

### Resource Seven: Worksheet for Reading Primary Literature

Many students are uncertain how to tackle the reading of primary literature in the natural sciences. The text is dense and full of scientific terms and acronyms and can intimidate any reader who is not intimately involved in the particular discipline. Having experienced frustrations in trying to comprehend the experimental methods, meaning of the results, and significance of the conclusions, many students develop their own methods of reading primary literature in the natural sciences. To identify approaches and techniques that are most successful for you and to avoid the traps that lead to incomplete understandings of the articles, answer these questions as you read the primary literature.

1. What can you learn from the title of the paper?
2. Who are the authors and what agenda might they have?
3. Does the abstract draw a big picture and clearly state the question, hypothesis, experiments and results? If so, state them in your own words.
4. What is the precedent for this work? What work does it build on? Is this paper an extension of previous work or does it aim to present an alternative point of view?
5. What parts of the paper do you find most intimidating or difficult to understand? How do you deal with this? Do you skip over these portions or do you spend too much time trying to understand them with little success?
6. Did you identify resources that might help you? Which of these was most useful?
7. What parts of the paper do you find most interesting? Why?
8. What can you learn from the figures? Please state the information here in your own words.
9. What are the variables in the assays? How are the negative and positive controls chosen? Explain the experimental purpose of each in your own words.
10. Are the results convincing? Why or why not?
11. Summarize the paper in your own words.
12. What is the significance of the work presented in the paper? Do you agree with the authors about the significance of their work?
13. Can you think of another explanation for the results? Do the authors address this in their discussion? If so, how?
14. If you were a reviewer for this journal, would you have accepted this paper, rejected it, or asked for revisions? What suggestions would you give to the authors?