are available with your program license.
- Use lesson vocabulary in class and out. You gain authentic understanding by doing so.



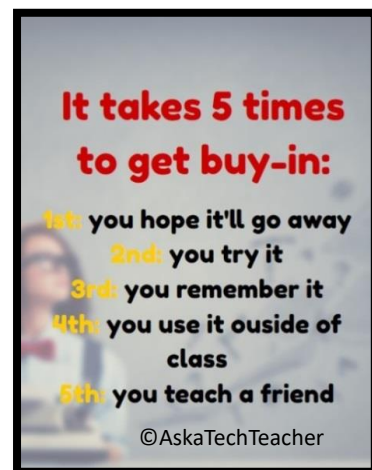
- This icon means you'll work with a partner. Collaboration and working in groups is an important part of learning.



- This icon means there is an activity that requires you write in the workbook. Your teacher will explain more.
- Focus on problems listed in each lesson, but embrace all that come your way. Be a risk taker.
- Remember: It takes five times with a skill to get it—

- First:* you hope it'll go away
- Second:* you try it
- Third:* you remember it
- Fourth:* you use it outside of class
- Fifth:* you teach a friend

*Figure 7—Tech use plan*



- Check off items you finish (on the \_\_\_\_\_ in front of task) so



you know what you've completed. It's fine if you don't get everything done. Return to it when you finish a lesson ahead of time. Use an annotator like Adobe Acrobat.

- Your teacher will assess your work based on the weekly 'To Do' list. Be sure you've completed items and submitted in the manner required.
- When you finish each lesson, transfer knowledge to projects at school, home, the library, a club—wherever you use digital devices.
- At the end of each tech session, leave your station as you found it—organized and neat.

## 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

Here's how a lesson will run in **the tech lab**:

- Find a **written schedule** for the day on class screen:
  - Warm up
  - Main activity
  - Exit ticket

Start with the warm-up when you arrive to class.

- Complete **Board presentations** (grades 3-8).
- Occasionally, review/introduce skills.
- Before leaving, **complete the class exit ticket**.

Figure 8—Keep lessons in order



In your **grade-level classroom**, your teacher will scatter the lesson pieces above throughout the week:

- **3-10 minutes for the class warm-up**—at the start of 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 class exit ticket**—to reinforce learning

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## About the Author

**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 website articles help thousands of teachers, homeschoolers, and those serious about finding the best way to maneuver the minefields of technology in education. They have published hundreds of ebooks, workbooks, articles, and have materials shared throughout the world.

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## Lesson #2 Digital Tools in the Classroom

Vocabulary	Problem solving	Skills
<ul style="list-style-type: none"> <li>Benchmark</li> <li>Blog</li> <li>Bounce back</li> <li>Ctrl+F</li> <li>Digital portfolio</li> <li>Dropbox</li> <li>Email</li> <li>Log in</li> <li>Peripheral</li> <li>Protocol</li> <li>Shortcut</li> <li>Warm-up</li> </ul>	<ul style="list-style-type: none"> <li>I forgot my log-in (where did you record it?)</li> <li>I gave my log-in to a friend</li> <li>I used someone else's log-in</li> <li>Email bounced back (resend from 'sent' file after checking address)</li> <li>How do I search (Ctrl+F)</li> <li>I can't remember where a tool is on the toolbar (use shortcut)</li> <li>I forgot the Exit Ticket</li> <li>Computer doesn't work (how have you solved this in the past?)</li> </ul>	<p style="text-align: center;"><b><u>New</u></b></p> <p style="text-align: center;">Student blogs Class calendar</p> <p style="text-align: center;"><b><u>Scaffolded</u></b></p> <p style="text-align: center;">Digital citizenship Digital portfolios Email Important keys Class website Screenshot</p>

### How do I use digital tools to learn?

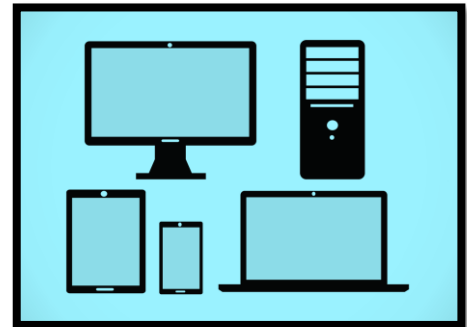
- Completed hardware guide
- Filled in UN/PW list
- Joined classroom conversations
- [tried to] solve own problems
- Completed exit ticket
- Successfully annotated workbook
- Decisions followed class rules
- Joined class conversations
- Left station as it was (neat and orderly)



## Step-by-step

**Class warm-up:**     *None*

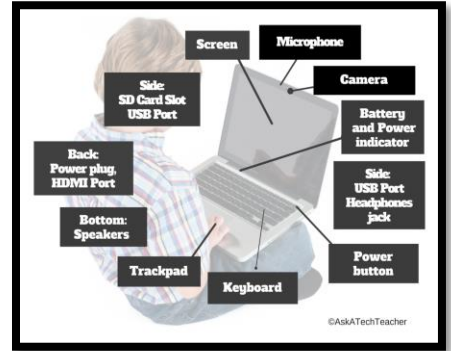
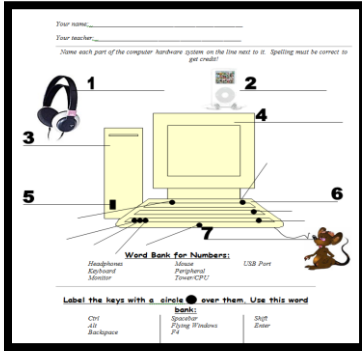
\_\_\_\_\_ Review computer parts. *Figures 16a-c* are parts of a variety of digital devices. Find the listed parts on your school device (full-size copy at the end of the lesson to use for a study guide and testing) in preparation for upcoming assessment. For example, if you use iPads, where are the 'headphones' on this device? Or the mouse? How about the USB Port (there is none)? Where is the iPad microphone (see *Figure 16b*) on, say, the PC or Chromebook (*Figure 16c*)? How about the charging dock? If you use smartphones, see assessment at end of lesson.



\_\_\_\_\_ As you review the parts of your digital device, write the answers into the assessments (at the end of this lesson) as a study guide.



Figure 9a—Parts of computer; 16b—iPad; 16c—Chromebook



\_\_\_\_\_ Discuss how understanding your digital device’s hardware helps solve tech problems (Figure 17—zoom in if needed). More on this later.

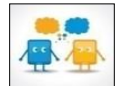
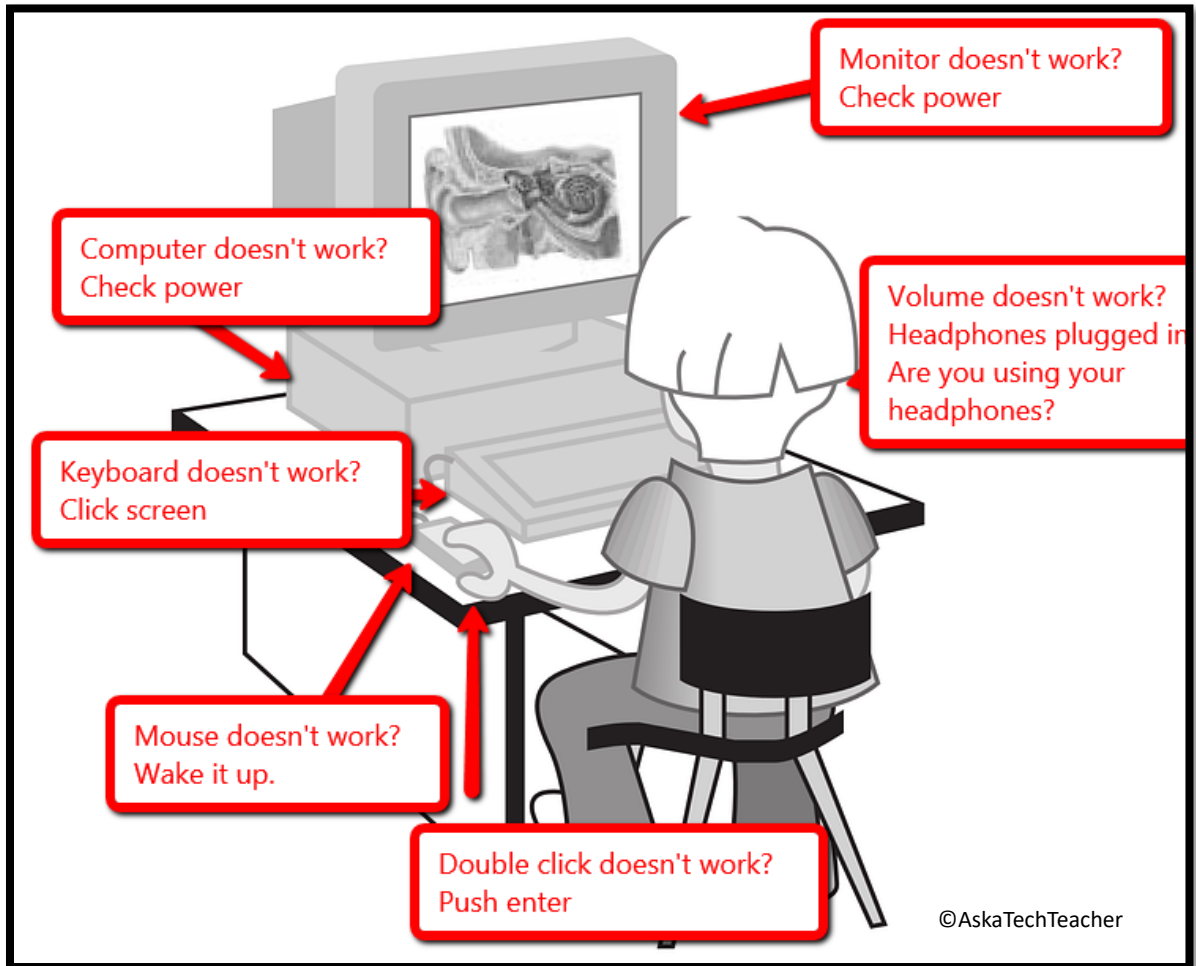


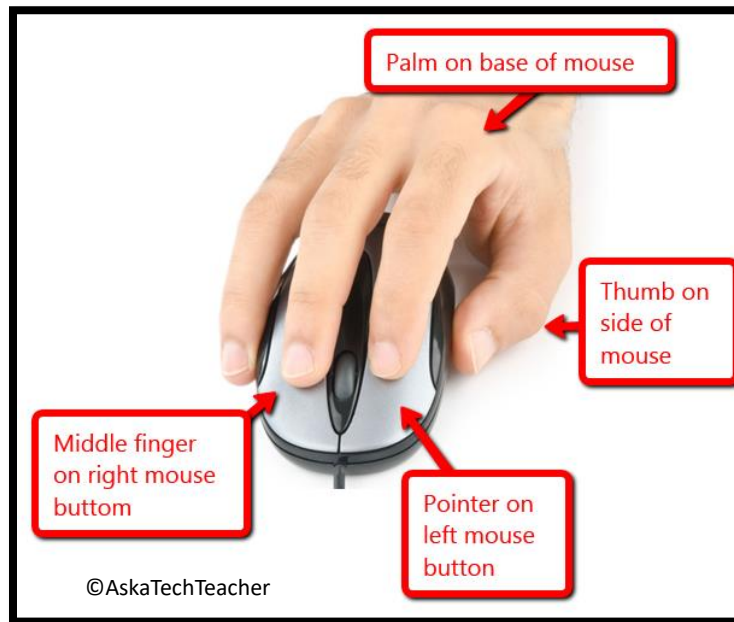
Figure 10—Hardware-related problems and solutions



\_\_\_\_\_ Adopt the mindset that you will **always try to solve your own problems**. This will be discussed in depth in the *Problem Solving* lesson.

\_\_\_\_\_ Check your neighbor’s mouse hold. Does it match *Figure 18* (zoom in if needed)?

Figure 11—How to hold mouse



\_\_\_\_\_ Discuss **digital citizenship**. You'll cover it in depth in a future lesson and circle back on topics throughout the year.

\_\_\_\_\_ This lesson will cover the following topics (adapted to your digital device):

- *annotation tool*
- *class calendar*
- *class Internet start page*
- *class website*
- *digital portfolios*
- *email*
- *Google Apps*
- *journaling*
- *log-ins*
- *screenshot tool*
- *student blogs*
- *student dropbox*
- *student workbooks*
- *vocabulary decoding tools*
- *webtools*

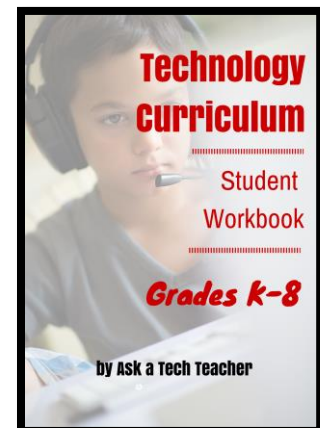
## Student workbooks



\_\_\_\_\_ Your teacher will introduce your **student technology workbook**. It includes:

- *assessments*
- *a place to take notes*
- *full-color samples of projects*
- *checklists for activities*
- *extras to extend learning*
- *the ability to circle back on concepts already covered or spiral forward if you want to preview upcoming material*

\_\_\_\_\_ Experiment with as many of these as you have time for.



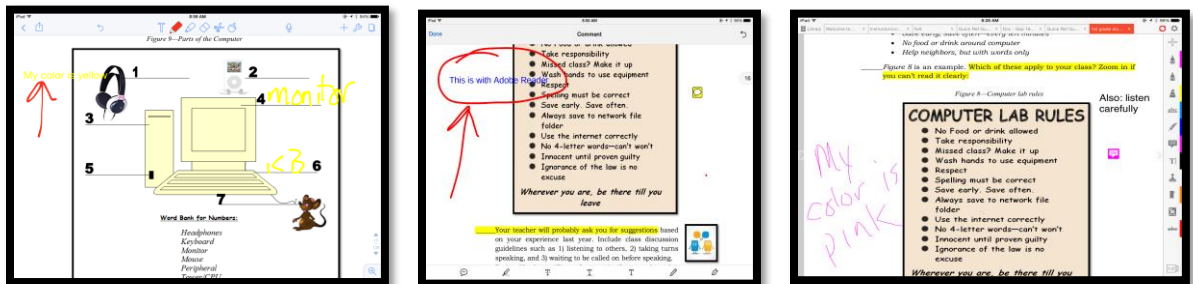
## Annotation Tool

- \_\_\_\_\_ Your teacher will show you how to write in your workbook with an **annotation tool** such as Adobe Acrobat (*Figure 19c*), or another tool available in your school.
- \_\_\_\_\_ Your teacher will review options available in the annotation tool such as:

- *highlighting*
- *text and freeform notes*
- *screenshots*
- *sharing/collaborating*

- \_\_\_\_\_ If you're sharing a PDF (for example, it's loaded on a computer that multiple classes use), select a personal color that's different from other students.

Figure 12a—Notability; 19b—Acrobat; 19c—iAnnotate



## Class Calendar

- \_\_\_\_\_ Your teacher will post a **digital class calendar** that tracks due dates, class events, and other important information. It might be created in Google Calendar (*Figure 20a*), Office 365, a Padlet template (*Figure 20b*), MS Publisher (*Figure 20c*), or another option. If possible, s/he'll embed it into the class website. It might also be possible to embed it into your student blog so that it auto-updates. Check with your teacher on that possibility.
- \_\_\_\_\_ Volunteer to demonstrate to classmates how to edit the class calendar by adding the week's homework.
- \_\_\_\_\_ Volunteer to add events to the calendar for one month. Start with next week's Hardware quiz. Or, your teacher may allow all students to do this. If so: Contribute responsibly to the class calendar.

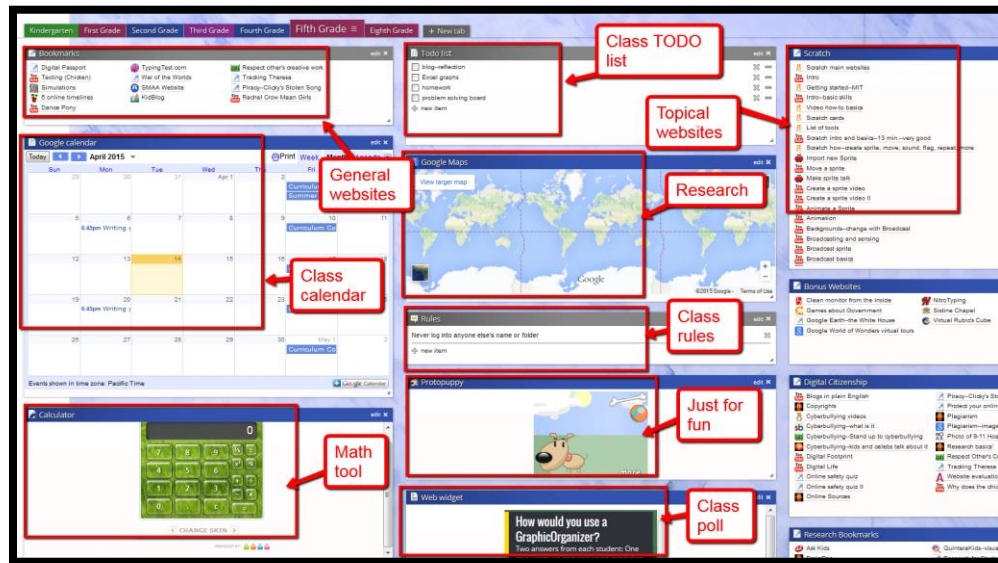
Figure 13a—Class calendar in Google; 20b—Padlet; 20c—DTP



## Class Internet Start Page

A **class Internet start page** is a website that comes up when you open the Internet. It organizes critical content in a single location and curates links you will use during class.

Figure 14—Class Internet start page



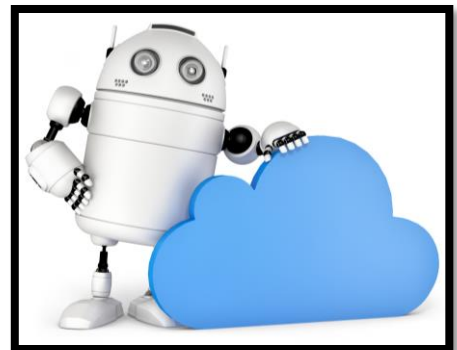
Remember: Any time you visit the Internet, do so safely and legally. If you didn't discuss digital citizenship in K-4, your teacher will take time right now to review it.

## Class Webtools

**Class webtools** are programs accessed directly from the Internet. They aren't on the digital device you use at school. In fact, if you don't have an Internet connection, you won't be able to use them. The biggest reason educators and students like webtools is that they can be used anywhere. That means if you start a project at school, you can finish it at home—no problem.

There are a wide variety of webtools that you will use this year to complete projects which may include:

- *online math program (i.e., Khan Academy)*
- *digital keyboarding program (i.e., Type to Learn)*
- *avatar creator for digital citizenship*
- *badge to assess progress*
- *digital storytelling*
- *reading library (like RAZKids)*



Log into all of your class webtools right now to make sure there are no problems.

## Class website

\_\_\_\_\_ Your teacher may have a **class website** to track class activities, keep parents in the loop, and embed sharable projects, i.e., Tagxedos and Animotos. Your teacher will let you know where that is and how to access it.

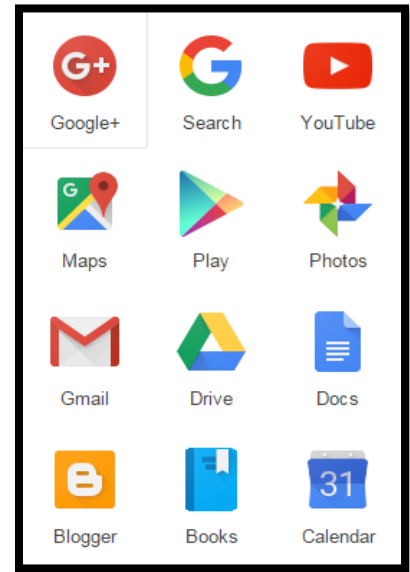
## Google Apps

\_\_\_\_\_ **Google Apps for Education** is a suite of basic tools that you will use for class projects. It may include:

- *Gmail (for email)*
- *Google Drive and associated apps*
- *Cloud storage*
- *Google Calendar*
- *YouTube*

\_\_\_\_\_ Everything created in Google Apps is backed up instantly in the Cloud. Importantly, it enables collaboration and sharing.

\_\_\_\_\_ Your teacher will show you how to use your account including how to log in, access the Drive, and share documents with others.



## Log-ins

\_\_\_\_\_ Volunteer to teach classmates how to **log into digital devices and tools** using user name and password (*Figure 22—zoom in if needed*)—as a review of last year’s lessons:

*Figure 15—How to log in*



\_\_\_\_\_ Digital tools that might require a log-in include:



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

\_\_\_\_\_ Track these log-ins using a method that works for you, such as:

- *Keep a physical copy by your seat or in your personal binder.*
- *Keep a digital copy in your digital portfolio.*
- *Take a snapshot of it to keep on your digital device for quick reference.*

\_\_\_\_\_ Or, you might do this digitally using *Figure 23*:

*Figure 16—Track UN and PW*

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



\_\_\_\_\_ Test the log-in for as many of your digital accounts as possible. As you do so, write the UN and PW into *Figure 23* with your annotation tool. Ask for help if you get stuck.

## Journaling

\_\_\_\_\_ If you will be **journaling**, your teacher will show you which digital tool you'll use. It might be a journaling app, a word processing program, or your blog.

\_\_\_\_\_ Take time to log into your journaling tool and test it out.

## Screenshot Tool

\_\_\_\_\_ Often, you will annotate an assessment, rubric, or checklist in this workbook. You can save your work with a screenshot tool that takes a snapshot of the screen and allows you to save it to your digital portfolio. Depending upon your digital device, you might use one of these:

- **Windows:** *the Snipping Tool*
- **Chromebook:** *hold down the control key and press the window switcher key*
- **Mac:** *Command Shift 3 to do a full screenshot and Command Shift 4 to take a partial*
- **Surface tablet:** *hold down volume and Windows button at the same time*
- **iPad:** *hold Home button and power button at same time*
- **Online:** *a screenshot tool*

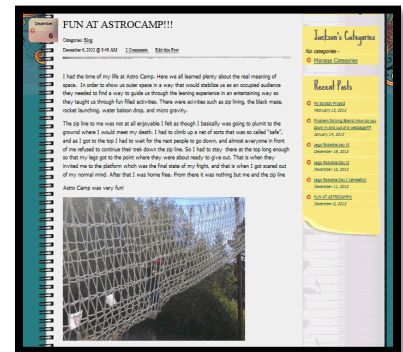
## Student blogs

\_\_\_\_\_ Student blogs (*Figure 24*) are personal online sites where you discuss classwork, collaborate with peers, upload projects, and more. Your teacher will show you where these are located and how to access them. You will also be encouraged to personalize them with favorite colors, fonts, and widgets.

\_\_\_\_\_ In general, each blog post requires:

- *a title that pulls the reader in*
- *a review of what readers can expect*
- *tone/voice that is consistent throughout all articles—conversational, knowledgeable, friendly—and that fits this type of writing and the intended audience*
- *working links that support the topics*
- *at least one media to support each article (picture, video, or sound)*
- *an understanding of the target audience*
- *an understanding of the writing purpose*
- *citations—authors name, permission, linkbacks, and copyright*
- *occasional teamwork*

Figure 17—Student blog



\_\_\_\_\_ Several times during the grading period, your teacher will assess your blogs based on the above criteria or criteria set out in a separate document.

\_\_\_\_\_ See lesson on 'Student Blogs' for more detail.

## Student digital portfolios

\_\_\_\_\_ **Digital Portfolios** are locations where you store your work. This means when you're looking for a document, you need only go to this one location to find it.

\_\_\_\_\_ Some digital portfolios are Internet-based, others on a dedicated server that's accessed through the school. Your teacher will tell you which of these two options applies to your portfolio.

\_\_\_\_\_ Purposes of the digital portfolio include:

- *interact, collaborate, and publish with peers*
- *contribute to project teams*
- *edit or review work in multiple locations*
- *submit class assignments*

\_\_\_\_\_ Practice uploading something to your digital portfolio.

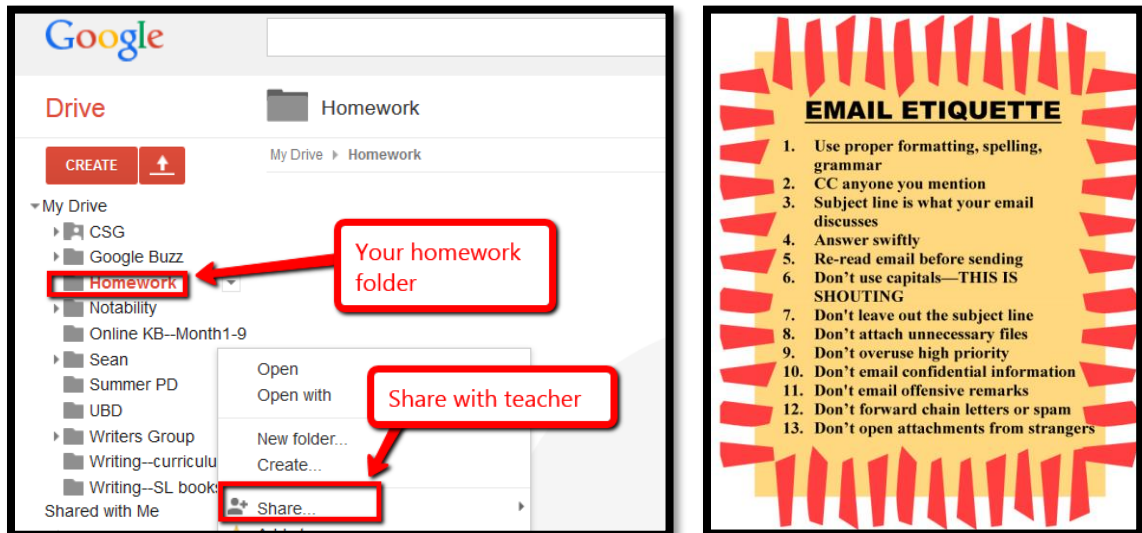
## Student dropbox

\_\_\_\_\_ A **dropbox is a digital location** where you can submit homework or class assignments. If you have this option, your teacher will review it with you.

\_\_\_\_\_ If you have Google Apps, you can create one as follows (*Figure 25a*—zoom in if needed):

- *Create a folder called ‘Homework’ and share it with your teacher.*
- *Submit work by copying it to that folder so your teacher can view and comment.*

*Figure 18a—Homework dropbox; 25b—email etiquette*



## Student email

\_\_\_\_\_ Your teacher will review **how to email** (if you will be using email):

- If you are a Google school, Gmail comes with this. Your teacher will explain where to find it and how to use it.
- If you're expected to use your home-based email account or parents, your teacher will ask you to send her/him an email to verify your address.

\_\_\_\_\_ If you used email last year, volunteer to review the basics—*to, cc, subject line, body of email, attachment, urgent*.

\_\_\_\_\_ Discuss rules on **email poster** (zoom in on *Figure 25b* if necessary). Do you have other suggestions?

- \_\_\_\_\_ Discuss how email can be used to back up important documents (by emailing a copy to yourself, or creating a draft email with doc attached and stored in 'Draft' file).
- \_\_\_\_\_ It is your responsibility to 1) spell address correctly, 2) notice when email 'bounces', and 3) resend if necessary. What should you do to verify that your email was delivered?

## Vocabulary Decoding Tools

\_\_\_\_\_ When you find a word you don't understand, use your **digital vocabulary decoding tool** to determine its meaning. Your teacher will show you how to access the native app or webtool on your digital device that is used for this purpose. Depending upon the device, these will be on the homepage, the browser toolbar, a shortcut, or a right click.

\_\_\_\_\_ Options for dictionary tools include:

- *right click on a word in MS Word and select 'Look up'*
- *right click in Google Apps (i.e., Google Docs) and select 'research'*
- *dictionary created by students in prior years—they find a word they don't understand, add it with a definition to a webpage you've set up for that purpose (maybe on the class blog or website)*

\_\_\_\_\_ Test this tool. Notice how quickly it can look up words. Practice with several of the words in this lesson's *Vocabulary* list.

\_\_\_\_\_ Attempt to access all school digital tools before leaving.

**Class exit ticket:**     **Send an email to your teacher listing the top three digital tools you are excited to use.**

### Extension:

- *Volunteer to add hardware quiz to class calendar.*
- *Volunteer to add keyboarding quiz to class calendar.*

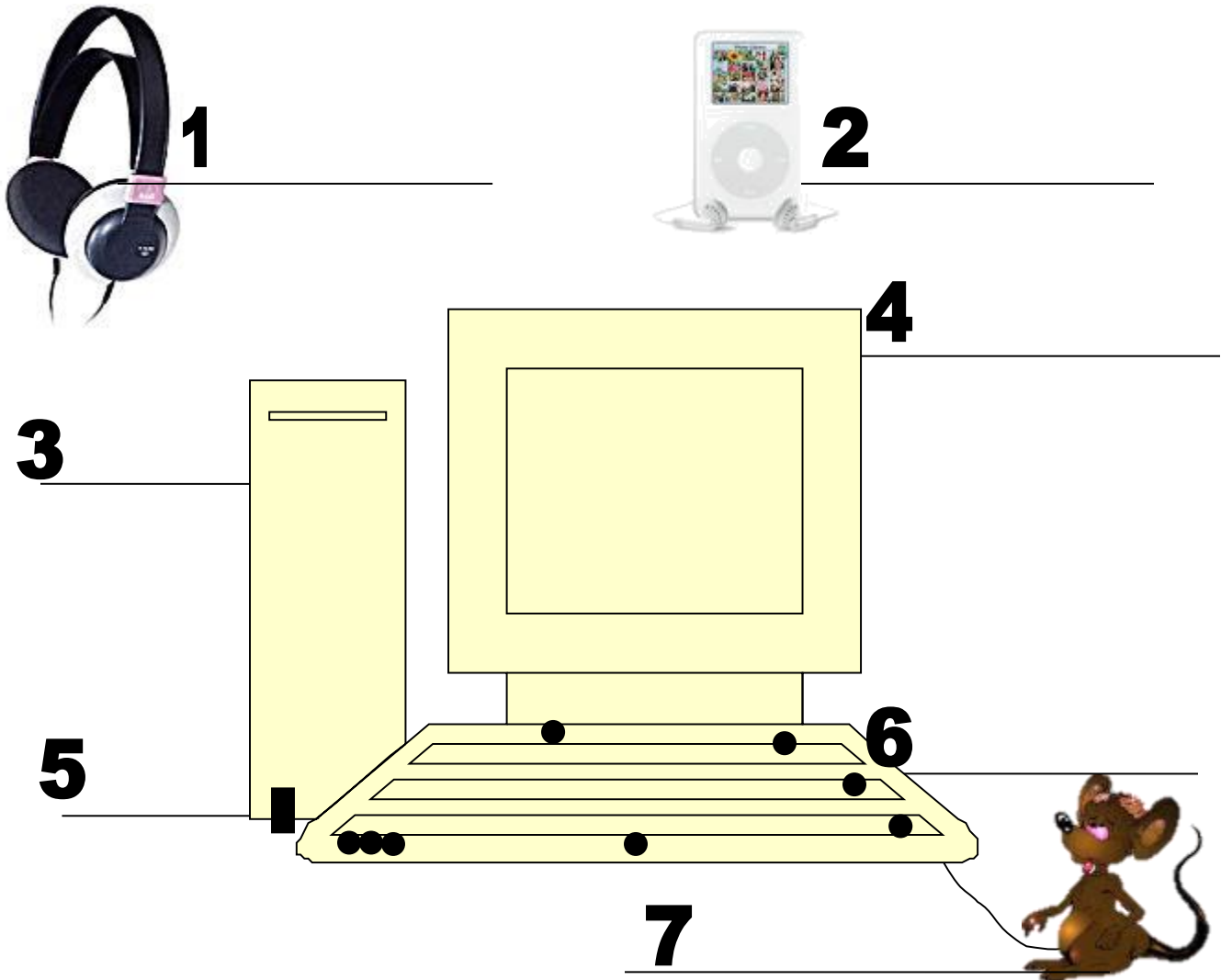
"A printer consists of three main parts: the case, the jammed paper tray and the blinking red light"

Assessment 1—Parts of the computer



# HARDWARE—PARTS OF THE COMPUTER

Name each part of computer hardware system 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*

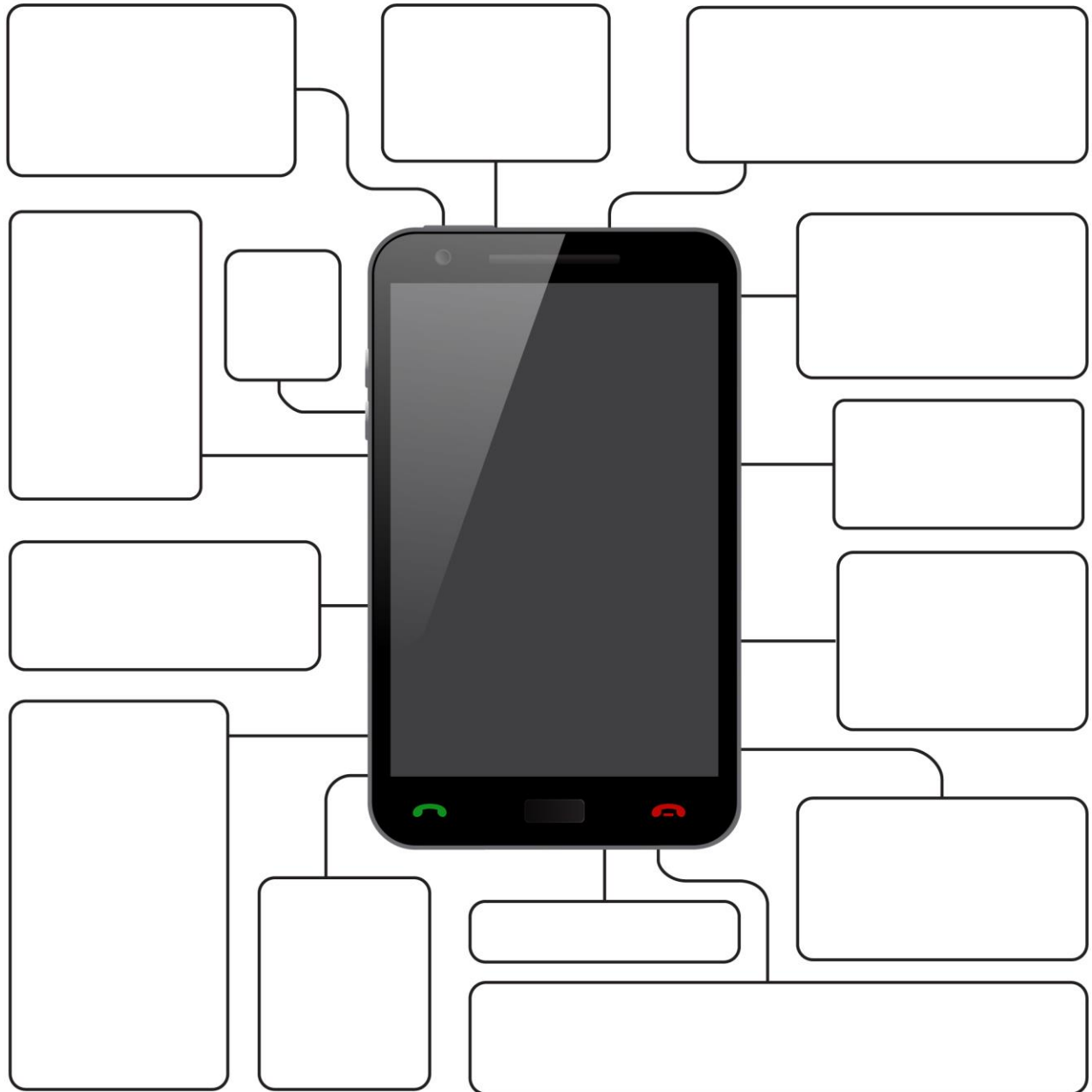
*F4*



Assessment 2—Parts of the smartphone

**HARDWARE—PARTS OF THE SMARTPHONE**

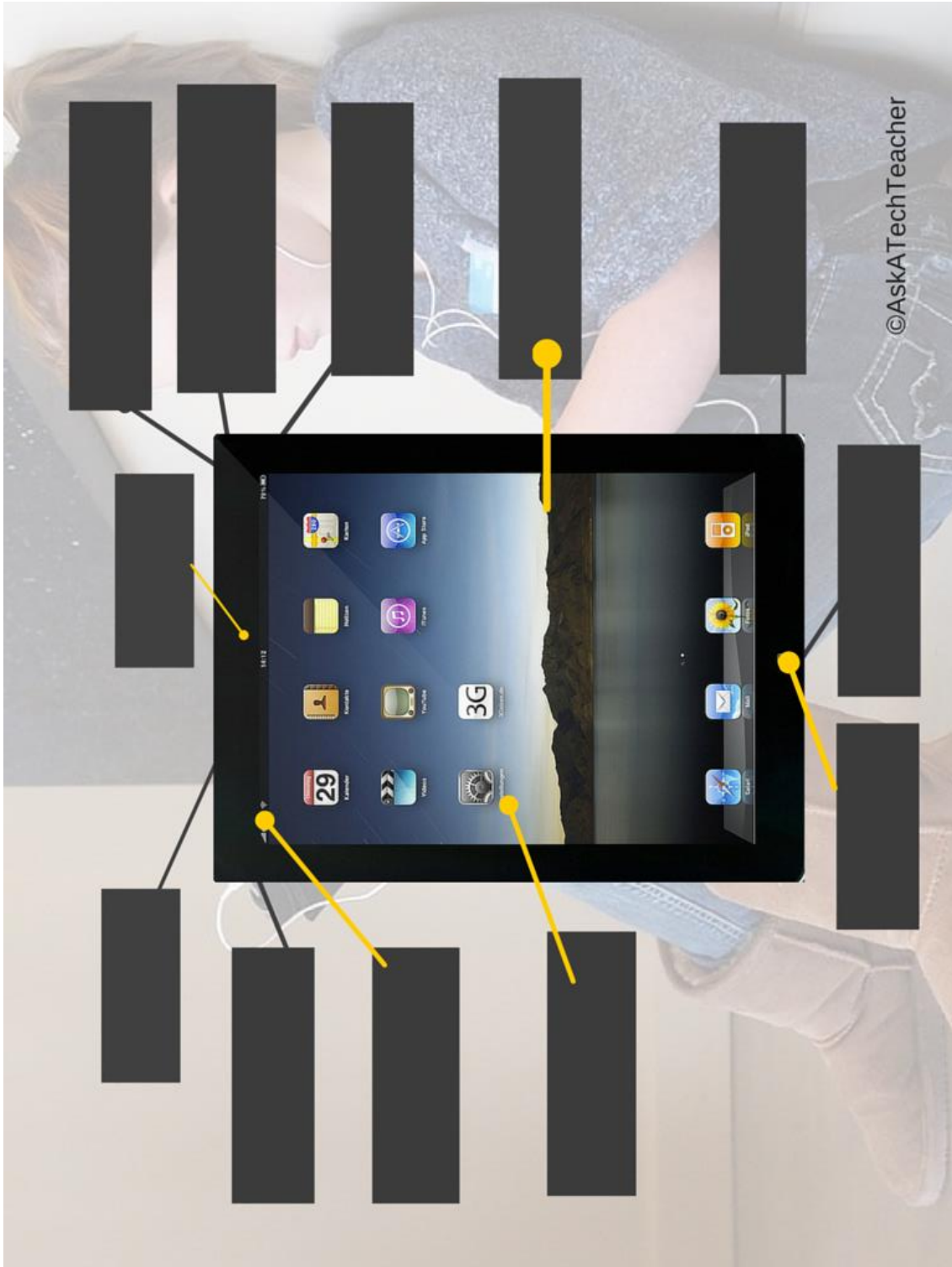
*Adapt this to your needs*



Assessment 3—Parts of an iPad



# Parts of an iPad



Assessment 4—Chromebook parts



©AskATechTeacher

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## Lesson #5 Organizing Ideas

Vocabulary	Problem solving	Skills
<ul style="list-style-type: none"> <li>• Bullets</li> <li>• Citations</li> <li>• Heading</li> <li>• Icons</li> <li>• Indent/exdent</li> <li>• Mulligan</li> <li>• Outline</li> <li>• Shift+tab</li> <li>• Title</li> </ul>	<ul style="list-style-type: none"> <li>• What is today's date (check clock in lower right corner or use shortcut)</li> <li>• I can't find my word processing program (if it's software, use Search field)</li> <li>• I got out of outline (backspace to the last bullet and push enter)</li> <li>• What's the difference between a heading and a title?</li> <li>• Can't get outline to work (try shortcuts)</li> </ul>	<p style="text-align: center;"><b><u>New</u></b></p> <p style="text-align: center;">Brainstorming Mindmapping</p> <p style="text-align: center;"><b><u>Scaffolded</u></b></p> <p style="text-align: center;">Outlining Keyboarding Speaking/listening Digital citizenship</p>

### How do I organize info efficiently?

- Completed project
- Followed directions
- Signed up for Board
- Completed warm-up, exit ticket
- Successfully annotated workbook
- Decisions followed class rules
- Joined class conversations
- Left station as it was (neat and orderly)



## Step-by-step

**Class warm-up:** *Keyboard homerow in [Popcorn Typer](#) or another typing tool that concentrates on one row at a time*

- \_\_\_\_\_ Ask if your teacher will play music while you keyboard. This will establish a typing rhythm that makes it easier to pace your fingers.
- \_\_\_\_\_ Review Hardware Quiz. Remember Mulligan Rule.
- \_\_\_\_\_ Today you will take the Important Keys quiz. Using the template in the keyboarding lesson, fill it out with your annotation tool working with a partner. You get only 5-10 minutes because you should know these keys.
- \_\_\_\_\_ Grading is the same as the speed/accuracy quiz.
- \_\_\_\_\_ Done? Ask questions about homework if any. The full year of homework is in the back of this workbook.
- \_\_\_\_\_ Any evidence of learning to post on Evidence Board?
- \_\_\_\_\_ Discuss the importance of organizing thinking. How have you done this in the past?
- \_\_\_\_\_ Start Problem-solving Board today. You stand in front of class, share your problem and at least one solution, and take classmate questions. Follow class speaking and listening expectations. As you present, your teacher will use Figure 40 as an assessment—zoom in if needed:

Figure 19—Keyboard keys quiz

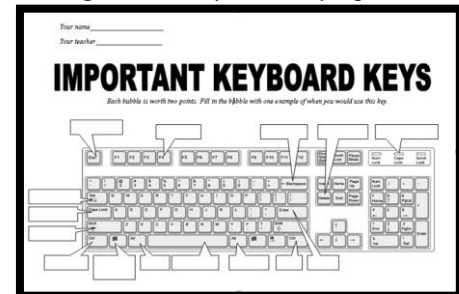


Figure 20—Problem-solving board rubric

<b>PROBLEM SOLVING BOARD</b>	
<b>Grading Rubric</b>	
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	_____

\_\_\_\_\_ This lesson discusses two ways:

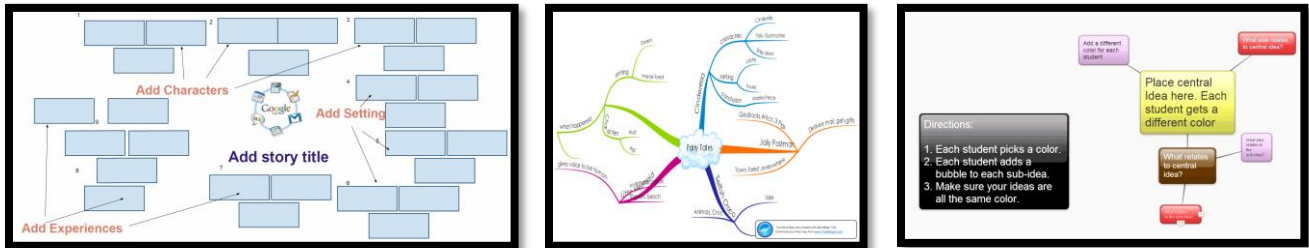
- *brainstorming and mindmapping*
- *outlining*

## Brainstorming and mindmapping

\_\_\_\_\_ Your teacher will review ‘brainstorming’ and ‘mindmapping’—collaborative visual approaches to thinking through, prewriting, and presenting ideas.

\_\_\_\_\_ Here are examples of mindmaps you may have created K-4 in the SL curriculum (Fig. 41a-c):

Figure 21a—Kindergarten; 41b-c—1st grade



\_\_\_\_\_ This year, you create a mindmap or brainstorm a topic in small groups. Here are basic rules:

- *There are no wrong answers.*
- *Get as many ideas as possible.*
- *Record all ideas.*
- *Do not evaluate ideas presented.*
- *Build new ideas on those of others.*
- *Stress quantity over quality.*

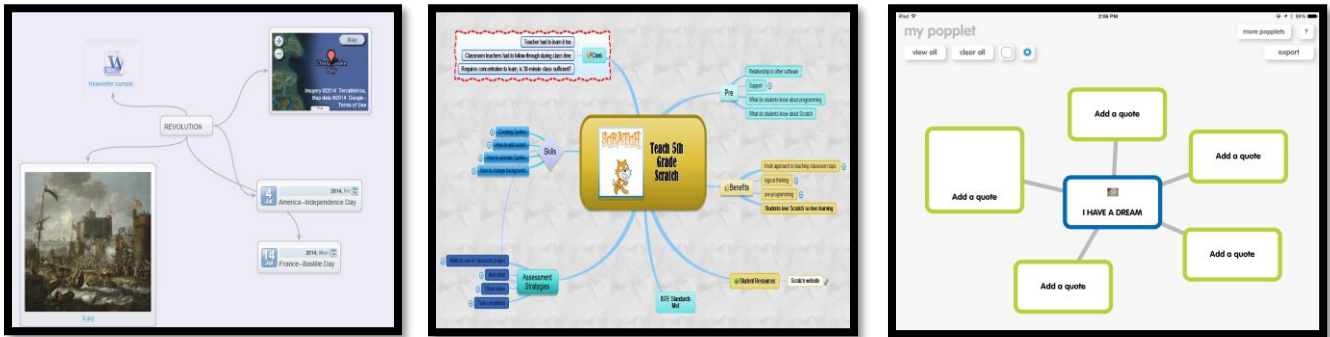
\_\_\_\_\_ General steps for brainstorming:

- *Sit in a comfortable group.*
- *Add the central idea to the middle of the page. Include image if possible.*

- *Add ideas that support the theme. Don't worry if contributions don't seem 'big'—they'll find a home later as a sub-idea, connected to another.*
- *All ideas down? Now drag ideas around to connect topics that relate.*
- *If possible, edit connectors to be fatter for main ideas and thinner for sub ideas. This enables the mind to subconsciously visually categorize ideas.*
- *Add emphasis where needed with color, images, fonts, and/or size (if available).*

\_\_\_\_\_ There are lots of online mindmapping tools. Your teacher will provide a link for one you'll use.  
 \_\_\_\_\_ Your teacher will demonstrate the selected program on the class screen to follow on your digital device. When s/he finishes, you'll work in a small group to complete your own mindmap.  
 \_\_\_\_\_ The topic you map may be a book being read, a historic event, or a mathematical concept.

Figure 22a—SpiderScribe; 42b—MindMaple; 42c—Popplet



## Outlining

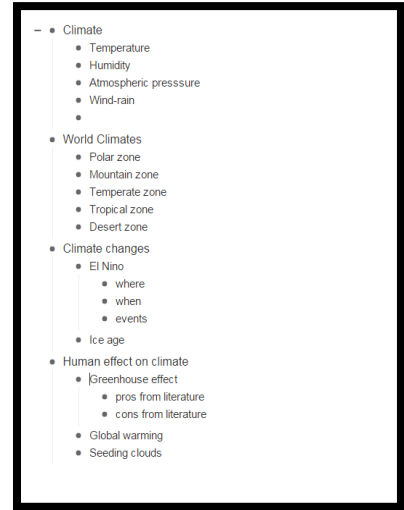
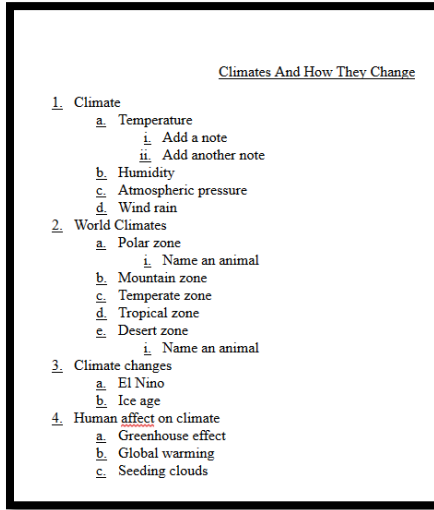
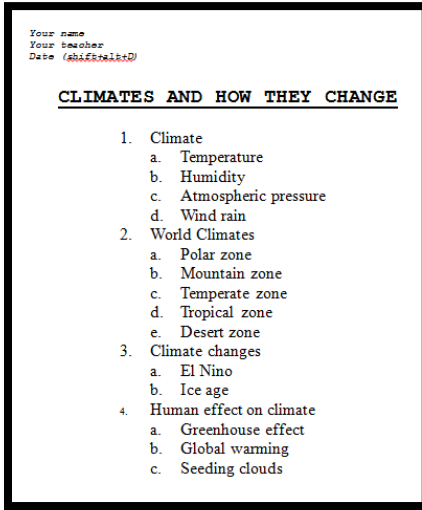
\_\_\_\_\_ Discuss outlining. Here's what you want to understand:

- *It encourages a better understanding of a topic.*
- *It promotes reflection on a topic.*
- *It assists analysis of a topic.*

\_\_\_\_\_ If you don't use MS Word or Google Docs on your digital device, your teacher will provide you with an alternative outline tool. Here are examples (zoom in if needed to see better):

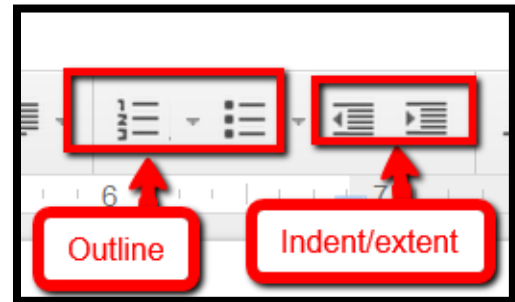


Figure 23a—Outline in Word; 43b—Google Docs; 43c—Workflowy



- \_\_\_\_\_ Open your word processing program while your teacher does that on the screen. Put heading at top (name, teacher, and date). What's the purpose of the heading? Add the date with shortkey.
- \_\_\_\_\_ Any time you go online, remember to do so safely.
- \_\_\_\_\_ Center title beneath heading. What's the purpose of a 'title'?
- \_\_\_\_\_ Adapt for the toolbar in the word processing program you use. In MS Word and Google Docs, use: 1) bullet or numbered list, 2) indent—push text to right (subpoint), and 3) exdent—push text to left (more important point). See *Figures 44a-b* (in MS Word and Google Docs):

Figure 24a—How to outline in MS Word; 44b—Google Docs



- \_\_\_\_\_ Or, use tab to indent and Shift+tab to exdent (for Word and Docs)—I like this better.
- \_\_\_\_\_ Outline chapter headings and subheadings. Summarize and/or paraphrase relevant points.
- \_\_\_\_\_ Once completed (*Figure 43a-c*), work with a neighbor to add information by editing the outline. Use data from print/digital sources, class discussion, and personal experience. Note source where relevant.
- \_\_\_\_\_ Remember: Every time you use computers, practice keyboarding skills.
- \_\_\_\_\_ Remember: Save early save often. Why? How often?
- \_\_\_\_\_ Save (or save-as? Which is right for this situation) with your last name in the file name. Close with Alt+F4.
- \_\_\_\_\_ Review how to save (*Figure 45*—zoom in if needed):

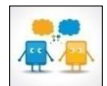
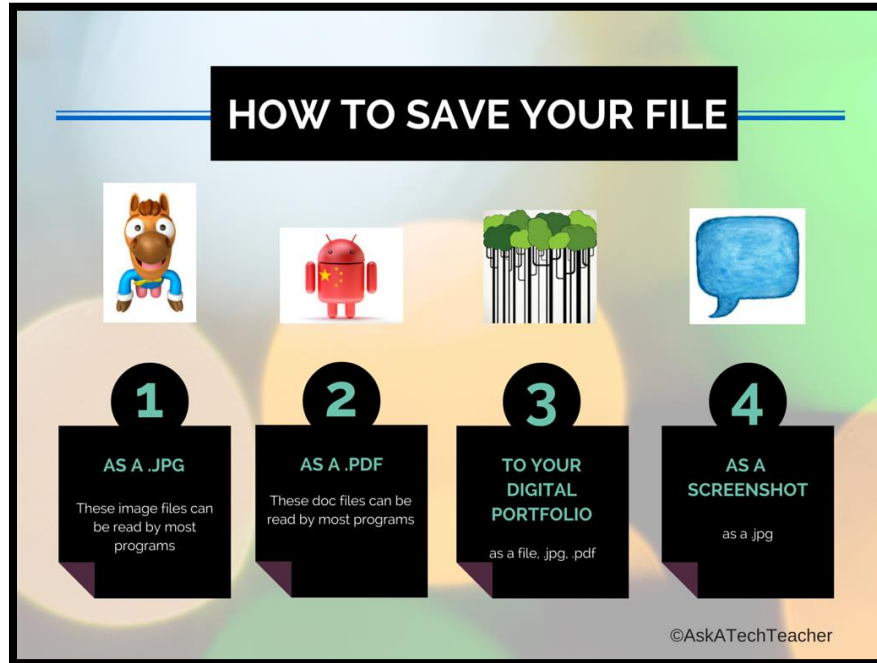


Figure 25—How to save your file

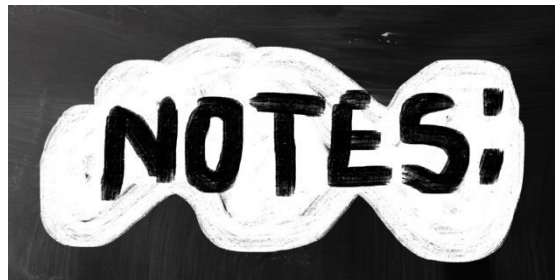


\_\_\_\_\_ Why include your name in the file name when saving? Your teacher will demonstrate a search for a student document. See how their files show up even if not saved to their digital portfolio. Putting the last name in file name makes it harder to lose work.

**Class exit ticket:**      **Share or email outline to your teacher.**

**Extension:**

- *Volunteer to add Board presenters to class calendar.*
- *Volunteer to add the Blank Keyboard quiz to class calendar.*
- *Visit the class Internet start page for websites that tie into classwork.*



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## Lesson #9 Coding: Hour of Code

Vocabulary	Problem solving	Skills
<ul style="list-style-type: none"> <li>Coding</li> <li>Debug</li> <li>Hotkey</li> <li>Hour of code</li> <li>If-then</li> <li>Macro</li> <li>Programming</li> <li>Sequence</li> <li>Shortcut</li> <li>Symbolism</li> </ul>	<ul style="list-style-type: none"> <li><i>I don't know how to use the programming tool (experiment; be a risk-taker)</i></li> <li><i>I don't like coding (why? What exactly don't you like about it?)</i></li> <li><i>My partner does lots of the work (that's OK if you do your part also)</i></li> <li><i>I tried to debug my program, but it didn't work (start at the beginning and work through it one step at a time)</i></li> </ul>	<p style="text-align: center;"><b><u>New</u></b></p> <p style="text-align: center;">Coding/programming Macros Hotkeys Programming shortkeys</p> <p style="text-align: center;"><b><u>Scaffolded</u></b></p> <p style="text-align: center;">Problem solving Coding</p>

### How do I use programs I've never seen?

- Anecdotal
- Completed exit ticket
- Worked well with partner
- Completed one hour of coding
- Successfully annotated workbook
- Decisions followed class rules
- Joined class conversations
- Left station as it was (neat and orderly)



## Step-by-step

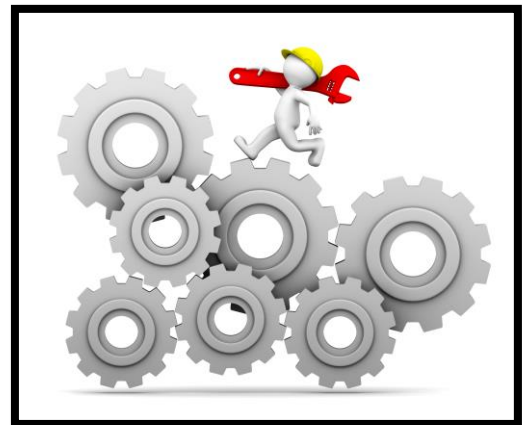
**Class warm-up:**      *None*

\_\_\_\_\_ Because this lesson is devoted to coding, you'll skip presentations and conversations about the Evidence Board. You'll return to those next week.

\_\_\_\_\_ Discuss critical thinking, problem solving. Does this apply to, say, games you like playing?

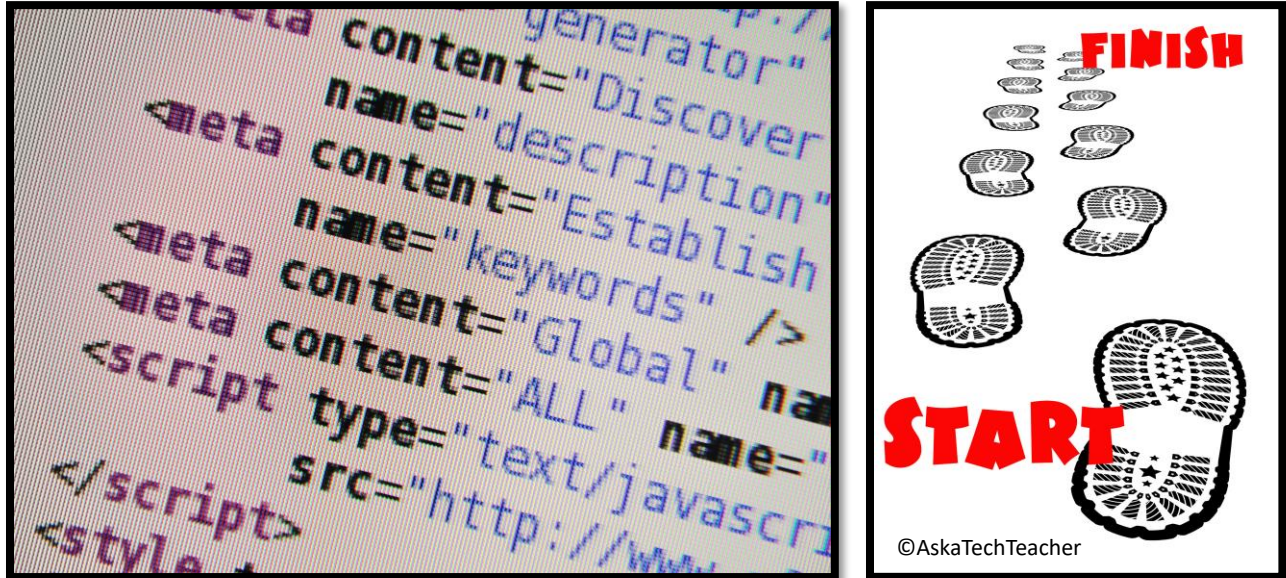
\_\_\_\_\_ The reason your teacher embraces coding is simple: **It teaches critical thinking.** Discuss:

- abstraction and symbolism—like toolbars, icons, numbers*
- creativity—solutions no one else has*
- debugging—write-edit-rewrite; when you make a mistake, look at what happened and fix where it went wrong*
- if-then thinking—actions have consequences*
- logic—go through a problem from A to Z*
- sequencing—know what happens when*



Most people—students and adults—think programming looks like *Figure 62a* when it actually looks like *Figure 62b*: People think programming is so complicated, only Really Smart people can accomplish it. Actually, all it takes is logic and patience.

*Figure 26a-b—What programming feels like vs. what it is*

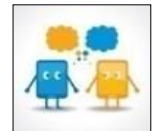


Do you remember coding activities from previous years? *Figures 63a-d* are from kindergarten through fourth grade (if you followed the SL curriculum):

*Figure 27a-d—Coding from previous years*



December will host the **Hour of Code**, a one-hour introduction to coding and programming, how intuitive it actually is, and why you should love it. It's designed to demystify "code" and show that anyone can learn the basics to be a maker, a creator, and an innovator.



This unit may be done individually or in small groups.

There are four activities in this lesson plan. Your teacher may do one or more, depending upon how much time you have:

- program macros
- program shortcuts and hotkeys
- follow an online Hour of Code lesson plan
- visit miscellaneous websites

If you did one of these last year, your teacher will probably pick a different one this year.



## Program Macros

\_\_\_\_\_ By fifth grade, you appreciate technology for how it can speed up class projects. You seek out ways to use it to make your educational journey easier. A great activity that makes use of pre-programming skills is creating macros.

\_\_\_\_\_ Macros are a series of steps that you program into a shortkey: A few keystrokes perform multiple actions.

\_\_\_\_\_ Macros go with the computer. If you change seats, you must recreate the macro.

\_\_\_\_\_ This skill is popular as an easy way to add MLA headings (or whichever standard your school uses) and document closings.

\_\_\_\_\_ Here are basic steps for MS Word (your teacher will adapt them to the digital device you use):

1. Click **View - Macros - Record Macros**.
2. *Specify a name for the macro.*
3. *Choose whether it should be a keyboard shortcut or a button.*
4. *Once you click **OK**, you will notice your mouse looks like a cassette tape, indicating that anything you click will be part of the macro. Click all elements you would like to be part of your macro.*
5. *Stop recording by clicking **View - Stop Recording**.*

\_\_\_\_\_ *Figure 64* is a video (click to visit):



*Figure 28—How to create a macro*



## Program Shortkeys and Hotkeys

\_\_\_\_\_ Shortkeys (keyboard shortcuts) and hotkeys are similar to macros, but for a shorter series of actions—often for opening a program.

\_\_\_\_\_ Creating a shortkey will quickly become a favorite of yours.

\_\_\_\_\_ As with macros, shortkeys go with the computer. If you change seats, you must recreate the shortkey.

\_\_\_\_\_ Adapt the following directions to the device you use. These are for the windows platform:

- *Go to Start; right click on the desired program.*
- *Select 'properties'; click in 'shortcut'.*
- *Push key combination you want to use, say, Ctrl+Alt+S.*



- *Save.*

\_\_\_\_\_ If you are an iPad school, you call them 'hotkeys':

- *Go to Settings > General Settings > Keyboard Settings.*
- *Scroll down and click "add new shortcut."*

\_\_\_\_\_ Another great way to add shortcuts is with Auto Hotkeys. This program must be downloaded to each computer and doesn't yet have education accounts, but may be perfect for you.

## Follow one of the free online Hour of Code programs

\_\_\_\_\_ Websites like Code.org offer Hour of Code lesson plans. This is the easiest way to get involved in programming as they do all the planning for you. This may be exactly what you need.

\_\_\_\_\_ Before visiting the website, review digital citizenship—especially privacy and safety.

## Miscellaneous websites

\_\_\_\_\_ Your teacher will provide links for general coding activities.

\_\_\_\_\_ Before going online, review digital citizenship guidelines.



**Class exit ticket:**      **Send your teacher a screenshot of what you programmed.**

**Extension:**              **Volunteer to post Hour of Code on class calendar.**



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