

WORKSHEET 1.1

Sections for a Scientific Paper or Poster

I. The Title

The title should be descriptive. It should be brief *but* it should also indicate the variable(s) that were tested. A poor title: *Plant Experiment*. A better one: *Investigation of the Effects of Mozart's Music on Brassica rapa growth*.

II. The Abstract

A one- or two-paragraph summary. The abstract condenses the entire report into a brief, clear, quickly readable overview.

III. Introduction

Background information: What is the experimental topic? What is known about the topic? What is unknown? How does this study fit into that context? Define and explain the major scientific concepts.

Questions and hypothesis: Explicitly state the experimental question being investigated. State any hypotheses being investigated and if/then predictions.

IV. Methods and Materials

Procedure: Listed numbered steps. What exactly was done (written in past tense) in enough detail so others could replicate your experiment. But keep it concise.

Materials: What materials were used?

Statistical/mathematical analysis: What calculations (for example, mean of height increase in plants exposed to. . .) were made?

V. Results

1. Data tables and graphs go here.
2. Describe the results but do not interpret them here. Interpretation of results goes in "Discussion."

VI. Discussion

Address the original question and hypothesis. Did the experiment answer the question? Did the results support the hypothesis? *Refer to the data* to back up conclusions.

Explain the data. If the results were unexpected, why were they? Even if results were expected, what other possible explanations are there?

Biological meaning, implications, context, and "big picture." Any generalizations and new predictions can be described here.

Areas of future research should be described.

VII. Literature Cited

Bibliography of all sources used for background information.

Adapted from: Ambrose, H., Ambrose, K., Emlen, D., & Bright, K. (2002). *A handbook of biological investigations* (6th ed.). Winston-Salem, NC: Hunter Textbooks.