**How To Read A Scientific Article**

**Learning Objectives**:

1. To be able to read a scientific article most efficiently
2. To understand the purpose and value of literature review

**Commonly there are two types of Scientific Articles that you may encounter**:

1. *Review Articles*: Provide a comprehensive view of all or many aspects of the topic of interest. It presents an integrated understanding about the topic, based on findings from many primary research reports/articles. These articles tend to be written in a manner so that non-experts can read it to learn about the topic.
2. *Primary Research Articles*: Provide the research data and its interpretation related to a specific aspect of the topic of interest. These articles tend to be more technical and difficult to read. In order to read these articles most efficiently they may have to be read in a non-sequential order.

Suggestions for reading scientific articles are included below and also in the references listed at the end of this document.

**Steps in reading a Scientific Article**:

1. Determine whether the article is substantive, recent and pertinent.
2. Read the title, date, abstract and authors’ institutional affiliations.
3. Read the introduction and be prepared to consult a science dictionary for unfamiliar terms. Determine what is already known about the topic and what questions the authors were trying to answer. Write down any questions you have about the topic. Assume you will need to reread the paper.
4. Read the methods section and diagram what was done in the procedure.
5. Read the results section and summarize the data; note the sample size, confidence intervals and statistical analysis.
6. Compare the data to the question that was being asked by the investigators. Do the results answer the question?
7. Read the conclusion. How do the authors interpret the data? What limitations do they identify? What new questions do they propose? What are the weaknesses of the study?
8. Read the abstract again. Does it describe the paper accurately?
9. Determine what other researchers say about the paper by reviewing the references and checking the recent literature.
10. Generate questions about the paper and the topic.

**References**:

* How to Read a Scientific Paper (<http://www.sciencebuddies.org/science-fair-projects/top_science-fair_how_to_read_a_scientific_paper.shtml>)
* Tutorials: Scientific Papers (<https://www.lib.purdue.edu/help/tutorials/scientific-paper>)
* How to Read a Scientific Paper ([https://journalaccess.aspb.org/ReadaSciPaper/How to Read a Scientific Paper M Williams Mar 2013.pdf](https://journalaccess.aspb.org/ReadaSciPaper/How%20to%20Read%20a%20Scientific%20Paper%20M%20Williams%20Mar%202013.pdf))
* How to Read and Understand a Scientific Paper: A Step-by-Step Guide for Non-Scientists (<http://www.huffingtonpost.com/jennifer-raff/how-to-read-and-understand-a-scientific-paper_b_5501628.html>)