Using the Internet to Promote Inquiry-based Learning

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View all presentation materials at:
http://www.biopoint.com/ibr/Welcome.html

Workshop Schedule:

- Saturday, February 1: 8:30 AM to 3:30 PM
- Thursday, February 13: 4:15 PM to 6:45 PM
- Thursday, February 20: 4:15 PM to 6:45 PM
- Thursday, February 27: 4:15 PM to 6:45 PM
- Monday, March 3: 4:15 PM to 6:45 PM
- Saturday, March 15: 8:30 AM to 3:30 PM

Presentation Overview: An introduction to the Web and online learning

What does engaged learning and problem-solving look like?
It's 1992…
Technology as a "Vehicle" for Learning
40/?/?
1994?
The Classroom Laundromat
Education, Technology and Change
Nuts and bolts
Audience Assessment
Computer use in schools
The Power of Online Learning
21st Century Skills
A Brief Introduction to Online Learning
Types of Online Learning Lessons
Effective Technology Use
Catalysts!
Essential Questions
WebSearching
The Power of Unique Web Resources

<u>Slides:</u>

Slide 2-4: **What does engaged learning and problem-solving look like?**

Slide 5: **It's 1992 and you are sitting in front of your 25 MHz, 2 MB, 40 MB hard drive computer….**

Slide 6-7: **Technology as a "Vehicle" for Learning.**

    Upshot: Classroom technology has changed dramatically.

    Critical Question: Have you kept pace?

    Notes:

Slide 8: **40/?/?**

    Notes:

Slide 8: **1994/?**

    Notes:

Slide 9-14 **The Classroom Laundromat and Changes in Schools and Society**

    Upshot: The World Wide Web is the dominant "technology" medium in schools. The Web has redefined how people work, interact, and access information. Why is the Web so attractive to our students?

    Critical Questions: In our schools, does, or has the Web redefined how our students learn?

    Do students learn in the same manner they did 10 years ago? To see a great article on new learning behaviors see:

        "The Information-Age Mindset: changes in Students and Implications for Higher Education" available at: http://www.educause.edu/pub/er/erm00/articles005/erm0051.pdf or as a link from our Inquiry-based Resource Page.

    Do school and teachers embrace change, if that change is necessary and good for students?

    Notes: information about eSuds is available at http://www.esuds.net

Slide 15:   Nuts and Bolts: An Overview of the Workshop

Welcome!
Who we are…
Who are you?
Presentations Resources (all resources found at
http://www.biopoint.com/ibr/Welcome.html)
Why are you here? Please complete Why Are You Here?/Skills Inventory at this
time.
An Overview of the Workshop

**Slide 16-
17:      Workshop Dates and Goals**

- Develop the ability to design online curriculum.
- Implement online learning activities as an integral part of instruction.
- Develop the ability to use online learning to develop process skills in
  students.
- Develop support/developmental teams.

Slide 18:   Audience Assessment

Why are you here?
How many have used the Web to prepare a lesson?
How many have designed lessons where students use the Web as a resource?
How many can generally describe a WebQuest?
How many have built some type of online learning activity like a WebQuest?

**Slide 19-
21   Computer Use: Where do you stand?**

*Critical Question: What trends of importance are present in the data?*

Notes:

Slide 22: The Power of Online Learning

Upshot: Online curriculum has the power to deliver a wide range of content and a and process skills.

Critical Questions: Do schools have a program for delivering 21st Century Skills? For information literacy skills? Do you believe schools should be teaching these skills?

 Notes:
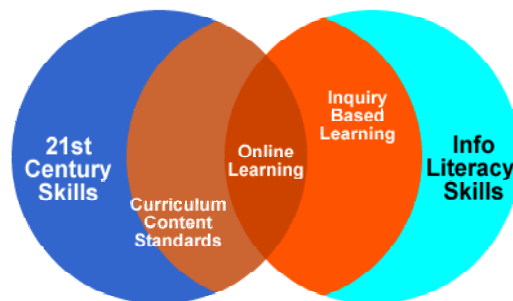
Slide 23: 21st Century Skills

Upshot: Changes in how the world works require new student literacies-**21st Century Skill** *illiteracies.*

Critical Question: Given the current realities, who is responsible for developing 21st Century Skills in students?

Notes: 21st Century Skills:

- Digital Age Literacy (basic, scientific, mathematical, technological, visual information, cultural and global literacy).

- Inventive Thinking: ability to think and reason critically, perform within complex systems as a risk taker who is curious and creative.

- Effective Communication: communicate and interact on all levels.

- High Productivity: use 21st Century tools to streamline prioritizing, planning, and producing results.

  Information about 21st Century Skills is available at:

  http://www.ncrel.org/engauge/skills/execsum.htm

  Additional Notes:

Slide 24-26 **An Introduction to Online Learning**

Upshot: *Online learning documents provide unique opportunities to engage students in authentic problem solving tasks while building technology skills they will use the rest of their lives…*

Critical Question: *What kind of Web learning takes place in your classroom or your school?*

Notes:

Online learning experiences:

- Provide structure for learning in vast and sometimes unmanageable resource.

- Different formats for online instruction exist, including WebQuests, MiniQuests, Project Pages, Curriculum Pages, CurriculumQuests and *MyDecisionIs*…

  More information about these activities, their formats, and examples can be found at:

  http://www.csd99.k12.il.us/technology/online_learning.htm

- Online learning experiences should take advantage of unique Web resources available only on the Web.

- Because these experiences utilize computers and the Web, they are inherently engaging for our students.

- These activities promote the development of 21st Century Skills. A careful integration of such activities enables teachers to require more student ownership of the skills required to complete the activities. Over multiple experiences, the responsibility for developing ***"Essential Elements"*** of online learning documents are shifted from teacher to the student. As such, skills that involve information location, evaluation and synthesis, knowledge building, and the creation of personal solutions can be achieved.

- These activities are **pliable and scalable** and can be developed for different content areas and ability levels.

- **The *"Power of One"* and the Cumulative Experience. Schools must rely on the cumulative experience**—no teacher can be responsible for everything—if every teacher did just one experience, how many activities would each student do? *Image a systemic approach to address information literacy that had at its goal attainment of 21st Century skills…imagine the benefit to our students…*

- **Additional information** on Online Learning can be found by reading the outstanding CEO Forum Report: ***"The Power of Digital Learning: Integrating Digital Content,"*** available at: http://www.ceoforum.org/downloads/report3.pdf

Notes (continued):

Slide 27: Examples of Online Learning

Upshot: Numerous formats exist for developing online learning experiences for students that can build 21st Century Skills.

Critical Question: Can you build and integrate these documents into your instruction (or job responsibility)? Is it your responsibility to do so? Should this be required of teachers?

Notes:

A WebQuest: Nuclear Power in Seaside WebQuest
http://powayusd.sdcoe.k12.ca.us/projects/NUKEWEB/default.htm

A Curriculum Page: Professional Tools and Resources
http://www.myprojectpages.com/project.asp?id=383

A CurriculumQuest: Civil Rights Quest
http://www.myprojectpages.com/project.asp?id=728

A MiniQuest: EnzymeQuest
http://www.myprojectpages.com/project.asp?id=642

A Project Page: Soak It Up
http://www.myprojectpages.com/project.asp?id=431

MyDecisionIs: a modification of a Project Page to explore a controversial topic

VisualQuest: a modification of a MiniQuest that uses images only to answer a question.

Examples:

A WebQuest:

What is it: an online inquiry-based activity, first developed in 1995.

What's it for? Provides students with an online lesson and the components necessary to engage in inquiry-based learning online.

How long does it take to develop? Depending on the size and scope of the project, development time can be significant.

How long does it take to implement in the classroom? It depends on the scope of the assignment, but a true WebQuest generally takes 5-10 teaching periods to complete, more if student presentations are part of the product.

A Curriculum Page:

What is it: a list of electronic Web links.

What's it for? Provides an electronic list of links for an intended purpose. Keep it digital to avoid having students type in URL's. Anyone who has provided links to students on a handout will do that only once.

How long does it take to develop? It takes an experienced user about 45minutes to 1 hour to construct if the links have been previously researched. If not, time required depends on your search skills.

How long does it take to implement in the classroom? It depends on the scope of the assignment.

A CurriculumQuest

What is it: an advanced form of a curriculum page, this activity presents instructions and an essential question. Typically, these activities can be planned around the resources found at a single Web site.

What's it for? A simple and powerful technique for integrating online learning into instruction. CurriculumQuests need to focus on unique Web resources.

How long does it take to develop? It takes an experienced user about 3 hours to design.

How long does it take to implement in the classroom? They generally are 1-day activities, but can be designed for 2 days.

A MiniQuest:

What is it: a 1-2 day activity.

What's it for? Providing a Web learning experience grounded in inquiry and critical thinking. Provides a Web learning opportunity with a minimum of design and integration time. Three different types can be developed: Discovery (at the beginning of a unit), Exploratory (in the middle of a curricular sequence) and Culminating (at the end of a curricular sequence). For more information on the activity types, please see:

http://www.biopoint.com/miniquests/mq_types.htm

How long does it take to develop? It takes an experienced user about 3 hours to design.

How long does it take to implement in the classroom? They generally are 1-day activities, but can be designed for 2 days.

A Project Page:

What is it: a 3-7 day inquiry-based activity.

What's it for? Provides an in-depth inquiry-based activity based on an essential question. Designed to be used in the development of an information literacy program. Over multiple experiences, the responsibilities for developing "Essential Elements" of the Project Page are shifted from teacher to the student.

How long does it take to develop? It takes an experienced user about 3-10 hours to design.

How long does it take to implement in the classroom? They generally take between 3-7 days to implement.

MyDecisionIs…

What is it: a 3-7 day inquiry-based activity, specifically designed to immerse students in a decision-making process about controversial subject matter.

What's it for? Provides an in-depth inquiry-based activity based on an essential question about a controversy, such as labeling genetically modified food. Designed to be used to help clarify where and what a student believes about a particular controversial issue. Asks a student to identify where they stand on a continuum from Pro to Con, and why they feel that way.

How long does it take to develop? It takes an experienced user about 6-10 hours to design.

How long does it take to implement in the classroom? They generally take between 3-7 days to implement, but smaller experiences can be designed.

VisualQuest:

What is it: a 1-2 day activity that uses images as data sources to answer an essential question.

What's it for? VisualQuests are designed to develop visual literacy skills (one of the 21st Century Literacy Skills) in students.

How long does it take to develop? It takes an experienced user about 5-7 hours to design.

How long does it take to implement in the classroom? They generally take between 1-3 days to implement.

Additional Notes:

Slide 28-42: Mrs. Garcia/State of Illinois Technology Plan/Characteristics of Effective Technology Use/

Critical Questions: What are the characteristics of effective technology use? Do online learning activities meet the characteristics of effective technology use?

Notes:

Slide 43:   Inquiry-based Learning: A Pedagogical Process

Upshot: Inquiry requires students to pose questions, process information, and formulate answers.

Critical Question: Does teaching through inquiry may require a shift in how you teach?

Notes: the model is available at: http://www.biopoint.com/msla/research.html

Slide 44- **Essential Questions/Practice with Deformed Frogs!**
65

Upshot: Effective Web learning begins with the question.

Critical Question: Do you design instruction by using the idea of the essential question?

Notes:
Essential questions promote decision-making or the development of a course of action…

Effective research pedagogy begins with asking or framing an essential question. For our purposes, an essential question is defined as a question that requires students to make a decision or plan a course of action. Making decisions and/or planning a course of action are essential adult skills that students need to display at a high level of proficiency. Educators need to focus on such questions; many teachers rely to heavily on "What is.." questions such as "What is cancer." Asking a student to answer such in a research project is licensing the student to move information from point A to point B without concern for integrating discrete information pieces into new knowledge or fresh insights. Effectively, in this day of digital "cutting and pasting," asking a "What is.." question is a license to plagiarize.

Examples of essential questions can be found at:
http://www.biopoint.com/eq/page1.html

Information about essential questions can be found at:
http://www.essentialschools.org/pubs/horace/05/v05n05.html
http://www.fno.org/sept96/questions.html
http://www.fno.org/nov97/toolkit.html

Essential Questions used in this presentation:

What human activity has the most significant impact on groundwater in your community? Support your position and propose a solution.

What is the best plan to solve the problems caused by urban deer? Your plan may include no more that two strategies.

How would you design and build a parachute in order to slow its descent?

How do you use statistics to compare unlike events? Who is the greatest running back of our/all time?

How can an athlete in your sport improve their performance using one of Newton's three laws of motion?

Would you be willing to help a slave escape?

What does a cell have to do to go from one cell to two cells?

Should new powers be delegated to the Federal Government after 9/11?

Develop a plan to maintain a healthy lifestyle.

Develop a plan to increase muscle strength.

Should high-energy physics research continue to be funded by the United States government? Justify your answer.

The essential question you will be working on is which of the 6 measurements mentioned above is the most impressive?

What are the two most significant benefits for reopening the trial you have selected?

Should the novel you selected be banned for high school students in our School District?

What is the most significant aspect of contemporary Chicago that can be directly traced to the Great Chicago Fire of 1871?

Additional Notes on Essential Questions:

Slide 66: Catalysts!

Upshot: Designing lessons with unique Web resources maximize the potential of the Web while maximizing engagement for students. Any teacher with some experience in lesson plan design can build these-its not about the technology, its about the pedagogy. Let's concentrate on what teachers know best-designing and delivering instruction…

Critical Question: Locating and building online learning experiences that use unique resources requires time. Where will this time come from?

Notes: a majority of these resources are located at:

http://www.archives.gov/digital_classroom

Barbed Wire
http://www.archives.gov/digital_classroom/lessons/barbed_wire_patent/barbed_wire_patent.html

A Check
http://www.archives.gov/digital_classroom/lessons/alaska_migration/alaska_migration.html

He's Watching You
http://www.archives.gov/exhibit_hall/powers_of_persuasion/hes_watching_you/images_html/hes_watching_you.html

Warning:
http://www.archives.gov/exhibit_hall/powers_of_persuasion/warning/images_html/our_homes_in_danger.html

Railroad
http://www.archives.gov/digital_classroom/lessons/anti_railroad_propaganda/anti_railroad_propaganda.html

Poster Activity
http://www.archives.gov/digital_classroom/lessons/analysis_worksheets/poster.html

Zimmermann Telegram
http://www.archives.gov/digital_classroom/lessons/zimmermann_telegram/zimmermann_telegram.html

McCarthy Telegram
http://www.archives.gov/digital_classroom/lessons/mccarthy_telegram/mccarthy_telegram.html

Sound Recordings
http://www.archives.gov/digital_classroom/lessons/civil_war_documents/civil_war_documents.html

Zebra Mussel Photo
http://www.dnr.state.wi.us/org/caer/ce/eek/critter/invert/zebramussel.htm

National Atlas
http://nationalatlas.gov/natlas/natlasstart.asp

Ultimate Science Website
http://www.biopoint.com/ultimate.html

CloningQuest
http://www.myprojectpages.com/project.asp?id=725

Slide 67: Foundation Questions:

Upshot: *Foundation questions are what type questions. When answered, foundation questions supply the raw information necessary to build an answer to the foundation question.*

Critical Question: *Foundation questions provide structure to an investigation. In past Web learning experiences, how structured was the activity?*

Notes:

Slide 68: Foundation Questions, Keywords and Search Strategy

Upshot: *Use foundation questions to generate search keywords. Use your knowledge of searching to build your keyword list into a list of search strings. What better way to locate the information you need than by using keywords from the very questions you are trying to answer….*

Critical Question: *Will you require your students to do this?*

Notes:

Slide 69-71: Web Searching

Resources:

- Biopoint   http://www.biopoint.com
- Biopoint Seach Grid 1   http://www.biopoint.com/ibr/tool.html
- Evaluating Web Resources   http://www.biopoint.com/ibr/startup.html
- "Spoof" Web Sites   http://www.biopoint.com/ultimate.html

                                                      http://www.museumofhoaxes.com/
                                                      hoaxsites.html
- Very useful Web search site
  http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/ToolsTables.html

An overview

This handout describes the techniques and tools required to successfully locate, evaluate and manage online resources. Tools, such as search engines, search directories, and metasearch search tools are presented. Techniques for locating online resources (including text-based information and imagery), with these tools are presented, along with strategies for evaluating the content of the online resources.

Introduction

Locating, evaluating, and managing digital online information effectively is a 21st Century skill. Teachers and students must possess a fundamental skill set that enables them to successfully locate information in the information medium of today and that of the future-the World Wide Web. This information is the raw material of decision-making and knowledge about the world we live in-consequently, such skills are of absolutely critical importance.

Search Tools:

Search Tools can be divided into three main areas: search directories, search engines and metasearch engines.

Search Directories:

Search Directories, such as Yahoo!, are composed of a database of Web sites found by a group of individuals. Individuals search for quality sites about a topic and those sites are then built into a database. When individuals search a directory, they search the database for matches to the keywords they have supplied by typing into the search directory.

Considerations:

- Because of the human influence required to develop the database, search directories databases are small. Practical consideration: the search return is smaller and potentially more manageable, especially for students.
- Because of the human influence, search directories may contain more quality Web sites. The important word is **may**, as some directories do contain sites that are of questionable content value.

Search Engines:

Search engines, such as Google (http://www.google.com) and Altavista (http://www.google.com) work differently that search directories. Engines send a mechanical spider through the Web and to various Web pages where they record keywords built into the Web page by the Web page programmers. Users of the Web page never see these keywords, but the spiders do. Below is an example of the computer code (HTML language) from Biopoint.com. Keywords are indicated in bold:

<META NAME="keywords" CONTENT="**education, technology, educational technology, consulting, staff development, professional growth, inquiry-based learning, webquests, webessays, webtools**">

<META NAME="description" CONTENT="Internet Innovations Inc. provides technology staff development workshops for educational institutions">

<title>Welcome to Biopoint.com and Internet Innovations, Incorporated</title>

The keywords collected by the spider are then recorded into a database. A user types in keywords into the search engine and the engine matches the user keywords with the keywords in the database. Please realize that there are other ways in which spiders can operate.

Considerations:

- Because of the mechanical nature of search engines (i.e. the use of the spider), search engines are extremely large. They typically index millions of pages. As such, *search returns* can be exceedingly large (also in the millions of returns). A search using Altavista and the keyword **virus** returned almost 5 million links. Upshot: students as well as teachers need to know how to search properly.
- Search engines, because they can access large amounts of data, permit a wide range of coverage on a particular topic.

Metasearch Tools:

Metasearch tools are search tools that allow the user to combine multiple search engines and directories together in one interface. In other words, a user can use multiple search tools at once to search for resources about a particular topic. Examples of metasearch tools include **qbSeach** (http://www.qbsearch.com), **Researchville** (http://www.researchville.com), and **Metacrawler** (http://www.metacrawler.com).

Considerations:

- Metasearch tools are effective tools for returning large amounts of returns quickly. In some cases, the display of these returns may be confusing for the beginning Web searcher. When using metasearch tools with students, a careful explanation of how the search tool works should be undertaken.

Search Strategies

Numerous search strategies exist that can be used within various search tools to locate information. Let's begin with the consistent strategies that work with ALL tools.

Excluding terms (-):

The excluding symbol (-) removes keywords from a search. For example, using our earlier example of a search on **virus**, we may alter the search to:

virus -computer

This search, performed in Altavista, reduces the search return by 2.5 million sites!

Important syntax point: use the following pattern, or syntax when using excluding terms:

> First keyword followed by a space, then the minus sign, followed by no space and then the second keyword you wish to remove.

Remember that you can have as many keywords after the minus that you want as long as the syntax is followed. For example:

virus -computer -software

<u>Including terms (+):</u>

The including symbol (+) requires that the keyword that follows the symbol be included in the search. We may alter our original search to:

virus -computer -software +ebola

Interpreted, this means that we must have a Web site that includes viruses, specifically Ebola, and cannot include the keywords computer and software.

Conducting this search in Altavista actually *reduces* the search return because you have made the search actually more *specific*. In fact, the search return displayed only includes slightly more than 43,000 links. Adding another keyword to the search string:

virus -computer -software +ebola +marburg

Conducting this search in Altavista returns slightly less than 3200 web sites. Using this simple search strategy of pluses and minuses has enabled the search return to be **reduced from 4.9 million returns to 3200 Web sites**.

<u>Important point:</u>

Excluding and including terms are consistent across all Web search tools i.e. they can be used with any search too

l.

Phrase searching

Phrase searching involves using quotes around a series (at least two) of keywords. This requires that the search tool locate that specific phrase in a Web page. This ensures that the two terms (or more) are associated together and this increases the likelihood that the page will be about the topic represented by the keywords. For example:

acid rain is a potentially different search than an **"acid rain"** search. Depending on the search tool, the **acid rain** search must include some form of linkage term-this may be a AND or it could be an OR linkage. The two searches are very different!

Detecting plagiarism: phrase searching can be used to detect cases of plagiarism. Using Google or Altavista, type the offending phrase or passage into either search tool, with quotations added on either side of the passage. If the passage has been copied from a Web site, there is a very good chance that either of these search tools will provide a match with the Web site the passage was copied from.

Boolean Searching

Boolean searching use linkage terms such as AND, OR, NOT, AND NOT, NEAR, and ADJACENT. Generally, Boolean searching must be used in advanced versions of search tools, however, not all search tools even support Boolean searching. Because of this limitation, and because including and excluding terms can be used to simulate Boolean logic, this strategy is of

limited use for students. Boolean logic can be used by advanced searchers to locate information effectively in the proper syntax is matched with the proper tool. See the Biopoint search grids for information about search tools that support Boolean searching.

Working with Younger Students:

Working with younger students presents another challenge: finding age appropriate content. To locate resources for younger students, we suggest using the search tools presented at the Kid's Search Tools site:

http://sunsite.berkeley.edu/KidsClick!/ksearch2.html

Specialty Searching: Graphics and Digital Imagery

Several search tools provide capability for searching for digital imagery. Use Google.com and Altavista.com as primary tools for locating images. In each case, be sure to select the image search before you begin locating graphics.

Researchville also offers digital imagery searching through a metasearch tool interface.

If you work with younger students or are concerned about the potential inappropriateness of Web digital imagery, use Ditto.com (http://www.ditto.com). This is a directory and can be considered safe for use with students (although we make no guarantees).

IMPORTANT POINT: The strategies that were discussed above for locating Web resources (including, excluding terms, etc.) can be used within the Google and Altavista image search.

How to make use of the images you find in Google. Use the following strategy.

1. Go to Google and select images. Type in your search terms or string.
2. Google will display the results. Click on the image you wish to view.
3. Google will return a Web page that is split in the middle. The graphic will be in the top frame, the Web page that contains the graphic will be displayed in the lower frame. (By the way, this is also an outstanding way to find other useful Web sites about a topic-do not ignore the displayed Web site. It can yield other images as well as text information.
4. Click on the graphic. This will display the image in its own Web page window. The Web address of the graphic is displayed in the address window. We will need to use this address when we build our learning activities.

   This image can also be backflipped at this time.

Specialty Searching with Google

Google can be used to specifically target Web sites of interest by the following manner.

1. When a Web site is found that has outstanding content or resources regarding a particular subject or content area, Google can be used to "drill-down" into the site using the following syntax:
   a. Syntax: "search term 1 search term 2" site:www.anysite.com
   b. an example will help: Let's say we were searching inquiry based learning in Google and found an article on inquiry-based learning at Biopoint.com. We could

then use Google to locate all other articles and resources about inquiry based learning by applying the syntax found above.

"inquiry based learning" site:www.biopoint.com

This procedure can also be used to "create" a search capability for a site that has no search function.

Things to do and consider:

1. When you find an appropriate site in Google, be sure to click on **Similar pages** for more useful sites.
2. When you click on a link and the site is no longer present, be sure to return to the search and click on **Cached**. This will give you a *picture* of the site (stored in the Google database) that was present at that link. It's better than nothing and can still provide useful information.
3. View specialty Google searches at:
   a. http://www.google.com/options/index.html

Other Tools to Consider:

Vivisimo: http://www.vivisimo.com

Researchville: http://www.researchville.com

qbSearch: http://www.qbsearch.com

Backflip: http://www.backflip.com

The Invisible Web:

http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/InvisibleWeb.html

The Power of Unique Web Resources: The Next Step

Slide 72-75 : Unique Web Resources: A Rationale

From:
digital delivery of traditional pedagogy that delivers fact-based instruction, and is content acquisition driven.

To:
digital delivery of 21st Century curriculum based on information literacy, the development of info literacy skills, with lessons that are interactive, multi-sensory that utilize unique Web resources framed within an inquiry-based learning strategy.

Slide 76-77: A Strategy

Focus on:

Unique content: raw data, collections, maps, images, tutorials, guides and other resources only found online.
Unique capability: processing capability, simulations, calculators

An then:

Place within a learning strategy that requires the processing, evaluation and synthesis of information.

With the Goal: to create understanding in a student-centered constructive environment

Slide 78: Even More Strategy: How to locate unique Web resources: A Search Strategy

Use Google: http://www.google.com

Topic Area	Action Terms	Content area
Search keywords		
Ex. zebra mussels	interactive	biology
	simulations	
	animations	
	ecology	
	maps	
	images	
	models	
	calculators	
	resources	
	quiz	
	multi-sensory	
	tutorial(s)	
	guide	

Slide 79: Examples of unique Web Resources

The Virtual Wall	http://www.thevirtualwall.org/
Here is New York	http://hereisnewyork.org/index2.asp
Sports Fitness Calculators	http://www.worldar.com/calc/
The Citation Machine	http://www.landmark-project.com/citation_machine/cm.php
Raw Data Sources	http://www.landmark-project.com/page.php3?stamp=&pn=4&psn=&cat=22
ExploreMath.com	http://www.exploremath.com
Sculpture Design	http://www.hmsg.si.edu/education/interactive.html
Read, Write,Think	http://www.readwritethink.org/
Justmove.org	http://www.justmove.org/home.cfm
Powerful Days in black and white	
	http://www.kodak.com/US/en/corp/features/moore/klanFrame.shtml
NASA Satellites	http://liftoff.msfc.nasa.gov/academy/rocket_sci/satellites/
Human Body Gallery Guide	http://www.smm.org/heart/humanBody/top.html
Invention at Play	http://www.si.edu/lemelson/centerpieces/iap/index.html
Genetic Science Learning Center	http://gslc.genetics.utah.edu/units/basics/tour/