

## Infographic Tasks

1. Identify a topic that interests you.
  - a. Skim primary literature on your broad topic of interest.
    - i. You should be skimming at least 5 peer-reviewed articles as you work to narrow your topic.
    - ii. Skim = find the article's purpose & main argument.
    - iii. Look at the abstract, introduction, and conclusion only when skimming.
  - b. Look for recent, exciting developments.
  - c. Look for contentious topics.
  - d. Look for weighty or interesting questions.
2. Narrow down the question.
  - a. How much time do you have to complete this project? How much time can you realistically dedicate to it?
  - b. How much space (pages, poster size, etc.) do you have to answer your question?
  - c. How much background and data will someone need to understand this answer?
    - i. If you have to spend time/space on a ton of background information, you won't be able to include as much data/analysis (and vice versa)
  - d. Can you focus on just key examples instead of talking about everything?
    - i. Some ways to do this are choosing a single region, or one population each from a few important regions.
    - ii. You can focus on key examples that offer a contrast, illustrate different possibilities, or demonstrate a similarity.
  - e. Skim more articles if necessary.
  - f. Develop a question that has a specific answer.
3. Find more sources.
  - a. What key words can your search for? Do some give you better results than others?
    - i. Sometimes articles list key words, so look at these as you go.
  - b. You can start with GoogleScholar, but DO NOT use that as your only way of finding sources.
  - c. Search in the library databases for relevant articles.
    - i. There are lots of help videos for doing library research on the [website](#).
    - ii. If you identify a book you want to use, actually go to the stacks to find it yourself! Since books are catalogued by topic, you may stumble upon something else that is helpful to you.
  - d. [Talk to a reference librarian](#).
    - i. Ask libraries in person at the library! They would love to help you.
  - e. Use recent review articles as a jumping off point.
    - i. These summarize recent research on a topic and can help you get familiar with the state of the field.
  - f. Try "bibliography mining".
    - i. This is where you skim bibliographies of articles you found helpful so you can utilize their sources, too (as fits your project).
4. Understanding your sources.
  - a. Based on Jenny Raff's "[How to Read and Understand a Scientific Article](#)"

- b. What are the specific questions this article answers? What big question is it contributing to?
    - c. What are the authors' methods and results?
    - d. Do you agree with their conclusions?
    - e. Write as you go! Keep track of the methods of different articles, or make bullet points of their results, make a chart to compare data, etc. Just make sure you're actively engaging because this will help you understand.
  5. Understanding the larger conversation.
    - a. Summarize what the different authors you've read have said about your topic.
      - i. I would suggest splitting this up between the partners (ex. 2 articles per person), then presenting the data to your partner.
      - ii. Develop summarizing and paraphrasing skills. What is the main point? What methods did they use? What are their results? Do their results support their conclusions/hypotheses?
    - b. Compare and contrast conclusions of various sources.
      - i. If you've split up the work with a partner, you can present this information to each other, because teaching/explaining helps you learn and understand better.
    - c. Put together your summaries and comparisons to synthesize what has been said.
      - i. Do all the articles agree?
      - ii. Are there contradictions in the articles?
    - d. Evaluate the conclusions of these articles.
      - i. Keep in mind their various questions, methods, and results.
      - ii. Do some have stronger arguments or conclusions? Why or why not?
  6. Analyze your results.
    - a. Decide on the articles you think are most valuable to present to the public.
      - i. Make sure the research is recent.
      - ii. What is the best supported by data?
      - iii. Is there agreement between some of the articles?
    - b. Decide on the data you want to present.
      - i. How will you transform this data to answer your question?
      - ii. Can you combine it into a new synthesis?
      - iii. Will you just have to reproduce some figures?
    - c. Synthesize the data to answer your question.
      - i. What data is useful to answering your question?
      - ii. Is there data that contradicts your answer to the question?
      - iii. Do you have to adjust your question based on your analyses?
    - d. Go back and find more sources if necessary.
  7. Present your results.
    - a. Identify the most important data for understanding this topic.
      - i. What data answers the question in a way the general public can understand with the background information you will provide?
    - b. Determine what background information/skill is necessary for understanding that data.
      - i. As yourself "What is the least amount of knowledge a person needs to have to understand this question and answer?"

- c. Summarize what these results mean.
  - i. In your own words, write a short discussion of the results and how they answer the question.
  - ii. Why is this important to understand?
- d. Put all of this in an order that lets an intelligent person, but with no background in the topic, understand what you've learned.
- e. Design a pleasing infographic that has easily visible data that answers your question.
- f. Present your results to your classmates or at the Undergraduate Research Symposium.
  - i. Develop a brief 2-3 minute explanation of the importance of your research.
  - ii. Practice presenting your explanation.