



## **Integrating the laptop into Curriculum**

*Integration Ideas for Science, Math, Language Arts, & Social Studies*

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### **Introduction**

The laptop brings a unique set of abilities and possibilities to the classroom. Sort of like paper, where does it fit? When is the best time to use paper or the computer, and how best to integrate everything together into the continuum of technology in education?

Experienced technology educators do not necessarily only use laptops—in fact you’d likely see traditional textbooks and papers along side the laptops! Over time, an educator will be able to weave the laptop into the tapestry of tools at their disposal.

Initially, the goal is to become comfortable with the laptop (teachers *and* students) and not allow it to “take away” from valuable contact time. A good strategy is to look at what one is already teaching and think about how the laptop can enhance a particular piece of the lesson or unit. In other words, when first starting to use the laptop you don’t want to quit “traditional technologies” (including paper) cold turkey. In addition, if one does not feel very confident in the various technologies, start small. Don’t try an activity that integrates four programs on the laptop and requires that students manipulate their work on the desktop at the same time!

These integration suggestions and ideas cover a range of topics, software and age levels. In the weeks and months ahead, explore the laptop, software and peripherals. Think how you might use it for your purposes. You don’t have to use everything that is available to you! Most teachers find 2-3 programs that really “grab” them and find particularly useful for their classroom. This is a great place to start! With some time, you’ll likely join the ranks of laptop-using teachers who now can’t imagine teaching without computers!

### **Global Uses: Starting in Your Comfort Zone**

Before diving into very specific uses that take advantage of new and unfamiliar software, it is best to describe two uses that are familiar to most educators and students, easy to integrate and extremely powerful. They are: Word and Web.



Students are already familiar with typing or surfing on laptop and desktop computers. 1:1 laptop initiatives often list these two activities as the top uses. Likewise, when using paper, students are most often writing notes, answers, essays, stories, etc. It makes good sense to use the laptop as a word-processor and Web browser. Let's break down some benefits and considerations:

### **Benefits of Word-processing on the laptop**

- Students already write in every grade level and subject area.
- One can save drafts of work to demonstrate progress.
- If saved on a regular basis, students should not lose their work.
- Even if the battery dies on the laptop, the work should remain in memory until plugged in.
- Teachers can read student writing because everything is typed!
- Constant access to spell-checking and editing tools similar to what we expect on a desktop.
- Easy peer-editing and collaboration made possible via collaboration or sharing of documents.

### **Considerations of Word-processing on the Laptop**

- Typing skills vary individually and at different grade levels.
- Must save work (as opposed to the straight-forwardness of handing in paper).
- Some lessons/activities not suitable for laptop. For example, spelling tests or tests where answers are all identical.

### **Benefits of using the Web browser on the Laptop**

- Inspires anytime-anywhere learning.
- Students more in charge of their learning and often follow questions no one (including the teacher) knew the answers to in class.
- Just about all students utilize the Internet regardless of age or subject area. (Or would utilize if they had access.)
- Can increase searching skills and critical evaluation skills.
- Should conform to the same security standards in place on your school's existing laptop and desktop computers.

### **Considerations of using the Web browser on the Laptop**

- There are times you don't want students on the Internet; develop a policy.
- Could drain the laptop's battery faster.

### **Summary:**

*Word 2007* and *Internet Explorer* come with the Laptop. Most people are familiar with using these programs and have some practice integrating word-processing and the Internet into their lessons. This is a great place to start!



## Math Integration Ideas

- # Explore using different software programs to prove mathematical problems with symbols.
- # Use the calculator in accessories to check students work or provide help.
- # Utilize interactive websites to reinforce mathematical skills, access algebraic equations, logic problems etc...
- # Students use *Excel 2007* to solve algebraic problems
- # Use *Excel 2007* to create and plot graph data.
- # Online challenges' or collaboration
- # Use maps, graphs, statistical data, timelines, charts and diagrams to interpret, draw conclusions and make predictions.”
- # Use graphic tools to create and analyze shapes
- # Use graphing tools as a bridge between the concrete and abstract. Teach algebraic formulas from real-life numbers, for example, show how the average monthly rainfall resembles a parabola
- # Students research the application of a specific math skill in real life (or a mathematician and what they do) and create a multimedia presentation about their topic.
- # Using the camcorder students can create videos that interpret and illustrate math concepts in real-life situations.
- # Students use a *PowerPoint 2007* to explain a math concept and provide a little quiz/review at the end.
- # Challenge students with online mathematics problems

## Social Studies Integration Ideas

- # Use *PowerPoint 2007* to defend a decision in a social studies unit on government
- # Access interactive timelines for research
- # Utilizing the *internet* students can access primary source documents and up-to-date information
- # Use maps, graphs, statistical data, timelines, charts and diagrams to interpret, draw conclusions and make predictions



- ✎ Access and download historical books and documents
- ✎ Using *Word 2007* have students write fictional autobiographies from the different perspectives of an historical event
- ✎ Using *Access 2007* students can compile dates of when the states entered the Union.
- ✎ Using *PowerPoint 2007* students can create trivia questions based on information they learn in a unit of study
- ✎ Use the camcorder to create a documentary on a historical period or event they are studying
- ✎ Using *Publisher 2007* students can create posters supporting or opposing an event in history. Students can create a newspaper from the time period they are studying
- ✎ Using *PowerPoint 2007* students can create presentations on points of view of historical period by different people, or of a different subject area from the historical period
- ✎ Using *PowerPoint 2007* students can create a multimedia and/or video presentation on current events and issues.
- ✎ Incorporate online news sources into discussions of current events.

## Science Integration Ideas

- ✎ Access interactive websites for research
- ✎ Access websites for virtual dissections and inquiry sites (cells alive, Interactive Physics, solar system, etc...)
- ✎ The internet provides access to up-to-date information
- ✎ Use the camcorder to video experiments for future reference
- ✎ Use the video camera to web conference with experts in the field of science
- ✎ Access real-time weather information
- ✎ Students use *Excel 2007* to create a line graph of scientific data and then import the graph into a word processing program to write a report about that data.
- ✎ Participate in virtual science fairs or competitions
- ✎ Using *PowerPoint 2007* students can create a multimedia portfolio of their research, including video clips of the experiment, photographs of insect collections, inventions, or other science projects.



## English Language Arts Integration Ideas

- ↗ Access interactive websites for research
- ↗ Access websites for inline writing labs
- ↗ The internet provides access to up-to-date information
- ↗ Use the video camera to web conference with authors & publishers
- ↗ Use software programs for students to keep notes organized
- ↗ Utilize interactive websites to access graphic organizer
- ↗ Utilizing the interactive whiteboard and *Word 2007* brainstorm a story or paper as a whole class. Model how to gather facts and information. Write the sentences and paragraphs together, and then share the story or paper for students to look at when writing their own.
- ↗ Utilizing the interactive whiteboard and *Word 2007* in the front of the classroom to model the critiquing and editing process on student or teacher writing.
- ↗ Using *Publisher 2007* students can create a literary publication
- ↗ Using *PowerPoint 2007* students can create a video presenting persuasive information
- ↗ Provide a new “word of the day” in several different languages to study its origin
- ↗ Utilizing the camcorder students can choose certain scenes and videotape dramatized interpretations of stories or works of literatures they are studying
- ↗ Utilizing the camcorder students can create visual poetry (MTV-style) or dramatizations of their own stories and songs.