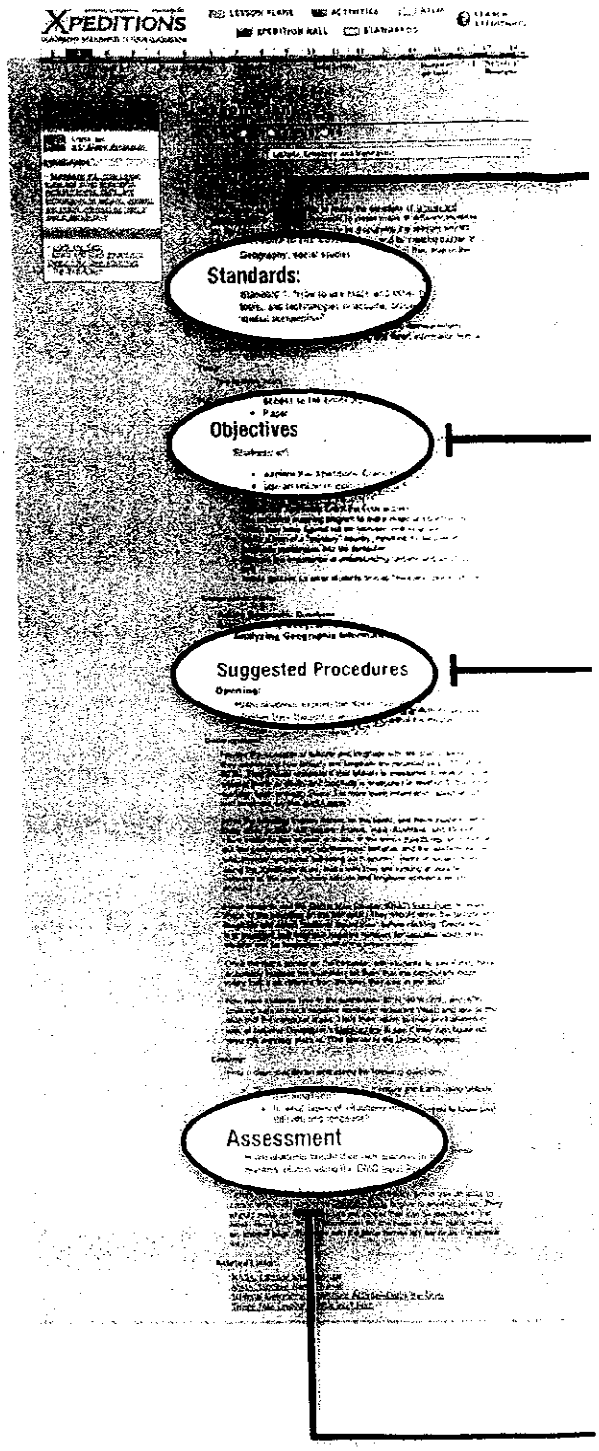
Thinkfinity Integration Framework

Thinkfinity provides a vast number of high quality, standards-based educational resources. These resources become even more powerful when educators are able to think critically about how they will integrate a Thinkfinity resource into their instruction. The Thinkfinity Integration Framework provides educators with a structure for thinking about how to effectively embed a learning object into their teaching to enhance student learning.



Types of Thinkfinity Online Resources

The definitions given for the following terms are specific to the Thinkfinity Integration Framework. The terms are used to describe the two main categories of resources found in Thinkfinity.

Learning Objects

Learning objects are individual resources designed for teacher or student use within a learning activity that can be implemented in a classroom, at home, or within an "out of classroom" setting. Learning objects are embedded within Thinkfinity lesson plans and other activities, but most can also be used independently to form learning activities that enrich existing lesson plans or "out of classroom" activities.

Individual learning objects are considered online or offline, depending on how each will be used. Online learning objects are designed to be used on a computer, and in many cases are interactive in nature. Offline learning objects are designed to be downloaded and printed.

Lesson Plans

Lesson plans that are developed by one of Thinkfinity's Content Partners provide a complete framework, including instructional objectives, national standards, instructional strategies, assessment, and more. Lesson plans embed the learning objects that are required for implementation.

Thinkfinity Integration Framework *continued*

National or State Standards

Objectives

Suggested Procedures

Learning activities are the building blocks of a lesson plan. They are the activities that students will engage in to meet the lesson objectives.

Most lesson plans are designed using multiple learning activities that together will help students learn the desired content.

The "Thinkfinity Integration Plan" (see pgs. 50-51) will help educators design a learning activity using one or more Thinkfinity learning objects to integrate within a lesson plan.

Learning Activity using one or more Thinkfinity **Learning Objects**

Integration Strategies:

- Which type of Thinkfinity learning object is this?
- Where will I use this learning object in the instructional cycle?
- Which instructional strategies will I employ?

Implementation Strategies:

- How will I configure my classroom for the learning activity?
- How will I manage implementation?
- What additional considerations will support successful implementation?

Learning Activity Development:

- What will students be asked to do?
- How will the learning activity address students' individual needs?
- How will I know if the learning activity was effective?

Assessment

Thinkfinity Integration Plan

This Integration Plan uses the Thinkfinity Integration Framework (see p. 48-49) as a tool to guide educators to think critically about how to successfully integrate Thinkfinity's online educational resources to improve student learning. A blank Integration Plan may be found on the Thinkfinity Web site at: *http://www.thinkfinity.org/documents/training_resource/Integration_Plan_Template.doc*

General Information	
Name: *Tina Teacher*	District/School or Organization:
Subject Area/Topic: *Math - Factoring*	Grade Level(s): *3-5*

Part 1: List the appropriate standards (State or National Standards for Content, Technology or 21st Century Skills) and one or more Thinkfinity object(s) aligned to the standards.

State or National Standards	Title(s) and URL(s) for Thinkfinity Learning Object(s)
NCTM Standards *Understand meanings of operations and how they relate to one another* *Compute fluently and make reasonable estimates*	*Factor Game* *http://illuminations.nctm.org/ActivityDetail.aspx?ID=12*

Part 2: Determine instructional elements — ***Integration***

A. Which type of Thinkfinity learning object is this?	B. Where will I use this learning object in the instructional cycle?	C. Which instructional strategies will I employ?
Learning Object for Teacher Use ☑ Online (requires a computer) ☐ Offline (no computer required) Learning Object for Student Use ☑ Online (requires a computer) ☐ Offline (no computer required)	☐ Opening Motivational Activity ☑ Central Focus of Lesson Plan ☐ Research Tool for Students ☐ Closure Activity ☐ Assessment Tool ☐ Remediation Tool ☐ Enrichment Tool	☐ Direct instruction ☐ Indirect instruction ☑ Experiential learning ☐ Independent study ☐ Interactive instruction ☐ Other **Notes:** Visit *http://ole.spsd.sk.ca/DE/PD/instr/index.html* for more information on the instructional strategies listed.
Notes: *Groups of students will solve a problem, by coming up with strategies for winning the game.*		

Part 3: Plan for student success — ***Implementation***

A. How will I configure my classroom for the learning activity?	
Classroom Configuration: ☐ Computers not needed—printable resource ☑ Whole group instruction, using a projector and / or interactive white board ☐ Whole group activity, with small groups using mobile laptops simultaneously ☑ Small group, using classroom computers or mobile laptops as rotating stations ☐ One to one, using classroom computers or mobile laptops as rotating stations ☐ One to one, in a computer lab setting ☐ One to one, with individual student laptops ☐ Other	Notes: *The mobile laptop cart has 15 computers. I will only need 10 computers to put students in groups of 5.* *Projector needed to model the activity.*
B. How will I manage implementation?	
Classroom Management: ☐ General computer rules / procedures ☑ Specific directions for activity ☐ Handling hands ☐ Other	Notes: *I will create a direction sheet for students to follow, so it is clear that each student will have a chance to observe, and 2 turns to play the game. This sheet will also have the guiding questions listed on it.*

Part 3 *continued*

C. What additional considerations will support successful implementation?

Classroom Management:
- ❑ Software
- ❑ Hardware
- ❑ Supplemental Materials
- ☑ Other

Notes:
Wireless Internet connection

Part 4: Develop the student learning activity

A. Describe the learning activity. What will students be asked to do with the Thinkfinity learning object(s)?

Students will get in groups of 3 to play the game. 2 students will play against one another, while the 3rd student observes the strategies used by the players. The following questions will guide the observation:

- *Give an example of something that one of the players did, that you would consider a "good move"? Explain.*
- *Give an example of something that one of the players did, that you would consider a "bad move"? Explain.*
- *In your opinion, what is the best 1st move of the game? Why is it the best move?*
- *Do you think that someone playing the game for a second time would have a better chance of winning, than someone who is playing the game for the first time? Why?*

Students will play 3 games, rotating positions so that each student gets a turn to observe. After all 3 games have been played, the 3 students will discuss the guiding observation questions.

B. Describe how the learning activity will address students' individual needs— *Differentiation*

- *The Factor Game has 3 different levels, a board with 30, 49, or 100 as the highest number to factor. Students who need more of a challenge can play at a higher level.*
- *Students who need extra support may use a multiplication chart during the game.*
- *Different learning styles are addressed—students play the game (concrete experience) and observe others playing the game (reflective observation).*

C. Effectiveness—What indicators will I expect to see / hear from students, which will inform me about the effectiveness of the learning activity?

As students are playing the game, I will circulate around the classroom, observing students playing the game, and discussing the questions with groups. I will look for students playing the game to strategically choose numbers based on the factors that are left on the game board during that turn. I will also look for students to choose all of the factors for the number chosen, indicating automaticity with multiplication facts. I will listen for students to describe the winning strategy—picking the number on the board that has the largest difference between itself and the sum of the factors that are left on the board.

Part 5: Do a complete trial run of the learning activity you described in step 4A.

Reflect on the learning activity.

Considerations:

- *It took me about 5 minutes to play one game, so I will allow 10 minutes for students to play one game and rotate positions—30 minutes total.*
- *I will need to model this game for students using a projection device, before they play. I will only play a partial game, because I want the students to experience the game themselves to figure out the winning strategies, instead of watching me employ the strategies.*
- *A player cannot pick a number that does not have any factors left on the board—will lose a turn. This will factor into strategy. They have to pick a number, not only with factors (composite), but also with a factor left on the board.*
- *Factors can't be picked more than once.*

Part 6: Consider the bigger picture

Describe how this learning activity fits within a lesson or unit plan, to meet objectives that will be assessed.

NOTE: Information about additional learning activities or materials that will be used to complement this learning activity may be included.

Prior to this learning activity, students will first receive instruction on the concept of multiplication and factoring. They will use Base-10 blocks to build models of multiplication, and draw arrays using graph paper. After students understand this concept, the Factor Game will help them practice factoring and committing multiplication facts to memory. After the initial whole-class lesson using this game, and discussing strategy, I will encourage them to practice multiplication tables and factoring at school, and at home, and give them additional opportunities to play the game to help them apply their skills.

Technology Definitions

What Is...?

BANDWIDTH: The capacity of a network or data connection to transmit data. T1 and DSL connections are considered high bandwidth while a dial-up connection is considered low bandwidth.

BLOG: Also called a Web log, blogs are shared on-line journals where people can post diary entries about their personal experiences, hobbies, etc.

BOOKMARK: Also known as a Favorite, a bookmark is a way of setting the browser to remember how to return to a certain Web page. Click the Web page name in your Bookmarks list to return to the page.

DOWNLOAD: This important function allows you to acquire files, software and other types of information from the Internet and store them in your computer.

FIREWALL: Firewalls are frequently used to prevent unauthorized Internet users from accessing private networks connected to the Internet.

FILTERING: Internet filtering blocks access to certain sites and is a general method to provide safe access for kids.

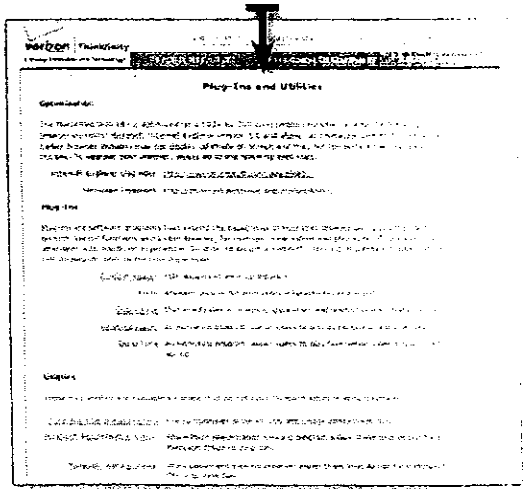
FRAMES: Some (but not all) Web sites use frames to organize content. Frames can present a table of contents or an index as a sidebar. A good indication that a Web site organizes its pages using frames is the presence of multiple scroll bars. Also, the URL does not change as you click through a site that uses frames.

GIF / JPEG: The two most commonly used formats for Web graphics. Graphic Interchange Format files are more suited for illustrations and graphic art while Joint Photographic Experts Group files are generally more suitable for photographs.

POP-UP: A window that suddenly appears (pops up) when you select an option with a mouse or press a special function key.

PLUG-INS: Plug-ins are software programs that extend the capabilities of your Web browser, including the ability to play audio samples (RealOne plug-in) or view video movies (QuickTime plug-in). If you can't hear or see a file on a Thinkfinity Web page, it's probably because you need a plug-in for that multimedia format. Plug-ins can be downloaded from the Internet and housed in a plug-ins folder in your computer. Common plug-ins are Acrobat Reader, Macromedia Shockwave and Flash, RealOne Player and QuickTime.

Access the Thinkfinity Plug-Ins and Utilities page at: *http://www.thinkfinity.org/plug_in.aspx*



SEARCH ENGINE: This Internet tool searches for Web pages that include the information you request. The most popular general search engines are Google® and Yahoo!®. Large Web sites such as Thinkfinity often have their own internal search engines that index the information throughout the site. (See a description of Thinkfinity's Search Engine in this guide.)

URL: A Uniform Resource Locator (URL) is the address of a Web page. Often a URL is given without the "*http://*" since most Web browsers automatically enter it for you. The URL for Thinkfinity is *www.thinkfinity.org*.

WEB BROWSER: A Web browser is one kind of software you can use to navigate the World Wide Web. Browsers let you see Web pages by translating Web layout code into visible text, images and sound. Microsoft Internet Explorer and Safari are two of the more popular browsers used today. Microsoft Internet Explorer can be downloaded for free from the Microsoft Web site; Safari can be downloaded for free from the Apple Web site.

Technology How To's

How Do You...?

CREATE A BOOKMARK / FAVORITES: A bookmark can be created for any Web page currently in view, except pages organized by frames (see previous page). In Microsoft Internet Explorer, click **Favorites** at the top of the menu bar and then **Add to Favorites**. In Safari, click the word **Bookmarks** on the top menu bar, and select **Add Bookmark**.

You also can use bookmarks as a classroom management tool by saving your bookmark list as a separate file. This permits you to prepare customized student bookmark files, host multiple bookmark lists on one computer and even transfer those bookmark files to other computers.

To save a bookmark list as a separate file, within the Internet Explorer window, select **File**, then **Import and Export** and follow the directions to **Export Favorites** to create a **Favorites** file, naming it and saving it on your computer, onto disk or CD, or other mode. You can then **Import** that file onto other computers using the same process. Now your favorites are all accessible on another computer.

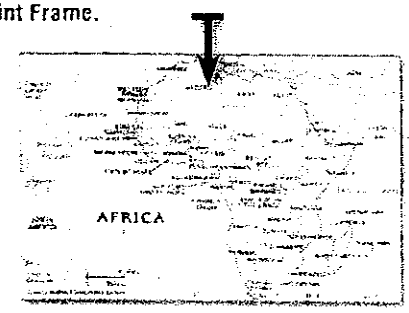
To open a bookmark list that has been saved as a separate file, within the Internet Explorer window, select **File**, and **Import and Export** then follow the directions to **Import Favorites** onto other computers.

DOWNLOAD A FILE: Downloading the file of your choice is usually as simple as clicking the **Download** button offered by that Web page. The file will be saved right into your computer's hard drive. Usually the download program will ask you to select a destination folder for the downloaded file. If the downloaded file arrives as an installer, clicking the **Install** or **Set Up** icon will place the file where you designate.

COPY AND PASTE A URL: To copy and paste a URL into a Word document, highlight the URL in the address bar of the browser window, then click **Edit**, then **Copy**. Once in the Word document, click **Edit**, then **Paste**. Within the Word document you may have to press the Enter key at the end of the URL to make it a live, "clickable" link.

OPEN OR CLOSE A NEW BROWSER WINDOW: You can open multiple Web browser windows at the same time. To do so, simply go to **File**, then **New**, then **Window** (if using a PC), or **File**, then **New Window** (if using a Mac). To close a window, simply click the X in the top-right corner (PC) or top-left corner (Mac) of your browser window.

PRINT FRAMES: To print a frame, you must click within the frame you wish to print before selecting **Print**. Otherwise you may end up printing the frame where you last clicked the mouse. For example, to print this map of Africa from Xpeditions, if it were located in a frame on a Web page, you would first click the map. To print in Microsoft Internet Explorer, select **File** on the top menu bar and then **Print**. Under the **Options** tab choose **Only the selected frame**. In Netscape, select **File** on the top menu bar and then **Print Frame**.



DOWNLOAD A PLUG-IN: If you encounter a Web page on the Internet that requires a plug-in, you will be prompted to download the plug-in you need for that page. Some plug-ins are installed automatically while others require you to download the plug-in file. You may need to restart your computer after downloading the plug-in. Visit Thinkfinity's plug-in page in the **Teachers Toolbox** section of the **Teacher Resources** page to see the free plug-ins required for full access to Thinkfinity resources.

KEEP YOUR COMPUTER UP TO DATE: As you explore the Internet, you may encounter slowdowns. While some delays are unavoidable, others can be prevented by making sure your computer is up to date. For example, periodically you need to update the version of your Internet browser and of your operating system (Microsoft Windows or Mac OS). On a Macintosh computer, you can determine the version of your browser by clicking on **Safari** in the upper-left corner and selecting **About Safari**, or if using **Firefox**, by clicking on Firefox in the upper-left corner and selecting **About Mozilla Firefox**. On a PC while in the browser, click **Help** and then select **About Internet Explorer**, **About Communicator**, or **About Mozilla Firefox**.

Safari — http://www.apple.com/support/downloads/

Firefox — http://www.mozillafirefox.us/

Internet Explorer — http://microsoft.com/ie

Netscape Communicator — http://www.netscape.com

HINTS FOR USING THE INTERNET EFFECTIVELY

TIPS FOR NAVIGATING THINKFINITY

- Each Partner site has a **Navigation Bar**
    - All navigation bars let you move to lessons, activities, recommended websites or other parts of the Website
    - A few of the Navigation Bars are on the left-side of the page on the Home Page, but then all are at the top of the screen
    - Some have multiple levels – the main toolbar always takes you to the lessons, websites and activities (if they have them); other locations may also be included
    - ArtsEdge is the trickiest – after the Home page, the Navigation bar includes Teach, Connect and Explore – click on Teach for Lessons, Standards and WebLinks and Explore for Look-Listen-Learn activities
    - EDSITEment lets you navigate to lessons and Web links either by clicking on the subject category or links to All Lessons or All Websites
- Each Partner site has a **Search** button either on the main Navigation Bar or above it – all of these search buttons lead to a search of all of Thinkfinity – see page 4 of the partner section of this notebook to find out how to limit the search. ArtsEdge also has a separate search button just for ArtsEdge
- Often, clicking on the logo will take you to the home page for the partner.

NAVIGATING BACK TO PREVIOUS PAGES

Using the BACK button

- Click the **Back button**

Have you ever tried to use the Back button to go back to a previous page and you need to press multiple times to find the page you want, or you just stay on the current page?

- Click on the **Down Arrow** on the right side of the back button
- Click the page you want to go to

Thinkfinity often opens new pages in a new window or new tab

If the **Back** button is greyed out, it means there are no previous pages to go to. Probably the current page was opened in a new window or new tab

- Close the current window or tab and the previous Web page should be on the screen

USING THE TASK BAR

Look at the Task Bar at the bottom of the screen. It will contain the names of all of the different files that are open. This can help you navigate back to previous pages – or indicate that you have opened a number of pages which should be closed!

FINDING SPECIFIC TERMS IN A WEB PAGE –OR – HOW CAN I FIND WHAT I WANT FROM A LONG LIST

Many of the partner sites display long lists of Web resources, lessons or activities. Instead of just browsing the list search for a topic that you are looking for or a word like interactive or multi-media to help you find relevant resources.

- On the menu bar, choose **Edit/ Find (on this page)** or press **CTRL+F**, type in the search words and click **Find Next** until you find what you are looking for

CREATING AN ANNOTATED LOG OF IMPORTANT WEBSITES BY COPYING AND PASTING

When you are searching Thinkfinity or its partner sites you will find:

- Lessons, Activities or WebLinks that you want to use or return to
- WebLinks embedded in lessons that you want to use or return to

It is important that you keep track of these, so that you can find them again. There are several ways you can do this:

- Add them in your **Favorites**
  - If you use this, **Organize** your favorites by setting up different folders
- Create a **Web Log** – the utility of this is that:
  - You can annotate the resources so that you know why you thought they were important or how you want to use them in your lesson
  - Easy to transport to a different computer
  - Easy to use as basis for a web page for an online lesson
  - If you enter a partner lesson or activity in the Web log be sure to enter enough information about how you found it, so that you can find it again
  - If you enter a Web site either from the list of reviewed Web sites or one that was embedded in a lesson, be sure to copy and paste the URL
- Use **History**
  - If you haven't done either of the things above, and you need to find a site that you have used recently, use the Explorer History command. This is most useful if you remember when you last visited the site and something about the page name

UNDERSTANDING THE URL (UNIFORM RESOURCE LOCATOR), BETTER KNOWN AS THE WEB ADDRESS

Example:

- http://www.pbs.org/wnet/jimcrow/segregation.html

- www.pbs.org = name of the host computer
    - HINT: **The host name is first way of determining validity of page**. What does it say about who created it?
        - Typically names of U.S. hosted pages end in: .com .edu .org .net
        - Typically foreign hosted pages end in a two letter country code
  - wnet/jimcrow = directory or folder path to the specific web page
  - segregation.html = web page
    - Web pages typically end in .htm, .html, .shtml, or .php, .aspx or other ending indicating language in which page was written
    - URL does not always end with web page; may end with folder name if there is a file called index.htm or index.html as this file will be displayed

If you find a good web page, how do you find others on the same site that might be useful?

- See if the page has **navigation buttons** that can take you **HOME** or to other useful pages in the site. Sometimes a **page logo** is the HOME button.
- **Deconstruct the web address**
    - Starting from the right remove all of the text to the closest slash (/)
    - Continue, one segment at a time until you get to another useful page
    - ***Example***: http://www.amnh.org/nationalcenter/Endangered/index.html

PRINTING A WEB PAGE THAT DOES NOT HAVE A PRINT MENU COMMAND OR ICON

Some activity pages do not have an easily apparent way to print them. If you want a copy to show to your students or if you want to see your students work, you can try the following procedures.

- Press **CTRL+P.** Sometimes this prints the window (or the entire page) even though there does not appear to be a print command.
- Press the **PrtSc** (PrintScreen) key. You will not see anything happen. Either open Word and choose Paste (from the Edit Menu or by right-clicking and choosing Paste). If you want to cut out just part of the screen, you may first want to paste the printscreen into Paint (found by choosing **Start / All Programs / Accessories / Paint** from Windows), then choose the part of the picture you want and paste that into Word. This only works if the picture you want does not take up more than one computer screen.

COPYING OR SAVING AN IMAGE

Sometimes you want to put an image that you have found on the Web into your lesson.

- Copying or saving an image
  - Point to the image you want and use the right mouse button (right click) to bring up the shortcut menu
  - Click on **Copy**, switch to the page on which you want the picture to appear, right-click to bring up a shortcut menu and choose **Paste**
  - **OR** choose **Save Picture As** and save the picture
  - **HINT**: If you have the option, you might want to use a larger version of the picture to save or copy. If you save a small picture and then try to increase it's size, it may become very blurry.

3-5 E-Sheet

Nature and Nurture

Going Online

Go to **A Nature and Nurture Walk in Mendel Park** on the American Museum of Natural History's Ology site.

Read the introductory page that describes terms like "nature" and "nurture."

After you have read this page, click on the **"Solve the Genetic Riddle"** button to go to an interactive activity where you will answer questions about nature and nurture to solve the riddle.

Be sure to read the "How to Play"directions before you begin the activity. You have to find all of the green stars to be able to solve the genetic riddle. Good luck!

Stop and wait for your teacher's instructions.

http://www.scienceneetlinks.com/esheet.cfm?DocID=143

read·write·think

New Literacies

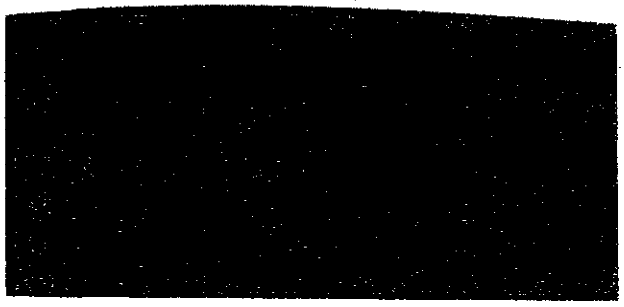
www.readwritethink.org

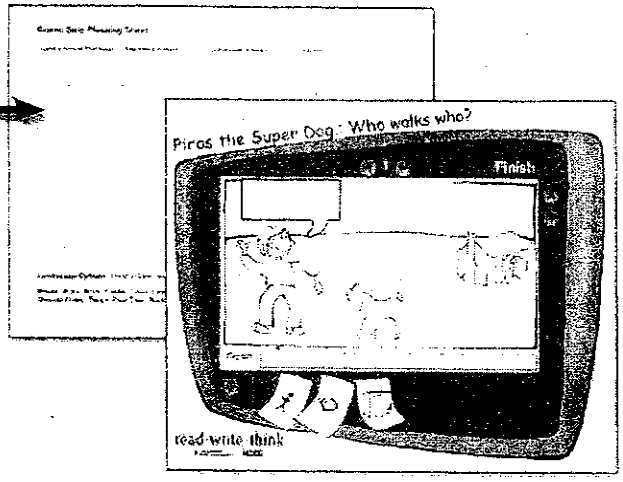
Teaching Scenario: Elementary (K-5)

Today's elementary students bring many experiences with a variety of texts to the classroom: print, music, online literacies, technical reading and writing, among others. The ReadWriteThink Web site provides teachers a way to connect students' out-of-school literacy experiences with those in the classroom.

Comics

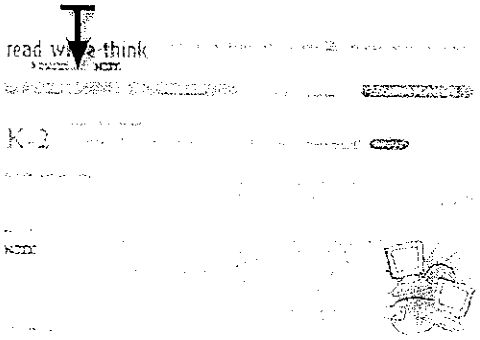
Mrs. O'Leary knows that many students love to read comics and cartoons. While browsing the **Student Materials Index**, she finds the Comic Creator. On the related **Tool Card** she finds numerous lessons that will enable her to teach many reading and writing skills using comic books and cartoons, such as **"Book Report Alternative: Examining Story Elements Using Story Map Comic Strips"** and **"Buzz! Whiz! Bang! Using Comic Books to Teach Onomatopoeia."** Mrs. O'Leary is also pleased to find a **Comic Strip Planning Sheet** as she only has time in the computer lab once a week.





E-mail and Instant Messaging

Mr. Ramirez knows that many of his students use e-mail and instant messaging to talk to each other outside of school. He decides to use e-mail and instant messaging in his classroom while teaching about audience and purpose. Using the ReadWriteThink **Search** function, he types **"email & audience"** and finds two lesson plans that will be useful in his classroom. After looking at **"What's the Difference? Beginning Writers Compare E-mail with Letter Writing"** and **"Write Right Back: Recognizing Readers' Needs and Expectations for E-mail Replies,"** Mr. Ramirez finds the E-mail Abbreviation Student Interactive, which can be used in a teacher presentation or as a student activity.



Music

Mrs. Wang observes her first-grade students singing songs during recess. She remembers reading an article in *The Reading Teacher* about how singing and songwriting can support early literacy. Interested in incorporating music into her class, Mrs. Wang accesses the **Advanced Search**, types **"music,"** and selects **ReadWriteThink, grade 1**. Since she has just started teaching word families, she decides to use the lesson **"A-Hunting We Will Go: Teaching Rhyming Through Musical Verse."** After finishing the lesson, Mrs. Wang sees how much her students enjoyed the interactive **Word Build & Bank**, so she checks the Student **Materials Tool Card** to find other lessons that use that online activity.

Pop Culture

Ms. Shelley noticed that the same students who play with trading cards seem to be reluctant readers in the classroom. Using the **Search** function, she types **"trading cards."** Ms. Shelley finds the lesson plan **"Powerful Writing: Description in Creating Monster Trading Cards"** where students can combine art and writing to make their own trading cards. She is also excited to find an interactive Character Trading Cards tool in the ReadWriteThink Student Materials Index for students to create their trading cards online.