common sense
media

Crawling the Web
grades 6-8
Lesson Plan

Essential Question: How can you best use search sites to help you find the information you need?

Learning Overview and Objectives

Overview: Faced with a large and ever-changing array of options about how to find information they need, students learn to make informed choices about which search sites to use for different purposes. They also learn to use multiple search tools to get the best results.

As a class, students review the **Three-Way Search Student Handout** and learn the names and features of the three major types of search sites: search engines, directories, and meta-search engines. They then go on to sample and compare the different search sites available within each category. In groups, they investigate assigned search sites and answer questions about them on the **Compare Your Hits Student Handout**. Students then print out and post sample search results, and compare their own search sites to those of other groups.

> ### objectives
>
> *Students will:*
> - Understand the differences between search engines, directories, and meta-search engines
> - Evaluate different types of search sites by investigating the features of one and then comparing and contrasting it with others
> - Discover that trying out more than one search site can be the most effective way to search

Materials and Preparation

Materials
- **Three-Way Search Student Handout**
- **Compare Your Hits Student Handout**
- Paper and colored markers
- Tape or tacks to post students' work

Preparation
- Copy the two-page **Three-Way Search Student Handout**, one for each student
- Review the **Three-Way Search Student Handout** and be prepared to guide students through the three major types of search tools
- Copy the **Compare Your Hits Student Handout**, one for every three or four students
- If groups of students will not have access to their own computers, type the same keywords into several different search engines and print out the first page of results from each

Parent Resources
- Send home the **Searching Parent Tip Sheet**

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Key Vocabulary

- **Search Site:** Any website that helps you search the Web for the information you want

- **Search Engine:** A site that uses computer programs to search for information on the Web

- **Directory:** A site that uses people to search the Web and put together information on different subjects

- **Index:** A place where information is stored and organized. You can also index, or organize in a list, information after you find it

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teaching plans

Introduce

ASK *Question…*

- *What search sites have you used?* (Students may name Google, Yahoo, or Bing, among others.)

- *What do you like about each site? What made you decide to use it?*

   Sample responses:
   - *All my friends use it*
   - *I like the way it looks*
   - *I usually get the information I need when I use it*
   - *I didn't know I had a choice*
   - *Results are easy to read*

Record the student responses so you can refer to them at the end of the lesson.

DISCUSS with students that search sites have different benefits and drawbacks, so it is important for them to make informed decisions about which ones to use depending on the situation. Explain that they will now look at some search sites to find out how each one works and how they are different from one another.

Teach 1: Three-Way Search Student Handout

DISTRIBUTE the *Three-Way Search Student Handout*.

GUIDE students through *"Do you know how a SEARCH ENGINE works?"* Review the three programs a search engine uses to collect information from webpages, index the information, and match the webpages to their keyword searches. Though optional, you are encouraged to model the three types of online searches for the class. Conduct searches with the sites suggested below and show students what you find.

REVIEW the Key Vocabulary with students.

ASK

- *Why do you think the first program is called a spider?* (Because it crawls around the Web, exploring webpages and their links and collecting information.)

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- *Can you think of another good name for it?* (Students may suggest a snake, which also crawls, or a dog, which fetches things.)
- *Why do you think the spider has to keep crawling the Web, over and over again?* (Students should understand that information on the Web is always growing and changing, and the spider needs to constantly check for updates.)

READ through *"Do you know how a DIRECTORY works?"* with students. Point out that directory editors, like spiders, are always looking for new information on the Web. However, they can't look at quite so much as spiders, or do it so quickly. Explain to students that editors sometimes add new subject categories and sites based on the number of information requests users make for certain subjects.

Conduct a search for the class in either or both of these kid-friendly online search engines: Factmonster and Quintura. You could search the term "search engine," or something else of interest to the class. Project the results for class discussion.

ASK

- *How is the information in a directory different from the information retrieved by a search engine?* (Students should understand that people, not computer programs, select the sites that are included in directories.)
- *What are some of the advantages and disadvantages of using a directory instead of a search engine?*

  Sample responses:
  - **Advantage:** *People carefully choose the sites in a directory, so they might be better sites*
  - **Disadvantage:** *The editors who create directories can't index everything on the website, so they might miss some relevant sites*

Conduct a search for the class in either or both of these kid-friendly online directories: Yahoo (kid directory) and ipl2. You could search the term "directories," or something else of interest to the class. Project the results for class discussion.

REVIEW *"Do you know how a META-SEARCH ENGINE works?"* with students. To help them understand the difference between a "narrow" topic and a broader one, provide them with the following examples of keywords they might use for each type:

Broad	Narrow
Abraham Lincoln	Abraham Lincoln 1860 Cooper Union Speech
World Cup	2010 World Cup United States-England match

Tell students that they will have a chance to investigate some search sites on their own.

Conduct a search for the class in either or both of these kid-friendly online meta-search engines: Dogpile and MetaCrawler. You could search the term "meta-search engine," or something else of interest to the class. Project the results for class discussion.

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Teach 2: Compare Your Hits

ARRANGE students into groups of three or four and give each group one copy of the **Compare Your Hits Student Handout**.

ASSIGN to each group one of the search sites mentioned on the **Three-Way Search Student Handout**. To ensure that different groups sample each different type of search engine, you may wish to assign the following sites in order. The number of sites used will vary depending on the size of your class, but make sure to assign at least the first three.

EXPLAIN to students that they will be looking at some of the features of their assigned sites and answering questions about them. They will try out two searches, see what results or "hits" they get, and then compare and contrast the results from different sites.

1. Google (search engine)
2. Yahoo Directory (directory)
3. Dogpile (meta-search engine)
4. Ask (search engine)

5. Dmoz (directory)
6. MetaCrawler (meta-search engine)
7. Quintura for Kids (search engine)
8. Yahoo Directory for Kids (directory)

Have each group of students follow these steps, allowing a total of 10 to 15 minutes:

• **READ** through the **Compare Your Hits Student Handout**

• **DRAW** their site's logo, or print it out and cut and paste it onto their handouts

• **EXPLORE** their assigned sites and answer the first two questions on the handout. (Students can return to the **Three-Way Search Handout** for help if they are not sure which type of site they have.)

• **SEARCH** for the keywords on their search sites

• **PRINT OUT** or copy the main items on the first page of search results

INVITE students to post their handouts, with results below them, on a bulletin board, blackboard, or wall. Give students 5 to 10 minutes to look at the results posted by other groups.

DISCUSS the similarities and differences among the results from each search site. Ask students to identify one thing they liked about the site they investigated, and one thing they prefer about the results from another site visited by their classmates.

Wrap Up and Assess

You can use these questions to assess your students' understanding of the lesson objectives.

ASK

• *How do search engines and directories differ?* (Search engines are indexed by computer programs, and directories are indexed by people. Search engines usually have many more sites indexed than do directories.)

• *What was one feature you liked about the site you visited?* (Have students refer to the data they recorded on the **Compare Your Hits Student Handout**.)

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• *Why is it a good idea to try more than one search site?* (Because no one search site covers the entire Web. Also, search sites offer different search options.)

REVISIT the questions you asked students in the lesson introduction. *(What search sites have you used? What do you like about each site? What made you decide to use it?)* Ask them to respond to the same questions again.

REFLECT on the value of trying the same search on the three different types of sites. Students should begin to grasp that different types of sites – and different sites within each type – may be more effective for different kinds of searches. They should understand that no one site, no matter how popular, offers the "definitive" search results. They can and should experiment with them to learn how to make informed choices about which search sites to use.

Extension Activity

Students practice being directory "editors." Remind students that one of the jobs of a directory editor is to place websites in different categories, depending on the information they contain. Invite students to choose a simple keyword to submit to a search engine that relates to a topic they are learning about in your class. Have them click through to each of the first five search returns they believe are high-quality sites. Ask students to assign each site to one of the subject categories from a popular directory, such as Yahoo Directory.

Homework

Have students make a three-part "blueprint" showing the three steps a search engine uses to collect information from the Web, index information, and match the information to keywords. The three parts of the blueprint should show: (1) an example of a word that they are searching, (2) what happens when that word is searched, and (3) the results or "hits" they get. When they are finished, they should describe to their parents how the three different types of search engines work. They should also explain how searches are performed in the blueprint that they drew.

Alignment with Standards – National Educational Technology Standards for Students© 2007

(Source: International Society for Technology in Education, 2007)

3. Research and Information Fluency

    a. plan strategies to guide inquiry

    b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media

    c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks