

Smart Searching

Grade: 9-12

Topic: Research

Unit: Research Fundamentals



Overview



© Prostock-studio/stock.adobe.com

In this lesson mini, students develop comprehensive digital research skills. They begin by learning essential vocabulary related to online searching and understanding the difference between primary and secondary sources. Students then practice generating effective keywords to refine their search queries, applying these skills to research historical figures. Finally, they conduct in-depth online research using advanced search techniques, evaluate source reliability, and present their findings in a digital format. Throughout the lesson, students apply their new skills to write essays and create presentations, enhancing their ability to gather, synthesize, and communicate information effectively in the digital age.

Ideas for Implementation

- Social Studies
- English
- Humanities
- Writing labs
- Interdisciplinary collaboration

Key Vocabulary & Definitions

- **boolean operator** (noun): a word (such as AND, OR, or NOT) that can be used in search engines to combine or exclude keywords for more precise and targeted search results
- **database** (noun): a collection of information, or data, usually organized and stored digitally, as in a computer system, and available for rapid search and retrieval
- **filters** (plural noun): options in a search engine to refine and narrow down results further by other factors such as date or source type (e.g., news, images, videos)
- **keyword** (noun): a significant word or phrase used in searching for information online
- **primary source** (noun): an original document or firsthand account created during the time period being studied that has not been interpreted or edited by others
- **reliable source** (noun): a source that is credible and trustworthy
- **scholarly article** (noun): a peer-reviewed article written by experts in the field
- **search engine** (noun): a program used to search for and identify items in a database, especially on the Internet, that correspond to keywords or other criteria specified by the user
- **secondary source** (noun): an article, a report, or another reference work that discusses, analyzes, or interprets primary sources or

firsthand accounts but is not itself a firsthand account

- **unreliable source** (noun): a source that is not trustworthy due to factors such as bias, outdated information, lack of author expertise, or absence of evidence to support claims

Authentic Learning Extensions

Authentic learning opportunities for smart searching involve real-world experiences and practical applications that help high school students understand research concepts meaningfully. Here are some examples:

- **Collaborative Research Project:** Assign students to small groups and task them with planning a hypothetical school event or community service project. They must use their research skills to gather information on costs, logistics, potential sponsors, and relevant regulations.
- **Digital Literacy Workshop:** Have students create and lead a workshop for younger students or community members on effective online research techniques and identifying reliable sources.
- **Library Exploration Sessions:** Schedule a visit to the school library or local library, where students can explore the search engines and databases available specifically to your student body. In addition, libraries give students opportunities to explore non digital sources, such as maps and books. Librarians can assist students by teaching them how to research using different sources effectively.
- **Real-World Connection:** Create a list of ways students can use this information in their everyday lives. Examples can include finding song lyrics, researching hobbies, or finding information about their favorite celebrities. Choosing a topic with real-life relevance increases engagement and motivation. Expand this concept by challenging students to (a) research a local

community issue and prepare a presentation for a city council meeting, (b) investigate career paths and create a detailed report on educational requirements, job prospects, and industry trends, or (c) develop a fact-checking project in which students research and verify claims made in social media or news articles.

Activity 1:

Digital Research Vocabulary



>40
MINUTES





By the end of the activity, students will be able to explain the meanings of terms related to digital research, distinguish between primary and secondary sources, and demonstrate basic skills in summarizing information from primary sources.

Materials and Resources

MATERIALS

- Whiteboard and display
- Writing utensils

RESOURCES

-  Britannica videos (e.g., How to Clean Up Earth's Oceans)
<https://school.eb.com/levels/high/assembly/view/313221>
-  Mini Glossary graphic organizer (two per student and one for teacher display)
-  Summarization Note-Taking graphic organizer (one per student and one for teacher display)
-  T-Chart graphic organizer (one for teacher display)

Implementation

Prepare for the Activity: Divide the class into groups of three or four students and assign each group to watch a different video interview from Britannica School related to the current unit of study (see example in the Resources section). Then write the terms *Boolean operator*, *database*, *filters*, *keyword*, *reliable source*, *scholarly article*, *search engine*, and *unreliable source* on the board.

- ① Tell students that during today's activity they will learn how to use search engines effectively and distinguish between primary and secondary sources.
- ② Begin by introducing the vocabulary terms written on the board. Distribute the **Mini Glossary graphic organizer** to each student.
- ③ Model how to use the graphic organizer with the term *search engine*:
 - Vocabulary Word: *search engine*
 - Definition: *A program that searches for and identifies items in a database that correspond to keywords specified by users*
 - Word Associations: *Google, website, search bar, browse, information*
 - Sentence: *I use search engines all the time because they have every possible topic a person could think of.*
 - Drawing: [Draw a magnifying glass.]
- ④ Have students work in pairs to complete the graphic organizer for the remaining terms. After completion, ask for volunteers to share their work with the class.
- ⑤ Tell students that before they research a topic, they need to understand different types of sources. Introduce the

concepts of primary and secondary sources. Create a simple T-chart on the board, or use the **T-Chart graphic organizer**, with "Primary Sources" and "Secondary Sources" as column headers. Provide definitions for each:

- **primary source** (noun): an original document or firsthand account that has not been interpreted or edited by others
- **secondary source** (noun): an article, a report, or another reference work that discusses, analyzes, or interprets original documents or firsthand accounts but is not itself a firsthand account

- ⑥ Ask students to rephrase the definitions in their own words and share them with the class. As they share, add the definitions to the T-chart. Guide students in creating a list of examples for both types of sources and add them to the T-chart.
- ⑦ Distribute a copy of the **Summarization Note-Taking graphic organizer** to each student.
- ⑧ Have the students gather into groups based on the video interviews they were assigned to watch before the activity. Have each group analyze and summarize their assigned video, using the graphic organizer for support. Consider giving students the option to rewatch their assigned videos before analyzing and summarizing the content.
- ⑨ Have each group present their summaries to the class. Facilitate a discussion of how information in secondary sources (such as summaries) differs from information in primary sources (such as video interviews).
- ⑩ Invite students to participate in a small-group discussion, using the following guiding questions:
 - *What is an example of a primary source?*

- *What is an example of a secondary source?*
 - *What are peer-reviewed articles written by experts in the field?*
 - *What is an example of an unreliable source? A reliable source?*
 - *How do you define bias?*
 - *Why are video interviews considered primary sources?*
 - *What are some key factors one needs to consider when embarking on a research project?*
- ⑪ Conclude the activity by having students pair up and share one term they found interesting, challenging, or most useful for conducting research. Facilitate a brief class discussion on how these terms will improve their research skills.

Differentiation and Variations

Video Viewing: For the preparation step, provide students with the opportunity to watch the video twice in order to increase comprehension and engagement with the content presented. Consider asking students to first watch the video without taking notes and then watch the video a second time and answer the guiding questions. This approach benefits student learning by accommodating different processing speeds and allowing for deeper engagement with the material.

Primary and Secondary Sources: Ask students to pick a firsthand account of an important historical event and write a report on it. This benefits student learning as it promotes critical and analytical thinking.

Vocabulary One-Pager: Instead of using the Mini Glossary graphic organizer to practice important vocabulary from the activity, use the **Vocabulary One-Pager graphic organizer**. This differentiation supports student learning as it helps students build vocabulary by allowing them to create their own definitions by combining symbols, pictures, and phrases.

Collaborative Teaching

Parallel Teaching: For collaborative teaching and learning environments, this learning activity is well suited to a Parallel Teaching strategy. In this model, the class is divided into two groups, and each teacher delivers the same activity simultaneously to their group. This reduces the student-teacher ratio, allowing for more interaction and individualized attention. With smaller groups, students are more likely to participate actively and receive immediate feedback, which fosters a deeper understanding of the content and promotes a more engaging learning experience. Evidence suggests that small-group instruction leads to increased student engagement and improved academic outcomes.

- **Activity Introduction:** Both teachers simultaneously introduce the activity to their respective halves of the class. Each teacher explains that students will learn how to use search engines effectively and to distinguish between primary and secondary sources. They list the vocabulary terms on a whiteboard or other display for their group.
- **Mini Glossary:** Both teachers simultaneously lead this portion of the activity with their respective halves of the class. They each distribute the Mini Glossary graphic organizer. Both teachers model the process using the term *search engine* as an example, showing how to include the definition, word association, sentence, and drawing representing the term's meaning. Students then work in

pairs to complete the graphic organizer for the remaining terms. As students work, both teachers circulate within their groups, supporting student understanding and helping them create representations for each term.

- **Primary and Secondary Sources:** Both teachers lead a discussion of primary and secondary resources and guide students to complete the T-chart activity. They introduce definitions for both types of sources, ask students to rephrase them, and create lists of examples for each. Then both teachers distribute the Summarization Note-Taking graphic organizer, divide students into small groups, and instruct them to analyze a video interview (assigned before the activity) and create a summary to present to the rest of their half of the class.
- **Activity Wrap-Up:** Both teachers concurrently conclude the activity with their respective halves of the class. Both teachers then facilitate brief group discussions about how these terms will improve research skills. If time allows, they may bring both groups together for a quick whole-class share-out of key takeaways, synthesizing the learning from both halves of the class.