Science Fair Projects and The Scientific Method

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2015-16
What is the Scientific Method?

• The scientific method is a way to ask and answer scientific questions by making observations and doing experiments.

• The steps of the scientific method are to:
  • Ask a Question
  • Do Background Research (Research Plan)
  • Construct a Hypothesis
  • Test Your Hypothesis by Doing an Experiment
  • Analyze Your Data and Draw a Conclusion
  • Communicate Your Results
Science Activity: Using the Scientific Method to complete a Science Fair Project.
What does the Scientific Method look like on a Science Project?

A science fair project includes:

- Problem
- Rationale - Purpose
- Hypothesis – Educated Guess
- Procedure
- Data
- Results
- Conclusion
- Research Paper
- Bibliography
- Abstract
What is a Rationale?

The rationale is the purpose or reason for completing the scientific activity.
What is a Hypothesis?

• A hypothesis is an educated guess as to what you believe the outcome will be.
What is a Procedure?

• The procedure is the method in which you will test your hypothesis.
What is Data?

• The evidence collected to show the experiment was conducted and the results are accurate.
What is a Conclusion/Result?

• The conclusion is the final analysis of the science experiment.
• The results of the study shape the conclusion and offers the next steps.
How would the Scientific Method look on a Project Board?
Other Components of the Science Fair Project
What is an Abstract?

No more than 250 written words which describe the:

• **Purpose of the Experiment**
• **Procedure**
• **Data**
• **Conclusions**

The Abstract can be located on the Project Board.
Research Plan

• A research plan should be written and approved before any experimentation and should accompany all projects.

Should include:

• A rationale or purpose for the experiment.
• A hypothesis, research questions, and expected outcomes of the experiment.
• Detailed research methods and conclusions such as procedures, risk and safety, and how the data will be analyzed.
• Bibliography – At least 5 major references.
Bibliography

• A bibliography contains academic references used to complete the research and project.
• References may include science journals, the Internet, books, etc.
Log Book

• A composition notebook which chronicles from the beginning to end of the experiment.
Websites for Science Fair Ideas

• http://www.education.com/science-fair/elementary-school/
• http://www.sciencekids.co.nz/projects.html
• http://www.parenting.com/gallery/easy-science-fair-projects-kids
• https://silverbeach.bellinghamschools.org/websites-science-fair-projects
• http://chemistry.about.com/od/sciencefairprojects/a/sciproelem.htm
• http://www.moneycrashers.com/elementary-science-fair-project-ideas/
• http://www.terimore.com/
• http://www.sciencebuddies.org/science-fair-projects/Intro-Chemistry.shtml