

Look Who Lives in the Ocean!

Writing a Scientific Paper

(any teacher-guided science experiment can be used for this project)

The world's most prominent scientists are also writers. In fact, one of the key goals of any scientist is to publish the findings of their research in special scientific journals. Like other kinds of writing, scientific writing must share ideas and knowledge in a clear fashion and be grammatically correct.

A scientific paper may be written by one individual or by several authors who work together. When writing this kind of paper, it is important that you provide accurate details regarding both the process and the results of your scientific experiment. It is also helpful to research books, magazines and online reference materials relating to your subject, so you can offer additional information in the paper.

Scientific papers follow a standard format. They are typically structured as follows:

Title

The paper's title should reflect the nature of your scientific experiment.

Example: *Testing the Freezing Temperature of Saltwater vs. Freshwater*

Author(s)

This is simply the name(s) of whoever is writing the paper.

Example: by I. Wrightwell, Seymour Ayes, and Suzy S. Smart

Abstract (may be optional for this project)

An abstract is a synopsis of the full paper, written to give readers a quick overview. It should briefly explain the project's objectives and how the experiment was done, plus the basic results and their significance. This is an important component in a professional scientific paper, which may be many pages in length.

Introduction

In 1-3 paragraphs, explain why you are doing the experiment and what you already know regarding the subject matter. Also, write your objectives and a hypothesis (what you think will happen).

Example: An article in *Student Science Magazine* suggests saltwater freezes at lower temperatures than freshwater, so we decided to conduct a class experiment to explore the freezing temperatures of freshwater and saltwater in a controlled setting. We expect the saltwater to...

Materials and Methods

Write out exactly how the experiment was conducted. Detail what instruments or objects were used and how. Be sure to give accurate weights and measurements.

Example: We labeled three matching 12-ounce glasses with tape and marker as #1, #2 and #3. Exactly one cup of room temperature tap water (72°F) was poured into each of the glasses. Next, we added three level teaspoons of table salt to glass #2 and five level teaspoons of salt to glass #3...

Results

Carefully describe the results of your experiment in this section.

Example: The water in glass #1 (freshwater) froze at a temperature of 32 F. The water in glass #2 (with three teaspoons salt) froze at...

Discussion

Here, you should take time to reflect on the experiment and its results. What do you think of your results? What do they mean? Was the experiment successful? Do you have new questions that emerged from the experiment?

Example: While we expected the freshwater in glass #1 to freeze before the saltwater in glasses #2 and #3, we were surprised to discover...

Acknowledgements

This is a paragraph to name and thank any people (other than the paper's authors) who assisted in the research or helped you obtain your results.

Example: Our thanks to Mrs. Green, the school librarian, for helping us find books and articles related to frozen oceans. We would also like to thank our teacher, Mr. Johnson for supporting our experimental research in his classroom.

References

This is a basic bibliography of any books, papers or websites you used to write your paper.

Example: Gershun, James "An Ocean of Ice", Student Science Magazine, March 2008, pages 17-24
McVellon, Gary 101 Fun Experiments, Pow Publishing 1998

Have fun with this! Perhaps some day you will have a research paper published in a real scientific journal!