# Meta Search Engines

**Unit:** Technology

**Problem Area:** Use Internet Search Techniques

**Lesson:** Meta Search Engines

## Student Learning Objective.

Instruction in this lesson should result in students achieving the following objective:

**Describe meta search engines and search statements.**

## Resources.

The following resources may be useful in teaching this lesson:


E-unit(s) corresponding to this lesson plan. CAERT, Inc. http://www.mycaert.com.

Fisher, Tim. "The Top Web Search Tricks Everyone Should Know," *Lifewire*. Accessed June 12, 2019. https://www.lifewire.com/web-search-tricks-to-know-4046148.

Gil, Paul. "The Best Search Engines of 2019," *Lifewire*. Accessed June 12, 2019. https://www.lifewire.com/best-search-engines-2483352.

Pryadarshini, Manisha. "12 Google Alternatives: Best Search Engines To Use In 2019," *FOSSBYTES*. Accessed June 12, 2019. https://fossbytes.com/google-alternative-best-search-engine/.

"Seven Ways to Find What You Want on the Internet," *Mind Tools*. Accessed June 12, 2019. https://www.mindtools.com/pages/article/internet-searching.htm.

Wyderka, Trish. "Metasearch Engines: Efficient Searching in a Centralized Location," *SourceCon*. Accessed June 12, 2019. https://www.sourcecon.com/metasearch-engines-efficient-searching-in-a-centralized-location/.





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## Equipment, Tools, Supplies, and Facilities

- ✓ Overhead or PowerPoint projector
- ✓ Visual(s) from accompanying master(s)
- ✓ Copies of sample test, lab sheet(s), and/or other items designed for duplication
- ✓ Materials listed on duplicated items
- ✓ Computers with printers and Internet access
- ✓ Classroom resource and reference materials

## Key Terms.

The following terms are presented in this lesson (shown in bold italics):

- algorithm
- bot
- Internet
- meta search engine
- query
- search engine
- search engine algorithm
- search engine index
- search statement
- web crawler
- web spider
- world wide web

## Interest Approach.

Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

> *Tell your students: "Assume you were awarded a grant that would pay for the class to travel to study business practices in China. You need to gather all the information you can possibly find about China in order to prepare for the trip. What methods would you use to gather the needed information?" Most students will probably go to Google to begin their search. Ask them if there are any other search engines they might use, or any special ways they might conduct a search for information about culture, business practices, etc.*



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# CONTENT SUMMARY AND TEACHING STRATEGIES

**Objective:** Compare a search engine to a meta search engine. Develop a search statement appropriate for use with a meta search engine.

**Anticipated Problem:** What is a search engine? What is a meta search engine? What is a search statement?

I. Meta Search Engines

The ***internet*** is an electronic communications network connecting computer networks around the globe. The ***World Wide Web (WWW)*** is a network of interlinked pages that can be accessed over the Internet. The Web is the most famous part of the Internet. The Web allows documents to be connected to other documents through hypertext links. The world wide web provides countless opportunities for users to conduct research and share findings. The advancement of the Internet has exponentially increased the amount of information available and the speed with which it can be accessed.

A. SEARCH ENGINE: A ***search engine*** is a service that searches the World Wide Web (WWW) for information that best matches an internet user's query. A ***query*** is a question that allows the user to extract or retrieve targeted information from a database. A user enters keywords or phrases into a search engine and receives a list of Web content results. That list includes websites, images, videos or other online data. Today, the most popular and well-known search engine is Google. Another popular search engine is Bing.

1. A ***search engine index*** is a database that holds a list of all the words on all the web pages that the search engine has found. The primary purpose of a search engine index is to find the most relevant links for its users, and to do so as quickly and easily as possible. Think of a search engine as a librarian. A user asks the librarian to find a certain book, i.e., a user makes a query. The librarian then looks in the library (the search engine index). Who put the books in the library? The web crawlers.
2. A ***web crawler (web spider, bot)*** is an automated software application that gathers information from webpages and then organizes that information in a search index. Web spiders crawl from link to link and bring data about those webpages back to the search engine's servers. Crawlers take inventory of every word found on hundreds of billions of webpages. All the information gathered by the web crawlers is contained in the search engine index.

B. META SEARCH ENGINE: A ***meta search engine (metasearch engine)*** is a search tool that queries different search engines and combines the results from all of them. A meta search engine is technically not an actual search engine because



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it does not gather data itself but relies on the data gathered by real search engines. Instead of using each individual search engine separately, a user can enter a single query and obtain results from multiple sources.

1. The obvious benefit of using a meta search engine is that the user gets more information than the user would get from a standard search engine. Using a meta search engine also saves time by eliminating the need to conduct multiple searches from several web search engines.
2. No two meta search engines are alike because each search engine uses different criteria and search functions. An ***algorithm*** is a sequence of well-defined instructions for a computer. A ***search engine algorithm*** is a set of rules that the search engine uses to determine the significance of a web page. Each search engine has its own unique algorithms. The differences in the algorithms explain why a search query yields different results, depending on what search engine is used.
3. Popular meta search engines include Yippy, Dogpile, Mamma, Creafy, StartPage, Metacrawler and Draze. Different meta search engines specialize in different areas. Mamma is the best for news, videos and images. Vroosh is used for country-based results. TurboScout is the biggest meta search engine available and searches the results from other meta search engines.

C. SEARCH STATEMENT: A ***search statement*** is an information query composed of appropriate terms in an appropriate form for the search engine. When writing a search statement, users should consider the topic of their query and the keywords related to the topic. A typical search statement is a short phrase, usually at least three words in length, with the most important word listed first. Using the + sign and the – sign before words will force their inclusion or exclusion from the search. Using lowercase letters will get more hits among the search terms. Using quotation marks before and after certain connected words will force the engine to search for a specific phrase (e.g., "George Washington"). Users can practice writing search statements for various search engines to see how the search results may differ, depending on the search engine and the phrasing of the search statement. Any search statement can be modified to get better results.

**Teaching Strategy:** *Many techniques can be used to help students master this objective. Use VM–A to generate a discussion regarding about effective online research. You may start the discussion by asking students how they sort through the volume of information found online when conducting research. Use VM–B to discuss the composition of a search statement. Assign LS–A so students may practice using a meta search engine.*

## Review/Summary.

Use the student learning objective to summarize the lesson. Have students explain the content associated with the objective. Student responses can be used to determine whether the objective needs to be reviewed or taught from a different angle. If a textbook is being used, questions at the ends of chapters may also be included in the Review/Summary.



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## Application.

Use the included visual master(s) and lab sheet(s) to apply the information presented in the lesson.

## Evaluation.

Evaluation should focus on student achievement of the objectives for the lesson. Various techniques can be used, such as student performance on the application activities. A sample written test is provided.

## Answers to Sample Test:

### Part One: Matching

1. d
2. f
3. e
4. c
5. b
6. a

### Part Two: Completion

1. search engine
2. spiders or bots
3. search engine index
4. meta search engine
5. Internet
6. world wide web

### Part Three: Short Answer

The user gets more information than the user would get from a standard search engine. Using a meta search engine also saves time by eliminating the need to conduct multiple searches from several web search engines.



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**Sample Test**

Name _____

# Meta Search Engines

## Part One: Matching

***Instructions:*** **Match the term with the correct definition.**

a. search engine index
b. query
c. meta search engine
d. search engine algorithm
e. web crawler
f. search statement

_____1. A set of rules that the search engine uses to determine the significance of a web page

_____2. An information query composed of appropriate terms in an appropriate form for the search engine

_____3. An automated software application that gathers information from webpages and then organizes that information in a search index

_____4. A search tool that queries different search engines and combines the results from all of them

_____5. A question that allows the user to extract or retrieve targeted information from a database

_____6. A database that holds a list of all the words on all the web pages that the search engine has found

## Part Two: Completion

***Instructions:*** **Provide the word or words to complete the following statements.**

1. A service that searches the World Wide Web (WWW) for information that best matches an internet user's query is a(n) _____.

2. Web crawlers are also referred to as _____.



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3. The primary purpose of a(n) _____ is to find the most relevant links for its users, and to do so as quickly and easily as possible.

4. A _____ does not gather data itself, but relies on the data gathered by real search engines.

5. An electronic communications network connecting computer networks around the globe is the _____.

6. A network of interlinked pages that can be accessed over the Internet is called the _____.

## Part Three: Short Answer

***Instructions:*** **Answer the following.**

What are two benefits of using a meta search engine?



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VM–A

# SEARCH ENGINE

A search engine is a service that searches the World Wide Web (WWW) for information that best matches an internet user's query.



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# SEARCH STATEMENT

When writing a search statement, users should consider the topic of their query and the keywords related to the topic.




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LS–A

Name _____

# Meta Search Engines

## Purpose

The purpose of this activity is to explore meta search engines by creating a search statement.

## Objective(s)

1. Pick a topic that you would like to learn more about.
2. Review the guidelines for creating a meta search statement.
3. Choose two meta search engines discussed in this lesson or others not included in this lesson, with your instructor's permission.
4. Compare search results for the two meta search engines.

## Materials

- lab sheet
- pen/pencil
- device with internet access

## Procedure

1. Pick a topic that you would like to learn more about. You may choose a topic you are already researching for another class. Record the topic chosen here:

2. Consider the key words related to your topic and create a meta search statement. Record your meta search statement here:



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3. Choose two meta search engines discussed in this lesson. Options include Yippy, Dogpile, Creafy, StartPage, Metacrawler and Draze. You may choose another meta search engine with your instructor's permission. Record the two meta search engines chosen here:

4. Compare search results for the two meta search engines. Describe the similarities and differences here:

| Meta Search Engine Name: | Meta Search Engine Name: |
|---|---|
| Top 3 Search Results:<br>1.<br>2.<br>3. | Top 3 Search Results:<br>1.<br>2.<br>3. |
| Similarities in search results from the two meta search engines: | |
| Differences in search results from the two meta search engines: | |
| Now conduct the same search in a common web search engine such as Google. Did you get different results? | |
| Did you like one search engine more than the other? If so, explain why. | |

5. Share your findings with your classmates and instructor.
6. Share your lab sheet with your instructor.



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