How to Write an Abstract

The abstract is the reader's first encounter with your paper, and is the chief means by which scientists decide which research reports to read in their entirety. The abstract should provide a brief summary of the findings of the paper, and should be a stand-alone document that can be understood without reading the paper.

A properly written abstract consists of the Title of the study and the body of the abstract. The abstract must be single spaced! Your abstract should contain no more than 175 words and must fit within the space allowed. The Formal Abstract and the abstract you include with your paper will have different formats for the heading, but the body of the abstract will be the same.

The abstract included with your paper should conform to the following format.

Title

The title of your abstract should be the same as the title of your scientific paper.

The Body of the Abstract

The abstract is a very brief overview of your ENTIRE study. It tells the reader WHAT you did, WHY you did it, HOW you did it, WHAT you found, and WHAT it means. The abstract should briefly state the purpose of the research (introduction), how the problem was studied (methods), the principal findings (results), and what the findings mean (discussion and conclusion). It is important to be descriptive but concise--say only what is essential, using no more words than necessary to convey meaning.

The Abstract Worksheet Example and Abstract Worksheet shown below may be helpful as you prepare the first draft of your abstract.

Abstract Worksheet Example

The Abstract Worksheet that follows may be used to help you prepare the first draft of your abstract. (Some projects may not lend themselves to this format, so don't feel that you need to use the worksheet.) The sequence of sentences in the Abstract Worksheet is ordered in a logical fashion, beginning with an introduction and proceeding to your hypothesis, methods, results, discussion, and conclusion.

Think of the most important items that crystallize each part of your project. Leave out unimportant details. As a first draft (using the Abstract Worksheet), write one or two sentences that summarize each section. For your final draft, make sure the abstract "flows" logically. Give it to a friend to read. Ask them to tell you what they think you actually did and what you found. Revise as necessary.
Below you will find an example of a completed abstract worksheet.

**Project Title**

A Test of the Competitive Exclusion Theory in Two Related Species of Butterflies

**Introduction**

The food habits of larval butterflies of two related species from a zone of overlap near Oil City, PA were examined.

**Hypothesis**

The theory of competitive exclusion predicts that food habits of closely related species should not overlap significantly where species occur together.

**Methods**

Transects in five different habitats were used to determine food and habitat preferences in wild populations. Two species of captive caterpillars were offered various food in the laboratory; weight changes of foods and caterpillars were determined daily.

**Results**

Food habits in overlapping habitats were significantly different between the two species (ANOVA p = 0.001). Food habits in non-overlapping habitats were not significantly different (ANOVA p = 0.52). There were no differences in food preferences (ANOVA p = 0.76) or growth rates (ANOVA p = 0.88) on different foods in laboratory maintained populations.

**Discussion**

These species are able to coexist because they are not competing for the same, and limiting, food resources in the same area.

**Conclusion**

These results support the theory of competitive exclusion because the two species did not use the same food resources from similar habitats.
Abstract Worksheet

(Some projects may not lend themselves to this format, so don't feel that you need to use this worksheet.)

Use one or two concise sentences to summarize the most important aspects of your project for each section listed below.

Project Title (the same as the title of your scientific paper)

Introduction (What is this project about? Why is this project interesting or important?)

Hypothesis (What did you think you would find? Why?)

Methods (Briefly explain your procedure.)

Results (What did you find when you performed your experiment?)
Discussion (Are your results consistent with your initial hypothesis? Why or why not?)

Conclusion (What is your interpretation of what these results mean? Why should anyone become excited about or interested in your findings?)