

What is primary literature?

In the sciences, primary literature is the original publication of a scientist's new data, results, and theories. Journal articles—which go through a peer-review process—are the main format in which primary literature is found. There are many articles published in scholarly journals that are not primary literature, particularly review articles, which do not report new findings but review what is already known. Also, there are some websites that contain primary literature which are full of credible primary data and are not likely to be published in journal article or even book form (e.g. the Western technical government reports housed in Canada's Federal Science Library; <https://science-libraries.canada.ca/eng/home/> or Regional Climate Center; <https://wrcc.dri.edu/>). Note that being "primary" is in itself no indicator of the quality of the item (see <http://retractionwatch.com/>); for that we use peer review.

How do I know if a source is "primary" literature?

Ask yourself, does it have a "Materials and Methods" section? If it has such a section, it is likely primary. This will work for most of the articles you will come across. There are some exceptions to that rule, however. The best thing is to use your judgment. Secondary literature includes review articles (which include reviews of the literature) textbooks, and most scholarly or academic books (that repeat information that is already published). The vast majority of popular periodical publications (magazines, trade journals, newspapers) are usually considered tertiary literature, in that they are repeating information that has already been published and they are usually written for a non-technical audience.

Assignment details (40 points)

You are responsible for guiding your classmates through a primary research article that focuses on topic we recently covered in class (see the sign up list for dates and the corresponding article/topic; 4 students will co-lead each session). You will then share your expertise back with your peers.

1. Pre-discussion preparation (15 points)

To prepare for the discussion, your group will work together to complete a handout consisting of:

- (1) key terms that need defining in order to understand the paper,
- (2) general questions that all students are responsible for answering about the study, and
- (3) groups of questions that address each figure/table in the paper.

You are responsible for identifying the list of key terms to define. You will be provided with a suggested list of questions that you can modify, and must generate at least one new question to add to the list. General questions often pertain to the introduction and methods section of the paper and highlight background information that will help the class understand the context of the paper (i.e. drawing on recent class material and additional resources). For each figure, address: "What question are the authors addressing with this figure?" and, "What conclusions do the authors draw from these data? Do you agree that the data support these conclusions?" Meet with the instructors at least 1-2 days before your discussion session to review the questions and your facilitation plan.

2. Lead the discussion (15 points)

Your session will start with a brief overview of the article led by your team, including a review of key terms that are important for understanding the paper. Next, you will break the class out into four groups, with each led by one of your team members to work through the general questions together (~15mins). After the initial discussion, each sub-group will tackle the questions related to a figure (or figures, depending on the number in the paper; ~15mins). Next, you will re-shuffle the groups so that you are with an entirely new group of peers. Now, each person is responsible for teaching your classmates about your figure(s) (20 mins). At this point, you may wish to discuss "What do you feel is the most important figure of the paper?" After this round, the discussion group leaders will bring the class back together for a final synthesis of key questions and insights.

3. Summary of instructor-led discussion (10 points)

After the team-led discussion the instructors will lead the class in a broad level discussion based on some aspect of the paper. Your team is responsible for taking notes and generating a summary of this discussion. The topic of this section is purposefully vague as we will try and find an aspect of each paper to discuss that does not fall into the purview of your assignment. A good summary will include:

- (1) The questions posed by the instructors
- (2) How/did the question posed change how the class viewed the paper
- (3) What connections can be made between the questions and the concrete components of the paper (i.e. the authors' hypotheses, methods, discussion points etc)?
- (4) How your process of thinking about epistemology has changed, and if applicable, how your approach to interpreting scientific literature could improve
- (5) What you think this paper contributes to your overall understanding of how science happens and how it is subsequently disseminated?

(See the course schedule for your group's due date)

Submission Details

Use the GitHub classroom link here: <https://classroom.github.com/a/rZDwW2zV> to accept the assignment and view submission instructions.