

Activity 1.1.2 Research and Documentation

PLTW

RESEARCH AND DOCUMENTATION

≡ The Power of Information

≡ Scavenger Hunt Research

≡ Scavenger Hunt Documentation

≡ Conclusion

The Power of Information

GOALS

RESOURCES

- Assess the integrity of information accessed on the web.
- Summarize and document credible web sources.

GOALS

RESOURCES

- [Effective Research](#)
- [Citing Sources](#)
- [Summarizing Guidelines](#)
- [Activity 1.1.2 Research and Documentation \(Downloadable PDF\)](#)

As you explore the world of science and medicine, you will need an arsenal of resources to help you visualize existing technology and design the **innovations** of the future. Successful completion of each mission task hinges on a strong knowledge of the problem based on credible information. As you embark on each mission, you must research the scope of the problem, analyze solutions already available, and visualize features of your new design. In your biomedical science courses, you have learned techniques for researching current medical topics. As you delve a bit deeper into published scientific work, you will examine scientific journals in more detail. Tips for researching current topics will help you as you progress through the course and as you write your own scientific papers.

In this activity you will complete a scavenger hunt as you explore online research tools, consider the composition of research articles, and review how to summarize and document credible sources. You will also review how to assess the integrity of information accessed on the internet.

1

Review the **Effective Research** and **Citing Sources** resources that you used in the previous three courses.

Reflection



Think back to your experience from your biomedical science coursework.

- List two pros and two cons of using the internet to research current science topics.
- What are some tricks you have used to assess the credibility of websites and determined which information is reliable?

2

Review the information provided in [Phoenix College's Evaluating Websites](#) guide.

Scavenger Hunt Research

Throughout your work in Biomedical Innovation, you will need to find reliable and credible information on current biomedical research. You will now explore a few of the tools available to you to access this information.

Use the internet to complete the following tasks. You may need additional resource documents located in the mission file.



Laboratory Notebook

Document all of your work as you complete the scavenger hunt.

Online Databases

Your school may have access to online science and medicine databases. Explore the available resources at your school media center or your local library. Some scientific journal articles are available for free on the internet.

Use the [New England of Journal Medicine \(NEJM\)](#) and complete the following:

3

Search for articles relating to *Severe Acute Respiratory Syndrome (SARS)*. Make sure to keep “free full original articles” in your search.

- Scroll down the list of results and choose an *original article* that is available in full text.
- Write the citation for this article in the proper format. Refer to the [Citing Sources](#) resource for information on properly citing sources.
- Review any of the listed resources from your search. Is SARS spread by a virus or a bacterium? List the name of the virus or bacterium in your laboratory notebook. Provide a proper citation for your source (if different from your source in the previous step).

4

Search for an article related to the BRCA1 *mutation* and *cancer*.

- Choose one original article. Provide the citation in your laboratory notebook in the proper format.
- Review the abstract for this article. The abstract is a brief summary of a scientific paper.
- List the four sections of an article abstract published in the *New England Journal of Medicine*. Next to each section, provide a phrase that describes the role of this section.
- Using the information presented in the abstract, come up with one testable research question

related to the findings of this study.

Google Scholar

5

Visit the database of scholarly articles available at [Google Scholar](#). Some full articles are available directly in PDF format. For other articles, you may have to follow the link to the original source to determine whether the abstract or full-text article is available.

6

Complete the following tasks:

- For two of the following independent project ideas, list the keyword or words that you would use to begin a search for relevant articles or resources.
- Choose one of the four topics above and find two articles using Google Scholar that relate to this topic. One of the articles should be a full-text article. Provide the title of each article as well as one-to-two-sentence summary of the content.
- Use Google Scholar to locate the following article. Sulheim, S., Holme, I., Ekeland, A. (2006). Helmet use and risk of head injuries in alpine skiers and snowboarders. *The Journal of the American Medical Association*, 295(8), 919-924.

- James is interested in investigating how chemicals in the environment, mainly in the water or in the air, affect human body system function and overall human health.
- Margot is interested in investigating new technology or treatments being developed or tested to provide better quality of life to war veterans who have lost limbs or have experienced posttraumatic stress.
- Finn is interested in investigating alternative methods for smoking cessation that do not involve medication
- Kerry is interested in comparing HIV prevention strategies in developing nation and in poorer communities in the United States in order to develop a prevention plan for her local community.



Laboratory Notebook

- Describe how the journal article is organized. Read through the paper and note the main topic headings.
- Describe the study *methodology*, the procedure followed by the investigators. How were subject groups organized? How was data collected?
- Compare the format of the abstract in this article to the format of the article you reviewed from the *New England Journal of Medicine*. Are there headings in the abstract? If so, how do they differ? What aspects do abstracts have in common regardless of format?

News Media

National and local news sites also provide information about current issues in health and medicine.

7

Locate one interesting science or medicine article in an online newspaper or on an online news site (*NY Times*, *USA Today*, *CBS News*, *Fox News*, *ABC News*) that has been posted in the past week. Provide a citation for this article.

8

Describe how this article related to a health-related challenge discussed in class in Activity 1.1.1 Mission: Innovation.

Reflection



Think about the way in which scientific information is presented in journal articles and the way in which the information is presented in popular news media. What are the strengths and weaknesses of each forum for the dissemination of scientific research?

Scavenger Hunt Documentation

9

Use the resources you explored in Scavenger Hunt Research to locate two credible and reliable articles, one from a scientific journal and one from a news source.

NOTE: The resources should relate to the goal of the emergency services mission.

10

Summarize one of the two articles using the [Summarizing Guidelines](#) resource.

11

Attach your typed summary (including a proper citation) and the original article to your laboratory notebook.

Citations: Refer to the [Citing Sources](#) resource if you need a reminder of how to create proper citations.

12

Share any important information from your articles that relates to the emergency services mission with your classmates.

13

Check off completed tasks on your Mission File 1.

Conclusion

Question 1

What is the purpose of a scientific abstract?

Question 2

Explain how information about the author, purpose, and content of a website can help you assess overall credibility.

Question 3

John is deciding on a topic for his independent project. His dad has just been diagnosed with Parkinson's disease. He is interested in learning more about current treatment methods for the illness, including the future of therapies such as stem cells. Provide John with at least two helpful tips on how to begin his research.