Using the Internet for Student Research Projects

Doug Prouty - CCCOE

CONTRA COSTA COUNTY
OFFICE of EDUCATION

Creating Students Who Can...

- **solve real-world problems**
- **make their own decisions**
- **determine important criteria**
- **validate sources**
- **"sift and sort" for relevant information**
- **synthesize from a variety of sources**
- **communicate to a variety of audiences and in an appropriate format**

Agenda

- **Looking at the Research Assignment**
- **Research Method – The Big6**
- **Project Scenarios**
  - *WebQuests*
- **Searching the Web**
- **Analyzing Sites – S.N.A.P.**
- **Treasure Hunting**
- **Sifting, Sorting & Synthesizing**
- **Reporting and Bibliography**

Student Centered/Active Learning

- **Active learning engages students in activities involving the application of course content.**

- **Students are required to perform—not just listen.**

- **Active Learning promotes greater retention and transfer of knowledge**

Preparing Students

How do we prepare students for the experiences they will encounter as they proceed through life?

- *Problem Solvers*
- *Lifelong Learners*
- *Complex Thinkers*
- *Effective Communicators*
- *Effective Collaborators*

The Research Assignment

- **Modification of Traditional Assignment**
  - *Busy work*
  - *State Report, Animals, Presidents, etc.*
- **Relevant to the Student**
  - *What they care about*
- **Real-World Problem**
  - *Current and important socially*

We want to avoid...

- **Repeating others opinions**
- **Merging of 2 encyclopedia articles**
- **Restating of other people's words "in own words"**

- **Copy and Paste Plagiarism**

The Big6™

The Big6™ is a systematic approach for solving life's essential questions or, on a daily basis, to simply satisfy the "need to know."

The Big6™ - Task Definition

- **Introduce a Question to be solved**
- **Highly motivating**
- **What needs to be done to solve the riddle?**

#1 Task Definition

- What's the task?
- What types of information do I need?

The Big6™ - Information Seeking Strategies

- **What sources are available and which are the best?**
- **How will I search the Web and what tools will I use?**

The Big6™ - Location and Access

- **Finding and sifting through information**
- **Handling information and readying a Bibliography**

The Big6™ - Use of Information

- **SNAP – content evaluation**
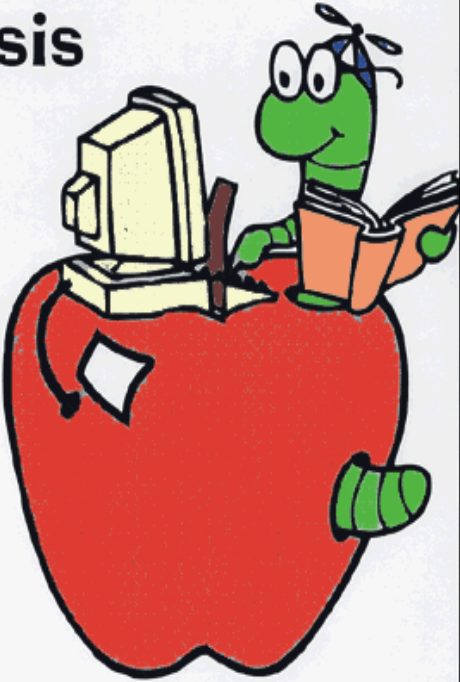- **What parts will be used to solve the problem/create the presentation**

The Big6™ - Synthesis

- **Sort and Sift**
- **Review copyright and define plagiarism**
- **Discuss various formats or projects to share information**
- **Rubric**

13
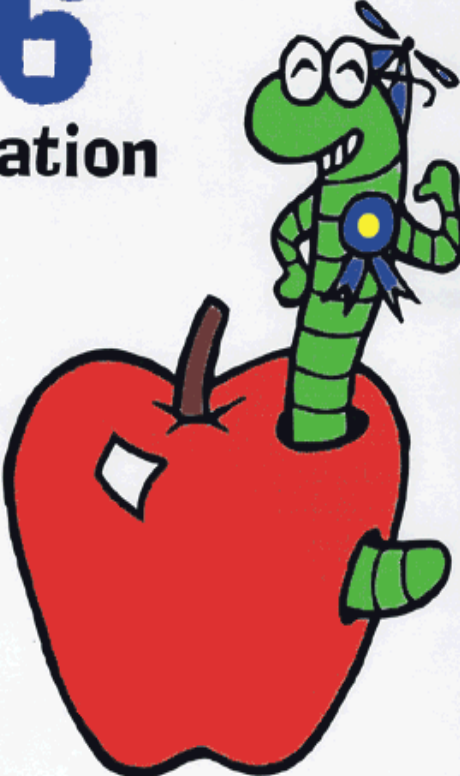
The Big6™ - Evaluation

- **Evaluate products with students and classroom teacher using criteria established in Step 1**
- **Share and Reflect**

Problem/Project Scenarios

Create a situation that makes

students

NEED and WANT

to locate information

Scenario - *Example 6th grade*

Choose an important person in history. Find out about who they were and what they accomplished.

Write an outline, rough draft and final 3 page paper.

Plagiarism!

Boring!

Scenario - *Example 6th grade*

A well known cereal company has developed a new cereal. They are going to put "special people in History" on the front of a cereal box. They are looking for suggestions from the point of view of a sixth grader. They want to know what makes your person special? What makes him/her a hero?

This company needs to be persuaded, by a Powerpoint presentation, why you think your person should be chosen.

Best Scenarios

- **These require students to have to decide "which is the best": Best city for the family to live, Best state for Disney's new park, Best invention to include in a time-capsule**

- **Asking students to complete a task—create a newspaper, write a play, can just be a creative way of asking for the "old 3 page paper".**

Create your own Scenario

- **Pick a subject area**
- **Pick a topic**
- **Pose a question for research that…**
  - *has no simple solution*
  - *requires research*
  - *is highly motivating*
  - *is significant politically, internationally, ecologically, etc.*

What is a WebQuest?

I hear and I forget. I see and I remember. I do and I understand.

An inquiry-oriented activity in which most or all of the information used by learners is drawn from the Web.

Purpose:

- *designed to use learners' time well*

- *focus on using information rather than looking for it*

- *support learners' thinking at the levels of analysis, synthesis, and evaluation.*

Critical Attributes of a WQ

http://webquest.sdsu.edu/

1. **Introduction – peaks interest**
2. **Task or end-product explained**
3. **Process – steps**
4. **Information Sources – web resources**
5. **Evaluation Rubric**
6. **Conclusion – next steps**

Step Zero, Before Searching

- **What is the question you're trying to answer? Think about the – people, terms, organizations, places, objects, that might be mentioned in any web page that might contain the answer to your question.**

- **Create a list of search terms – Must, Might, & Mustn't**

Searching the Web

- **Skills apply to all digital databases**
- **Web is becoming more ubiquitous**
- **Access devices are expanding**
- **97% of all published information is digital**
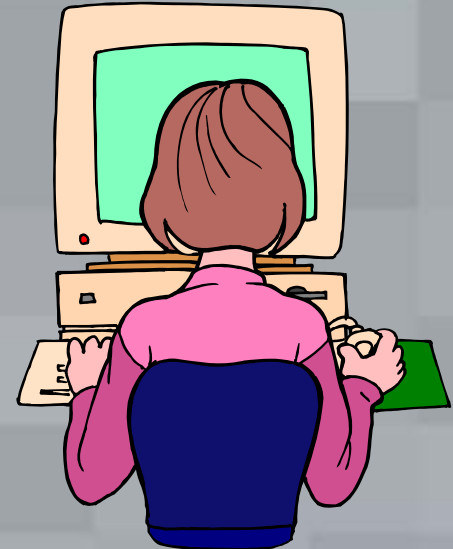
What's a search engine?

- **An Internet tool which will search for Internet sites containing your search terms.**

- **Provides results in the form of links to sites which include the terms you are looking for.**

- **Search engines search databases of information that have been collected by automated computer programs.**

What's a meta-search engine?

- **A meta-search engine doesn't create it's own database of information.**

- **A meta-search engine searches those of other engines and directories.**

- **By using multiple databases, the results are more comprehensive, but slower to receive.**

How does a search engine work?

- **"Spiders" go out and collect data from Web servers, the information is put into a large database that the user searches.**

- **A publisher of a Web page registers the site with the search engine.**

26

What's a Subject Directory?

- **Subject directories organize Internet sites by subject.**
- **Created by a human.**
- **Users conduct their searches by selecting a series of progressively narrower search terms.**
- **May contain a search element.**

How can I improve my use?

- **Learn how to use wildcards and Boolean operators.**

- **Wildcards allow you to search simultaneously for several words with the same stem.**

- **Boolean operators allow you to combine terms to broaden or narrow a search.**
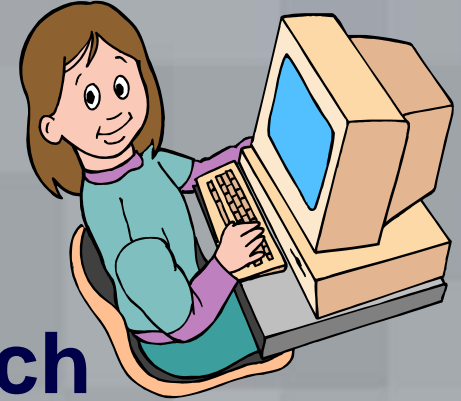
Wildcards

Wildcards are *truncation* **characters…**

- **The** *Asterisk* **(*) matches any number of characters**
- **The** *Question Mark* **(?) matches an exact number of characters**

How do I use a wildcard?

- **A wildcard is a special character that can be appended to the root of a word so you can search for all possible endings to that root.**

- **Example :**

  Doing a search on veget* would return the following results….

The Asterisk*

Veget* → Veget**able**
Veget**ables**
Veget**ation**
Veget**arian**

The Question Mark (?)

Psych????y $\rightarrow$ Psychology
Psychiatry

(but NOT *psychoanalysis*)

Logical (Boolean) Operators

Logical operators (and, or, not) can be used to create relationships between two or more search terms, with the effect of expanding or narrowing your search results.

Logical (Boolean) Operators

Using the Boolean operator **"and"** *restricts* results:

●Example:

- *The search string **frogs and toads** will only find articles that have **<u>both</u>** of these terms.*

- *Documents which have just one of the terms will be ignored.*

Logical (Boolean) Operators

Using the Boolean operator **"not"** *restricts* results to articles indexed under some search terms but not others

Example:

Tax not income ⟶ finds articles indexed under "tax" but not "income"

Logical (Boolean) Operators

Using the Boolean operator **"or"** *expands* results:

● Example :

– The search string **aerobics or exercise** will find articles that have ***either*** of these terms.

– You can broaden it even more by using or more than once

– Leaving a blank between words assumes or

Other Techniques

- **Searching for *exact* words or phrases: Use quotation marks - "Christmas trees"**
- **Ensuring *inclusion* of specific terms: Use a plus sign before the word or terms:**

    +television actors

- **Ensuring *exclusion* of specific terms: Use a minus sign before the word or terms:**

    -football shoes

A Practice Search

What is important about the Rain Forests?

- **Plan your search.**
- **What are the keywords, Phrases, Synonyms, and *Not* Words?**
- **Will you use a search engine, subject directory, metasearch engine?**

Kids Subject Directories

- **Yahooligans – www.yahooligans.com**

- **Ask Jeeves Kids - www.ajkids.com**

- **Kids Click - http://sunsite.berkeley.edu/KidsClick!/**

- **Lybrarian's Internet Index – www.lii.org**

Final Tips on Search Strategies

- **Decide whether a search engine or a directory will be best for your purpose.**

- **When using a search engine, be as specific as possible.**

- **Try different search engines.**

- **Read the "tips" and help files that are included with most engines.**

40

Now that I've found the site.....

...how do I know if it is any good?

It's a "S. N. A. P."

- **Source**
  - *Who is responsible for the site?*
- **Nature**
  - *Why does the site exist?*
- **Appearance**
  - *How does it look and navigate?*
- **Page Content**
  - *Does it seem correct? Mistakes?*

"Source" (SNAP)

- **Who is the author? (Hint: Check the URL – e.g.; ~smith (a person), .com, .gov, .edu, .org)**

- **What are his/her credentials, qualifications, or areas of expertise?**

- **Is there a means of communicating with the author or Webmaster? (e-mail, phone number, etc.)**

- **When was it last updated?**

"Nature" (SNAP)

- **Is the purpose to provide:**
  - *research and scholarly information?*
  - *educational or factual information?*

  Or

- **Is the purpose to:**
  - *entertain you?*
  - *persuade you?*
  - *sell you a product?*

44

"Nature" (S**N**AP) ...continued

Take time to thoroughly explore the Web site to determine if the information is:

- **Subjective (biased or opinionated)**
- **Objective: Factual or Mixed**

"Appearance" (SNAP)

- **Is the site well maintained?**
- **Are links current and working or do they lead to outdated pages and/or error messages?**
- **Is the site clearly organized, easy to read, use, and navigate?**

"Page Content" (SNAP)

- **Is the information supported by other sources?**

- **Are mistakes evident?**

- **Are Help and Search Tips available?**

- **If site is large, is there a search capability that is easy to use and understand?**

REMEMBER....

- *Anyone* **can create a Web site**
- *No one* **may have evaluated the quality or accuracy of the information found on the site before you came across it**
- **The vast majority of Web sites are created by "*non-experts*".**

48

Now that I have collected all this...
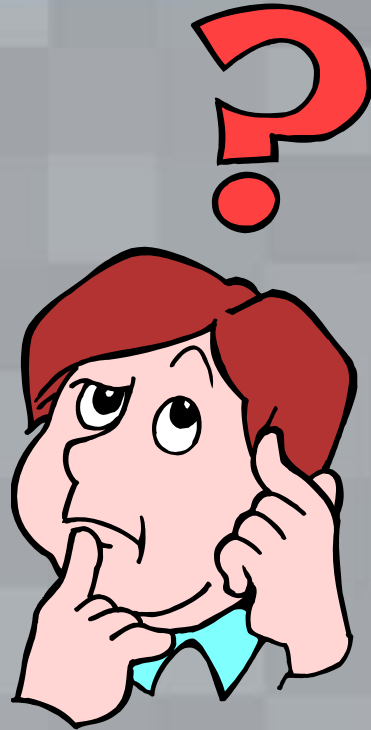
…how do I organize, sift, synthesize and report?

Treasure Hunting for Notes

- **Scanning resources for keywords and related words**

- **Once found ask, "Does this sentence answer the question?" Is it of value?**

- **Read each word and note only the words that are valuable.**

- **Summarize and add written comments to the notes.**

Google Toolbar

http://toolbar.google.com/

- **Google Pulldown**
  - *Groups, Images, Directory, News, etc.*

- **Search Site**
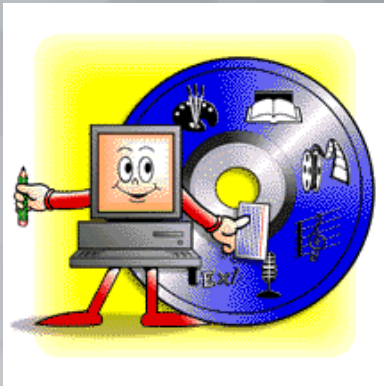 - *Enables you to search within a large site*

Google Toolbar

- **Page Info**
  - *Cached Snapshot, Similar Pages, Backward Links*

- **Highlight**
  - *Terms in the search field*

Collecting the Treasure

- **What tool do we give students to keep track of their collections?**

Research Assistant for Students (and Teachers!) with Bibliography Generator
http://www.essdack.org/researchasst/

eGems at Gemteq Software
http://www.egems.com

Collecting Treasures

- **CCCOE's Research Tool**
  www.cccoe.net/research

Synthesizing Information

- **Develop**
- **Compose**
- **Design**
- **Forecast**
- **Invent**
- **Pretend**
- **Predict**

- **Create**
- **Publish**
- **Devise**
- **Construct**
- **Write**
- **Build**
- **Formulate**

Product/Answer

- **Newscast**
- **Play/Skit**
- **Timeline**
- **Ad Campaign**
- **Newsletter**
- **Brochure**
- **Children's Book**
- **Flip Chart**

- **Diorama**
- **Poster**
- **Video**
- **Debate**
- **Poem**
- **Letter**

Rubric Development

- **Complex tasks require multidimensional measurement**
- **Multiple choice tests are not sufficient**
- **Giving the rubric at the beginning forces students to think clearly about what you think is important.**
- **Students might revise their task after thinking about your evaluation.**
- **Use a tool like Rubistar - rubistar.4teachers.org/**

Bibliographies

For a book:
Author's name, last name first. <u>Title of book,</u> Copyright date.
     author   title   copyright date
       | | |

Landau, Elaine. <u>Sea Horses</u>. 1999.

For an article from a print encyclopedia:
The subject you looked up, in quotation marks.
<u>Full title of encyclopedia,</u> Copyright date.
subject   title of encyclopedia   copyright date
   | | |

"WWII" <u>The World Book Encyclopedia</u>. 2000.

Bibliographies

For an article from an encyclopedia on CD-ROM:
The subject you looked up, in quotation marks.
<u>Full title of encyclopedia</u>, Copyright date. CD-ROM.
  subject   title of encyclopedia   date CD-ROM
      | | | |
"Dog." <u>Encarta Encyclopedia</u>. 1999. CD-ROM.

For an article from the World Wide Web:
Name of the author, if you can find it, last name first.
Title of the article, in quotes. <u>Title of the home page,</u> if available
Date visited. First part of the http address, in brackets.
  title of article title of homepage   date of your visit
       | | |
"Cheetah." <u>The Cyber Zoomobile</u>. 23 November 1998
<http://www.primenet.com/>.

Thank You

Doug Prouty - CCCOE