The Key to Keywords

Essential Question

Which keywords will give you the best search results?

Lesson Overview

Students learn strategies to increase the accuracy of their keyword searches. They compare the number and kinds of sites obtained and make inferences about the effectiveness of the strategies.

Working in pairs, students use the **Fetch! Student Handout** to answer an assigned question. They use one, two, then multiple keywords, and discover that when it comes to keyword searches, more words are better than one. Using the **Doggy Data Student Handout**, students then devise their own search strategies to find information, using multiple keywords, synonyms, and alternative words and phrases.

Learning Objectives

Students will be able to ...

- experiment with different keyword searches and compare their results.
- refine their searches by using multiple words, synonyms, and alternative words and phrases.
- draw inferences to explain their search results.

Materials and Preparation

- Copy the **Fetch! Student Handout,** one for every two students.
- Copy the **Doggy Data Student Handout,** one for every two students.

Family Resources

- Send home the **Smart Searching Family Tip Sheet (Elementary School)**.

Estimated time: 45 minutes

Standards Alignment –

Common Core:

grade 3: RI.1, RI.4, RI.10, RF.4a, W.4, W.7, W.10, W.1a, W.1b, W.1c, W.1d, W.3, W.4, W.6, L.3a, L.6

grade 4: RI.1, RI.4, RI.10, RF.4a, W.4, W.7, W.10, W.1a, W.1b, W.1c, W.1d, W.4, W.6, L.3a, L.6

grade 5: RI.1, RI.4, RI.10, RF.4a, W.4, W.7, W.10, W.1a, W.1b, W.1c, W.1d, W.4, W.6, L.3a, L.6

NETS·S: 3b, 3c, 3d

Key Vocabulary –

keywords: the most important words related to a subject, which you type into a search engine to find the information you want

precise: clear and exact

results page: the screen showing what a search site found in response to your keyword search

synonyms: two or more words with the same meaning or nearly the same meaning

alternative: a different way to say or do something

Warm-up *(10 minutes)*

To help students understand that precisely worded descriptions produce the best search results, start out with the following activity.

- **PLACE** several small items on a desk at the front of the room, behind a book or other barrier that prevents students from seeing them. (Use different types of objects, such as a tape dispenser, an apple, and a computer mouse.)
- **INVITE** a student volunteer to come to the front, look at the objects, and describe one of them to the class, without using any of the words in the item's name. (Students describing a tape dispenser, for example, could not use the words *tape* or *dispenser*.)
- **REPEAT** the exercise at least three times. (Students who have seen the items can't guess!) Afterwards, encourage students to think about what they learned from the game.

ASK:

How do you use words when you search the Internet?	Students should know that they input keywords into a search engine.

DEFINE the Key Vocabulary term **keywords**.

DISCUSS with students how the game they played is like doing Internet searches: A search engine uses computer programs to look for information on the Internet. However, users need to tell the search engine what to look for. That's what keywords are used for.

DEFINE the Key Vocabulary term **precise.**

EXPLAIN that in order for students to get the best search results, they need to choose their keywords carefully. The most precise keywords will yield the best results.

teach 1

Fetch! *(20 minutes)*

GROUP students into pairs. If your class has access to a limited number of computers, two or more pairs may take turns using one computer.

DISTRIBUTE the **Fetch! Student Handout**, one for each pair of students.

ASK:

How do you think search engines, like Google, work?	Search engines crawl the Internet, gathering information about millions of websites. At the click of a button, a search engine sorts through what it "knows" and lists the sites it "thinks" you want. You tell the search engine what you want by using keywords.

DEFINE the Key Vocabulary term **results page**.

EXPLAIN that when it comes to keyword searches, it is important to choose accurate and precise words. Let students know that adding more of these keywords can help narrow a search. A search for a single word may

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"fetch" a million sites to display on their results page. Adding more words fetches fewer sites that are closer to what you need. Another tip is to put words that belong together (such as a phrase, a full name, or lyrics of a song) in quotation marks. The search engine looks only for instances where these words are lumped together.

TELL students they will conduct an experiment that involves finding information by using more and more keywords.

ASSIGN a search engine for students to use in this activity, such as Google, Yahoo, or Bing. Have all students use the same search engine, so that the only variable is the keywords they choose. Then assign each pair of students one of the following questions to answer. Each question should be assigned to at least two pairs of students. Have them write down their assigned question on their **Fetch! Student Handout**.

- What foods are toxic to dogs? (Name four)
- What breeds of dogs are the smartest? (Name four)
- What jobs do dogs do for people? (Name four)
- What are some of the smallest and largest dog breeds? (Name two of each)

GUIDE pairs of students through a multi-step search to find the answers to their question. Have each pair complete the following steps, allowing 10-15 minutes:

- **SEARCH** for the answer to their question using a single keyword – for example, *dog*.
- **RECORD** the total number of sites included in the search results. (The location of this number varies from search engine to search engine, although it is always located somewhere on the first search results page.)
- **INVESTIGATE** the top three sites on their results page to see if they can quickly find the answers to their questions.
- **REPEAT** the previous three steps, using two keywords. If the answers to their questions still do not appear in the first three search results, students should continue to add additional keywords until they find what they are looking for.
- **WRITE** the answers to their question on their handout. Students should also note how many searches they had to do to find the answers, and how many keywords they used. Finally, they should write down the names of two sites from which they got answers.

INVITE pairs of students to join with others who answered the same question. Encourage them to compare and contrast the keywords they used and the sites where they found their answers. Explain to students that their answers may vary slightly, because there are more than four correct answers to each question.

teach 2

Doggy Data *(10 minutes)*

GROUP students into pairs, or keep them in the pairs established for the previous section of the lesson. If your class has access to a limited number of computers, two or more pairs may be combined into larger groups.

DISTRIBUTE the **Doggy Data Student Handout**, one for each student.

EXPLAIN to students that they will now see how quickly they can hunt down specific information about dogs. Have them read through the questions on the **Doggy Data Student Handout**, and choose one group member to record information on the handout. In addition to the answers, students will record the keywords they used to search, and at least two sites where they found their answers.

CHALLENGE students to find the answers to the three questions in as few searches as possible. Remind them

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that they will need to choose their keywords carefully, using words that are accurate, relevant, and precise. Remind students that they should group terms that go together in quotation marks (e.g., "Fancy Feast"). Have all groups begin their searches at the same time.

DEFINE the Key Vocabulary terms **synonym** and **alternative**.

ASSIST students as needed with the special instructions in Question 3. For Question 3, they should include in their keywords one or more synonyms for the word *strong*. (If students have difficulty coming up with synonyms, suggest *powerful* or *sharp*.)

INVITE each group to raise their hands when they have answered all the questions and filled in all the required information. When all groups are finished, have recorders take turns reading aloud the answer, keywords, and websites for one of their three questions.

ENCOURAGE students to discuss how and why they chose the keywords for their searches.

closing

Wrap-up *(5 minutes)*

You can use these questions to assess your students' understanding of the lesson objectives. You may want to ask students to reflect in writing on one of the questions, using a journal or an online blog/wiki.

ASK:

What are keywords?	Keywords are the most important words related to a subject, those which you type into a search engine to find the information you want.
Is it better to use more than one keyword in a search? Why or why not?	When you use more words, you get fewer sites in your search results, but they are more likely to contain what you're looking for. Remind students that though more words are usually better, it is important that the words you type in be precise and relevant to the subject you are researching.
How does using synonyms or alternative phrases help when submitting a search?	Sometimes websites use different words or phrases to describe the information you are looking for. A synonym for a word may bring better results than the word itself.

The Key to Keywords

Directions

Find answers to the questions below. Use precise keywords to get the best results. To make sure your answers are correct, recheck the facts by finding them on at least two sites. Write down the names of the two sites where you found the answer.

1. How many teeth does an adult dog have?

Answer: _____

Keywords used: _____

Two Sites: 1) _____ 2) _____

2. What is the most popular dog breed in the United States?

Answer: _____

Keywords used: _____

Two Sites: 1) _____ 2) _____

3. Which is the strongest of a dog's five senses?

Try this! Use a keyword that has a similar meaning to "strong."

Answer: _____

Keywords used: _____

Two Sites: 1) _____ 2) _____

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The Key to Keywords

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Directions

In some ways, a search engine is like a well-trained dog. It will fetch what you want, but only if you use the right commands. Although single words are better commands for dogs, more words are better for search engines.

Our question: _____

Our search site: _____

Searching with ONE keyword

Number of search results: _____

Did you find the answer to your question in the first three results?

☐ Yes   ☐ No

Searching with TWO keywords

Number of search results: _____

Did you find the answer to your question in the first three results?

☐ Yes   ☐ No

Searching with _____ keywords

Number of search results: _____

Did you find the answer to your question in the first three results?

☐ Yes   ☐ No

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What keywords did you use?

Round 1: _____

Round 2: _____

Round 3: _____

How many searches did it take to find the answer? _____

How many keywords did it take to find the answer? _____

Our answer: _____

_____

Two sites that had the answer I was looking for were:

Site 1: _____

Site 2: _____

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The Key to Keywords

1. _____ are the most important words related to a subject. You type these into a search engine to find the information you want.

    a) Passwords

    b) Keywords

    c) Crosswords

2. **Mike is getting ready to search for information about gardening. Which set of keywords will NOT help Mike find information about gardening?**

    a) planting, season, water

    b) fire, forest, horse

    c) temperature, soil, seeds

3. **Keena wants to find information about great restaurants in Florida. Which keywords could she use to search?**

    a) best restaurants Florida

    b) top eats Florida

    c) a or b

The Key to Keywords

1. _____ are the most important words related to a subject. You type these into a search engine to find the information you want.

a) Passwords

b) Keywords

c) Crosswords

Answer feedback
The correct answer is **b**. Keywords are the most important words related to a subject. Different keywords will give you different search results online.

2. Mike is getting ready to search for information about gardening. Which set of keywords will NOT help Mike find information about gardening?

a) planting, season, water

b) fire, forest, horse

c) temperature, soil, seeds

Answer feedback
The correct answer is **b**. Keywords should relate to the information you are looking for.

3. Keena wants to find information about great restaurants in Florida. Which keywords could she use to search?

a) best restaurants Florida

b) top eats Florida

c) a or b

Answer feedback
The correct answer is **c**. You can use different keywords to find similar information online.

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