# K – 5 Instructional Technology Lessons

*Compiled by Henry Anker, ITAF, Local District 3, LAUSD*



*Each grade level's list of skills builds on those mastered in previous grades.*

Here are some general guidelines when managing all levels of students in a Computer Lab, or in a classroom using laptops from a mobile cart:

Provide expectations for academic goals and behavior before walking over to Lab. Ensure students' hands are clean. When arriving at Lab, students are to be lined up quietly. Have students enter in groups, 5 or so at a time, depending on how workstations are arranged (generally in rows). Remind students not to touch computers until instructed to do so. Once all students are seated, with their hands in their laps, reinforce expectations for behavior, and explain why these rules are important to follow. Explain that students are going to be using activities in reading, writing, math, and other subjects during the year. Remind students that you will need to have them stop working at times, either to learn something new, deal with a problem that came up, to share a discovery, or to stop because it is time to go. The most effective way to have students stop and give you their attention is the have students put their hands on their head (model this, and repeat). You might want to remind students that an earthquake (or drill), or fire (or drill) could occur while they are in the Lab using computers, and explain (or demonstrate) how to respond appropriately in that instance. Most schools have a standard method of stopping work when an announcement is made over the PA system, which you may want to remind students of as well.

Note: The lessons described here are modeled using the Apple Macintosh OSX 10.4.x or higher interface, though most lessons can be easily modified for use with PCs running Windows.

For students using laptops, it is especially important for them to learn to use the trackpad using only one hand (the student's dominant hand), using only the thumb and index finger. Learning to do this correctly from day one is akin, though not life threatening, to a teenager learning to drive using the right foot to control both the gas pedal and brake. As adults, we know it is not possible to drive well having one foot on the gas and the other on the brake.

# Fourth Grade

1. **Masters word processing (tools, pallets, shortcuts, spell-check, save, print)**
2. **Writes multiple paragraphs**
3. **Saves file to designated location or media independently; opens saved files from location, navigating through windows or dialog boxes**
4. **Uses Excel Spreadsheets (Data Table, Sum, Average, Graphs)**
5. **Graphs own OCR fluency progress using Excel**
6. **Switches between active applications using System Tray, Dock, etc…**
7. **Uses the Internet competently, safely; evaluates/judges sites for legitimacy, appropriateness**
8. **Creates a webpage or other multimedia project with research acquired through the Internet and other sources (books, interview)**
9. **Creates a research bibliography of books and websites with clickable links in Word or PowerPoint**
10. **Creates acrostic poem with formatted title and initial caps**
11. **Types 15-25 wpm with 85% + accuracy**
12. **Restarts computer and diagnoses basic problems**
13. **Serves as peer tutor to others to mastery of specific skill**

**Grade 4 - Lessons 1 - 3**

**Masters word processing (tools, pallets, shortcuts, spell-check, save, print); writes multiple paragraphs; saves file to designated location or media independently**

*Before beginning with this lesson, be sure to review **all** of the previous lessons back to Kindergarten to ensure students have mastered the skills from the previous grades. If a majority of students show a need for one or more of the earlier lessons, please do those first.*

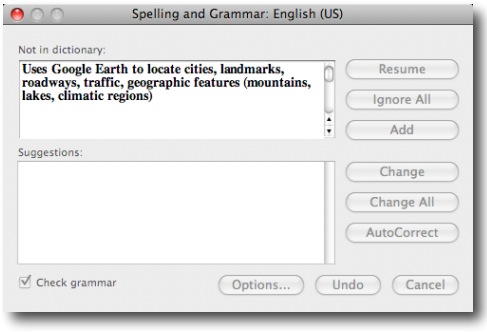
1. With an edited draft of a grade level writing assignment or end-of-unit OCR writing prompt, review the following before students begin to type text (it may be necessary to lead students through these, with their own text, to get document started):
    a. viewing Formatting Palette
    b. changing font size
    c. using proper keyboarding hand position and posture
    d. type standard heading that includes name, teacher name, date
    e. text alignment (centering title, left align text, tab indents)
    f. carriage returns for paragraphs (return key → tab key)

*At this point, allow students 10-15 minutes to type a portion of their work.*

2. Lead students through the process of saving work to designated location (folder on Desktop, on server, onto Flash Drive

*At this point, allow students 10 more minutes to continue typing.*

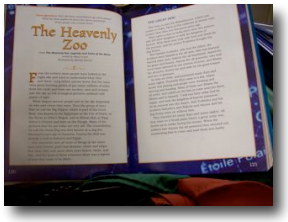
3. Using a student's completed document for demonstration purposes, project the work for all students to see and contribute answers.




4. Pull down the **Tools** menu to

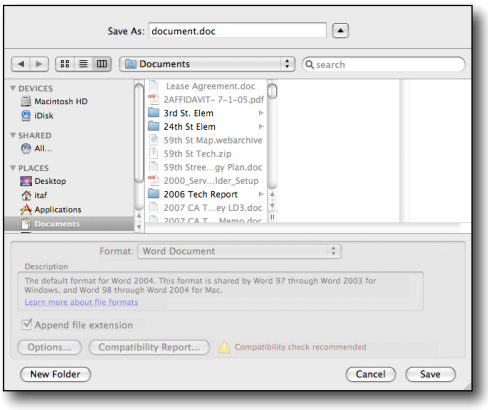
**Spelling and Grammar…** As the dialog box opens and identifies the first **'questionable'** word, discuss why it came up in the window, and what the choices are in addressing each word that comes up. (*Questionable word* means that the word identified is not known to the computer's dictionary, either as a word that was included by the maker of the word processing program, or a new word added by a user of the computer. Proper nouns, like names often come up, especially names like Gonzalez, Kayla, or Chang. These words will often be underlined in red in the document. Let students know that these are not mistakes, but that the dictionary does not have them in it.)

5. Once students show they understand the process of spell-checking, they can do it on their own, or with a partner when their writing is finished.
6. Other refinements that can be made to the document are changing the font, size, color, and style of the title only. A good method of reinforcing this is to hold up an OCR student text and show how titles are always presented in a special way, whereas the body text is written in **Times** or Arial in the color black.

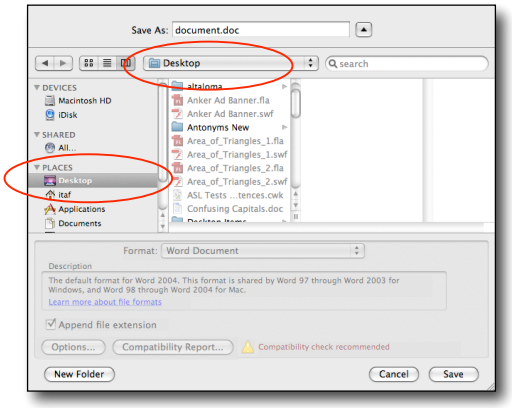



7. When all of the students have written and checked a substantial amount of their work, lead students through the saving process. Most students should have seen and followed these steps a number of times in previous grades, though you will also have students who are new to the school and may not have had the experience. This brings up an axiom that you may already employ, which is, assume nothing, and allow students to prove to you that they can do something: *walk in line politely, raise their hands, multiply to 12 mentally, etc…*

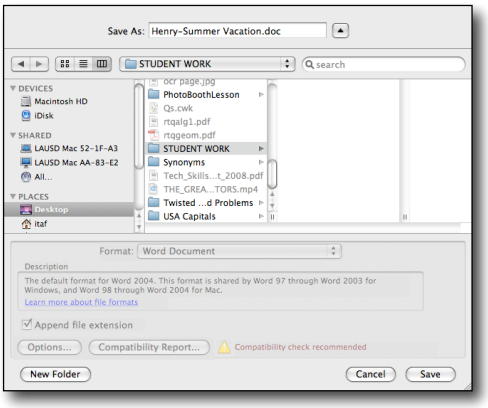
8. Have students pull down the **File** menu to **Save…**




9. Have students click on the word **Desktop** in the left sidebar, and the folder name at the top of the window changes to **Desktop**.




10. Have students scroll down to the STUDENT WORK folder. Change the file name in the **Save as:** field, leaving the suffix **.doc**. Finally, click on the **Save** button (or teach students to press the **return key** to complete the saving process.



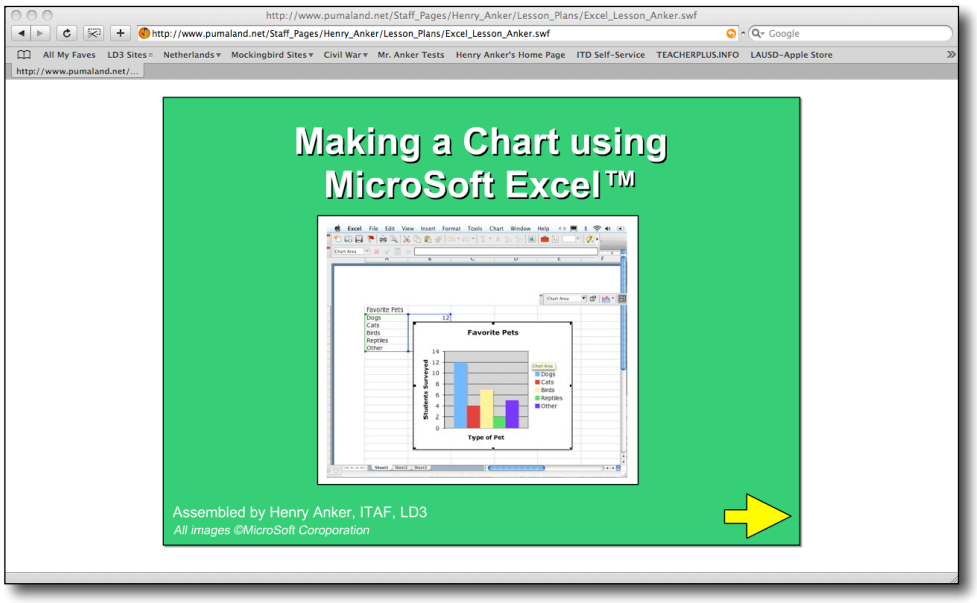

11. Allow students to continue typing until time is up. Have students press **⌘-S**, then **⌘-Q** to quit.

## Grade 4 - Lesson 4 (Part 1)

### Uses Excel Spreadsheets (Data Table, Sum, Average, Graphs)

*As an introduction to Excel™ , use this lesson as a practice tool to make a basic bar chart. The lesson is located at this address:*

http://www.pumaland.net/Staff_Pages/Henry_Anker/Lesson_Plans/Excel_Lesson_Anker.swf

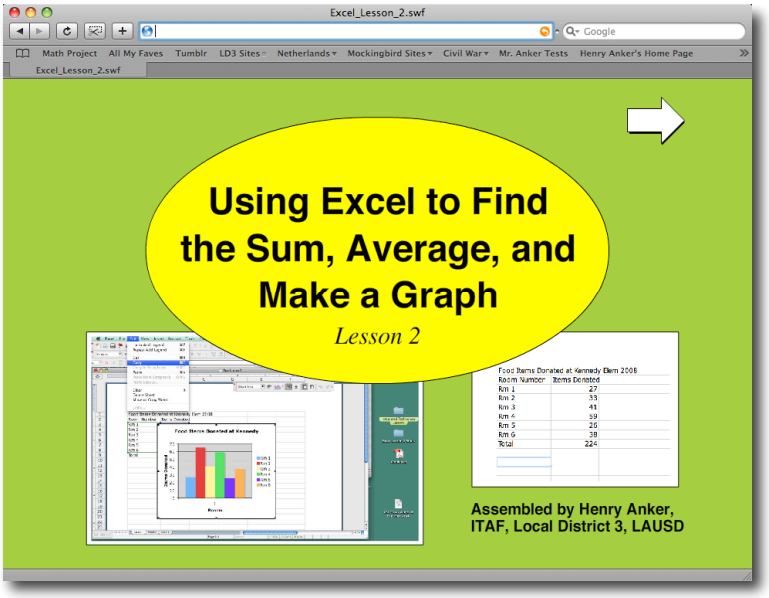


## Grade 4 - Lesson 4 (Part 2)

### Uses Excel Spreadsheets (Data Table, Sum, Average, Graphs)

*As an opportunity to see the basic mathematical power of Excel, have students complete the lesson at this address:*

http://www.pumaland.net/Staff_Pages/Henry_Anker/Lesson_Plans/Excel_Lesson_2.swf

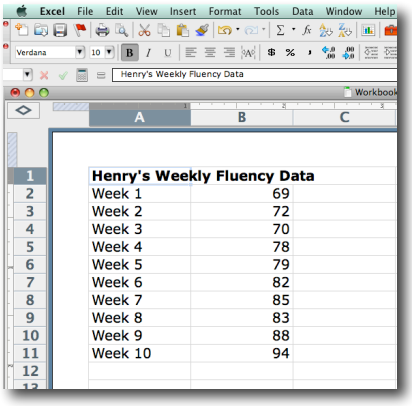


## Grade 4 - Lesson 5

### Graphs own OCR fluency progress using Excel

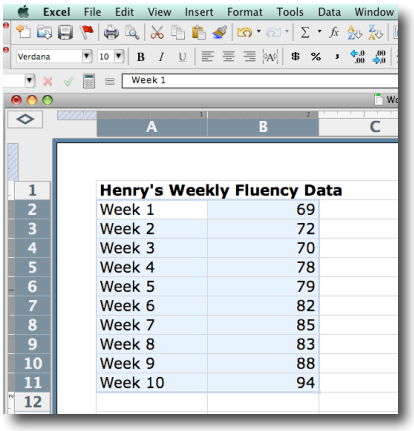
*We know, from working with the Open Court™ Reading Program for many years, that improving reading fluency has many positive implications for students, most especially, improved reading comprehension. Getting students more motivated to read and practice their fluency is the role of the teacher. One way many teachers has raised student reading fluency is through tracking their progress, and then providing positive reinforcement to help students further improve their fluency. When students take responsibility for tracking their own fluency growth through mathematic awareness and technology use, they likely will do even better. That is the goal of this Excel lesson.*

1. Have students open Excel. Post the sample data on the projected computer for students to copy. Tell students to copy the data. The only difference would be that students would type their own fluency numerical data.



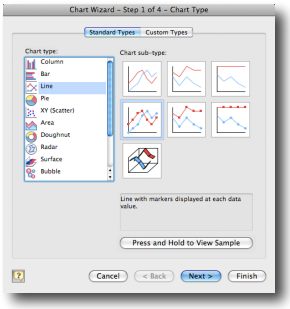
| | A | B |
|---|---|---|
| 1 | Henry's Weekly Fluency Data | |
| 2 | Week 1 | 69 |
| 3 | Week 2 | 72 |
| 4 | Week 3 | 70 |
| 5 | Week 4 | 78 |
| 6 | Week 5 | 79 |
| 7 | Week 6 | 82 |
| 8 | Week 7 | 85 |
| 9 | Week 8 | 83 |
| 10 | Week 9 | 88 |
| 11 | Week 10 | 94 |
| 12 | | |

2. Have students select the data as it is shown in the illustration to the right.

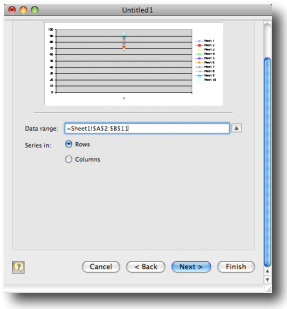


| | A | B |
|---|---|---|
| 1 | Henry's Weekly Fluency Data | |
| 2 | Week 1 | 69 |
| 3 | Week 2 | 72 |
| 4 | Week 3 | 70 |
| 5 | Week 4 | 78 |
| 6 | Week 5 | 79 |
| 7 | Week 6 | 82 |
| 8 | Week 7 | 85 |
| 9 | Week 8 | 83 |
| 10 | Week 9 | 88 |
| 11 | Week 10 | 94 |
| 12 | | |

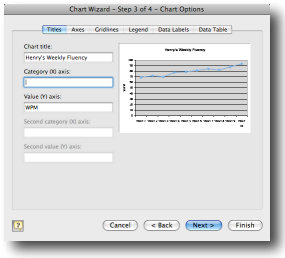
3. Use **Insert→Chart**, or click on the **Make Chart** button in the button bar. Choose **Line Chart**, as shown. Click **Next**.



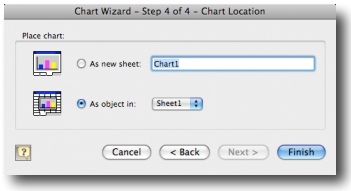

4. Click **Next**.



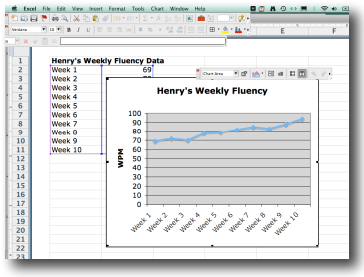

5. Add the text in the fields as shown.




6. Click **Finish**.




7. The chart appears over the spreadsheet.




8. If you would like the students to write about their experience with fluency practice, have them follow this procedure:
    a. click on the chart to select it
    b. pull down the **Edit** menu to **Copy**
    c. open a new Word document
    d. change the alignment to **Center**
    **e.** pull down the **Edit** menu to **Paste**

**Grade 4 - Lesson 6**

**Switches between active applications using System Tray, Dock, etc…**

*As technology has advanced, the ability to multitask has increased dramatically, both with equipment and the people who operate it. Young people seem especially able to listen to music, talk on a cell phone, chat on the Internet and work on homework simultaneously.*

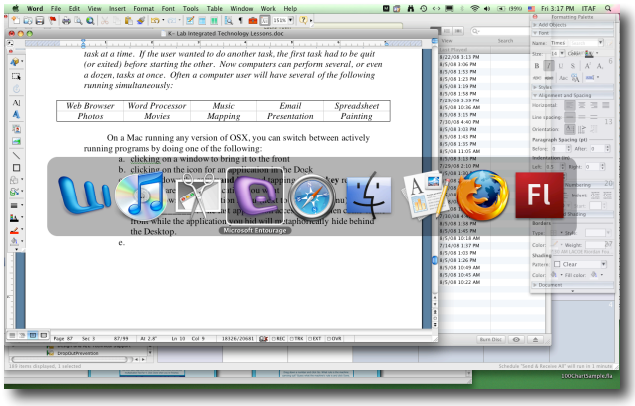
*When personal computers were first developed, they could only perform one task at a time. If the user wanted to do another task, the first task had to be quit (or exited) before starting the other. Now computers can perform several, or even a dozen, tasks at once. Often a computer user will have several of the following running simultaneously:*

| | | | | |
|---|---|---|---|---|
| *Web Browser* | *Word Processor* | *Music* | *Email* | *Spreadsheet* |
| *Photos* | *Movies* | *Mapping* | *Presentation* | *Painting* |

On a Mac running any version of OSX, you can switch between actively running programs by doing one of the following:

a. clicking on a window to bring it to the front
b. clicking on the icon for an application in the Dock

c. holding down the **command key** and tapping the **tab key** repeatedly until you are on the application you want (left thumb on the command key, index finger pressing tab key



d. pulling down the application menu (next to the apple menu) to **"Hide_____"**. The last application accessed will then come to the front while the application you hid will metaphorically hide behind the Desktop.
e. pulling down the **Apple menu** to **Recent Items**

To practice this skill, have students open several programs you want them to work with, for example: Word, PowerPoint, and a Web Browser. Students can perform copy/paste tasks (see 3rd Grade Lesson on this topic), switching between active applications using these methods.

**Grade 4 - Lesson 7**

**Uses the Internet competently, safely; evaluates/judges sites for legitimacy, appropriateness**

*This is a difficult lesson to teach completely within the LAUSDnet, or other school district Firewall, as inappropriate web sites are, for the most part, blocked for students' safety. Students at this age, however, must begin to understand that there are 'strangers' out there on the Internet. Some are pedophiles pretending to be children or teenagers trying to make personal contact with our children after luring them in through on line conversations.*

*These are very dark and troubling issues to discuss with students. Some schools and school districts have prescribed programs on Internet Safety. Other schools rely on classroom teachers to address this issue. Still others provide parent education that helps spread the word on such dangers, though the success of such efforts depends on parent attendance at these presentations.*

*There are also many free on line sites that have information on Internet Safety. Here are a few:*

*http://www.isafe.org/*

*http://www.staysafeonline.org/index.html*

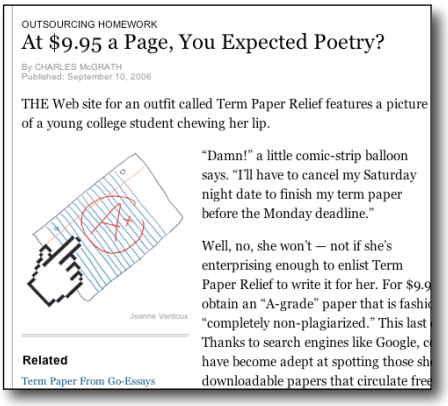
*http://www.cybersafety.ca.gov/*

*http://www.pbs.org/wgbh/pages/frontline/kidsonline/*

*Many of these sites, such as I-Safe, offer video clips that illustrate dangers on the Internet. Please view these videos yourself first to determine if the content and comprehension level of the content is appropriate for your students.*

*In addition to personal safety issues, these sites also discuss other important topics such as copyright infringement (including illegal music and movie downloads) and plagiarism. Students should understand that using copyrighted materials without permission is illegal, and the punishments are real (including*

*large fines and possible prison time). It is important for students to know that performing a copy/paste of biographical or other information from a reference web site without proper citation in a school assignment is plagiarism. The penalties for that include a grade of "F", an incomplete, or further sanctions by the school. Elementary school is the time to learn, or we may end up sending students to college with the mindset that this type of behavior is permissible. See image and this web link:* [http://www.nytimes.com/2006/09/10/weekinreview/10mcgrath.html](http://www.nytimes.com/2006/09/10/weekinreview/10mcgrath.html)



OUTSOURCING HOMEWORK

At $9.95 a Page, You Expected Poetry?

By CHARLES McGRATH
Published: September 10, 2006

THE Web site for an outfit called Term Paper Relief features a picture of a young college student chewing her lip.

"Damn!" a little comic-strip balloon says. "I'll have to cancel my Saturday night date to finish my term paper before the Monday deadline."

Well, no, she won't — not if she's enterprising enough to enlist Term Paper Relief to write it for her. For $9.9 obtain an "A-grade" paper that is fashi "completely non-plagiarized." This last Thanks to search engines like Google, c have become adept at spotting those sh downloadable papers that circulate free

Jeanne Verdoux

Related

Term Paper From Go-Essays

*One more aspect of this brief conversation should include the reliability of the information students find on the web, and of the reputation of the site's publishers. Most web sites that contain offensive content, such as racist, sexist, or hate group content will be blocked within the school district's campuses. There will be exceptions, however, as new sites that have not yet been discovered by filters come on line nearly every day. Many sites camouflage themselves to draw impressionable children in. See images and this web link at this hate site frighteningly entitled, "Martin Luther King Jr. – A True Historical Examination":* [http://martinlutherking.org/](http://martinlutherking.org/)


*Students would not be able to see this site if they typed "Martin Luther King" into a Google search. But if students attempted to perform such a search from a home computer with no filtering employed, they would likely find it and might believe some of the words on the site to be true. We, as teachers, have to*

*help students understand that just because something is on the Internet, doesn't mean that it is true. There are likely thousands of sites like this on line. Knowing this helps us understand why filtering is necessary in school, and also understand why it is important to teach students to be aware consumers of content on the Internet.*

**Grade 4 - Lessons 8 & 9**

**Creates a webpage or other multimedia project with research acquired through the Internet and other sources (books, interview); Creates a research bibliography of books and websites with clickable links in Word or PowerPoint**

*These lessons will take several visits to the computer lab to complete. If portable storage is available, having students begin creating the presentations in the lab, and resuming them in the classroom over a period of a week or two works well for many students.*

*For more help with using PowerPoint, try the lessons posted at this address:* *http://www.pumaland.net/Staff_Pages/Henry_Anker/Lesson_Plans.html*
*You can also search the web for additional tutorials just by typing "Powerpoint Lessons (or tutorials)".*

*Every year that goes by means that less work done by students is done using traditional paper and pencil, and more is done using computer technology. The computer will soon become a tool equal to the pencil in schools, and then surpass it. This is especially true of student projects.*

*Students by this age likely will have had much experience as a consumer of web content, but it is more important that students also become skilled at creating it. If students can do this, they will be more informed consumers as well, as they will understand what went into creating the sites they use.*

*The same goes for being consumers of presentations, slide shows and movies. As in Science class, it's one thing to observe a science experiment and make judgments based on being a witness, but it's quite another to perform the experiment and make observations and adjustments along the way, and then reflect back on the process.*

1. In this example, students will create a PowerPoint presentation that features events and biographies of leaders in the Civil Rights Movement.

Students can work alone, or in small groups. Begin by showing films, or clips of films to the class. Be sure that you have the approval of your site administrator, and to review the media first, to ensure that the content is age appropriate. Using film will help students be better prepared to read on the topic, both with books, and using computers and the Internet. Examples might include the following:

a. "From Montgomery to Memphis"
b. "Mississippi Burning"
c. "The History Channel Presents Voices of Civil Rights"
d. "The March on Washington & The Civil Rights Movement"
e. "The Great Debaters"
f. "The Tuskegee Airmen"
g. Citizen King DVD ~ Martin Luther King

Many of these titles may be available in your school's library, or your public library. Remember that public library systems in the City and County of Los Angeles (and many other urban areas) offer online access to their catalogs as well as the ability to request an item that is not in your local library be brought to your library at no charge.

You likely will not have time to show all these films in their entirety, so cue up to key portions of the film to illustrate a point. This will help students understand that their presentation also will be digest versions that feature highlights and spotlights in a very long and complex time in history.

2. Provide guidance to reading materials, web sites, and CD encyclopedic content students will use to do their research. As students do their research, they will either write by hand, or type their notes into a WP application, mail message, Google Docs, or an AlphaSmart™. Again, be certain students know that copying/pasting information verbatim is not legal. And if they are going to use a direct quote, to be sure and cite it

properly. If students are citing printed materials, here is a guide that you and your students can use to ensure that the citations are listed properly:

3. Once students have completed their research, they can search for images that would go well with specific passages on slides. There should be an obvious connection between the text and the image. If a student's text described the assassination of President Lincoln, a landscape of a Civil War battlefield would not do well to illustrate the text. As part of a mini-lesson, students should be taught how to create a folder on a computer, server, or flash drive. They can even create sub-folders titled "People", "Events", etc… to sort their photos. Some sites even have video clips that students can save for later use.
4. Once the photos are stored and the text is saved, students can begin assembling their presentations. An outline should be provided to students so that can ensure that they are including the right content, in the right order. You may want to create a template and/or storyboard for students to use to plan out their order.
5. A model lesson you'll want to provide is one on design sense. Elements of design you'll want to present to students include the following:
    1. ***the "Z scan"*** – meaning that it is important for students to understand that viewers typically visually scan across a slide from upper left to lower right.
    2. ***appropriate use of color*** – meaning good contrast of color, no yellow or light blue text, no garish combinations like red and pink.
    3. ***use of bounding boxes*** – meaning that text, or images with poor color matching with neighboring items be bound by a bordering line.
    4. ***use of appropriate sized text*** – meaning that text can be read from a distance, that it is spaced properly, and there is not too much text

on one slide (a good rule of thumb is a maximum of 5 sentences or bullet points).

5. ***use of negative space*** - meaning that slides are not cluttered, and that there is good spacing between items and edges of the slide.
6. ***limit use of transition and animation effects*** – remember these two axioms: "less is more" and "just because you can do something, doesn't mean that you should so it". Students often are so excited about using these features that they overuse flipping, flying, spinning effects to the distraction of their audience. It's okay for students to use these features sparingly.

2. Model for students the process of copying and pasting the notes they wrote into the slides. Model for students the process for importing, copying/pasting, or using the drag & drop procedure for adding images to slides.
3. Model for students the creation of bounding boxes, color fills, moving things around on the screen to respect the Z-scan attention of the audience, and preserve negative space. Note: If you want to move an object on the screen precisely, select the object(s), hold down the option key, and tap the arrow key in the direction you want the object to go.
4. After students have worked for a few minutes, or have finished their first slide, remind students to save their file, and walk them through the procedure, if necessary. Remind students to save their work after each slide is completed.
5. Allow students to work independently, or with their partners, as applicable. Use proximity to notice good things that students are doing and provide them positive reinforcement for their creativity and effort. When you notice problems, rather than fixing them for students, find a nurturing way to present them using the projector, and ask students for

suggestion for ways to fix them.

6. Build rigor in the sophistication of the presentations as students show you that they are ready.

**Grade 4 - Lesson 10**

**Creates acrostic poem with formatted title and initial caps**

Use the lesson, ***Creating an Acrostic Poem*** to not only accomplish many of the goals here, but also to allow your students to better acquaint yourself with them. This lesson can also be found at the following web address:

http://www.pumaland.net/Staff_Pages/Henry_Anker/Lesson_Plans.html

(This lesson may require more than one visit to the computer lab to complete.)

**Lesson 11**

**Types 15-25 wpm with 85% + accuracy**

*The most effective way for students to become proficient in their keyboarding at this level is with frequent opportunities to word process their writing. Additionally, students can use a number of web sites or published software your school may have to practice. Some schools also have AlphaSmarts™ (inexpensive keyboards designed for text entry and transfer). These devices, while excellent for word processing, also have lightweight keyboarding practice exercises that help students progress from the Home Row through the use of all keys, symbols, punctuation, numbers, and capital letters, and provide words per minute counts with accuracy.*

*Any type of positive reinforcement/recognition of growth in keyboarding helps motivate students to persevere. Communication with parents about the importance of developing keyboarding skills can really help. This is akin to practicing a musical instrument for a school band for 20 minutes each night. This is something that most parents can easily support, as nearly all homes have computers. For those students who do not have access to a computer at home, the public library is a good option.*

**Lesson 12**

**Restarts computer and diagnoses basic problems**

*Technical problems inevitably arise when using computers. The frequency and severity of these problems generally is related to the age of the computers. There are both common hardware and software issues that can cause problems. The following table illustrates problems that students can be taught to repair:*

| **Hardware / Software Problem** | **Possible Reason / Solution** |
|---|---|
| Computer won't start up | Not plugged in at computer or outlet, plug in, reset surge strip |
| Computer Freezes (stops working) | Software conflict, restart computer, or turn computer off and then back on |
| Keyboard and/or mouse doesn't respond | Check cables for one or both items, try again, restart computer |
| Computer is on, but monitor does not display anything | Turn on monitor, check monitor connection to computer, check monitor power cord |
| Monitor is dim | Adjust monitor brightness with labeled keyboard keys (or F15 on new iMacs), or use Apple menu → System Preferences → Displays |
| Volume is low or off | Adjust volume level with labeled volume keys or dial on front of computer |
| Application has no window displayed | Application is open, though windows have been closed, pull down File menu → New Document |
| ALL CAPITAL LETTERS | Press **caps lock** key again to turn off |
| CD / DVD player does not read disk | Disk may be dirty, clean disk by using low lint cloth gently, from inside to outer edge |

*Teaching students to diagnose these problems, and in many cases, repair them, can help a classroom teacher keep computers in use with minimal disruption. Training a core group of students (not just boys, please!) in a classroom, or schoolwide, not only improves computer use, but also builds self-esteem in these students. These students will feel empowered, and should be encouraged to share what they know with other students to further built capacity.*

*Training of these students can be done by each classroom teacher, or by a technology coordinator who can develop a competent A/V crew that continually builds their skills and recruits new students each year. Ideally, however, all students by 4th grade will be able to resolve common computer problems.*

**Lesson 13**

**Serves as peer tutor to others to mastery of specific skill**

*Many curricular programs have rubrics that show a student's understanding of material. Students demonstrate the highest level of understanding when they can teach others what they know. Pairing students together allows students to teach each other content, or the skills they used to produce a project.*

*Presenting a PowerPoint or Keynote presentation allows students to share what they learned about a particular group of Native Americans, the life of a President, the volcanoes situated around the Pacific Ocean, etc…*

*Students who know PowerPoint™ , Word™ , or the use of web browsers well can be called upon to teach their peers those skills. Just like having student tech support for problems that arise in the classroom is helpful, having students who know how to perform a task in an application can alleviate a teacher from having to attend to students as they are working. Students who are in need of help can be taught how to quietly call upon their peers for help when needed.*

*Students who serve as peer tutors need to be taught teaching strategies as well as the tools of a teacher: patience, modeling (not doing), questioning, opportunities for practice and mastery are strategies peer tutors can use to help their peers learn the skills they can perform.*

*You can facilitate opportunities for small groups of students to become experts. You can train half of your class in a set of skills while the other half works independently, and then switch groups, making each A group member responsible for teaching their B group peers, and vise-versa.*

*You can train a group of students during recess, lunch, or other non-instructional time. Then during class or lab time, those students would be responsible for mentoring. You could also send students to work under the direction of the Computer Lab Teacher, who could train your group of students to be mentors, and then those students can serve as assistants in your classroom.*

*One of the most effective ways for students to gain skills is to work during off track time (in a year round school) under the direction of the Computer Lab Teacher. When these students return from their off track time, they should be capable of assisting both with technical and software issues, and might even be able to share elements of lessons they assisted with (ideally, in your grade level) while they were on 'vacation'.*