

SCIENCE FAIR



Wendell Watson Elementary, 6800 Walt Williams Road, Lakeland, FL 33809 863-853-6060

The Project

This year 5th graders at Wendell Watson will be participating in the Polk County Science Fair. Each student will be required to submit a project to their science teacher. Two projects from each classroom will go on to compete at the school level and then three projects will be selected to participate in the county Science Showcase. All projects at the school level will be submitted in a file folder (provided by the teacher). **PLEASE DO NOT PURCHASE A SCIENCE BOARD FOR THIS ASSIGNMENT.**

What will everyone be doing?

The teacher: The teacher will provide information and instructions for this project in the classroom.

The parent: Please assist your child throughout the project. The main goal of the science fair project is to understand the scientific method. As part of the assessment for this project, your child will be orally assessed on his or her understanding of their project. Please be sure they understand what they are doing and why they are doing it. Grading will be based solely on the student's understanding and completion of the process, not the elaborateness of the experiment.

The student: This project is your assignment. You are responsible for following the Scientific method to complete this project. Work with your parents and teacher to complete it accurately and turn in each part on time.

Getting Started

Science Fair projects must test something measurable. It should also have a variable (one part of the experiment that changes from trial to trial). Experiments that are demonstrations, models or compare different products may not be submitted to the County level competition, but may be turned in for a classroom grade.

Project Ideas?

The internet is an excellent resource in the selection of science fair projects. Check out a book from the library on an interesting science topic. Then, think of a topic that can be measured and tested. For example, testing the mass of the bob on the period of a pendulum is a measurable experiment with a variable (changing mass of the pendulum). On the other hand, volcanoes would not be a good project idea because we cannot actually visit them to test them and a model of a volcano that erupts is a demonstration not an experiment.

Important Dates:

- April 3rd Project Ideas **MUST** be approved by your teacher. **(Projects may be approved sooner)**
- April 27st Classroom projects due
- May 16th County Science Fair for 3 Wendell Watson Finalists

Components of a Science Fair Project

A. Title

May be written as a question or in two to three words.

B. Stating a Purpose

This statement should identify the variable (one thing being changed) and what is being measured as a result of that one thing being changed. The purpose can be stated:

“I wonder” or “What is the effect of...”

For example: I wonder what would happen to plants when exposed to different intensities of light?

C. Hypothesis

The hypothesis has to match the experiment purpose and should use measurement NOT a subjective statement. For example: I hypothesize that bright light will affect the height of the plant NOT I hypothesize that bright light will make the plant grow the best.

D. Procedure

Materials: List all of the materials used in your experiment. Be specific. For example: 250 ml graduated beaker or 1-20 x 20 cm square cake pan NOT measuring cup or container. Size and quantity are important. Remember use **metric measurements**.

Step by Step Directions: Be specific! The steps must be precise and detailed in order for someone to recreate the project without additional help. Include quantities. Directions should identify the variable (part of the experiment that changes), constants (everything else that stays the same) and the control (trial done without changing the original factors) if there is one.

Continue with Step by Step Directions:

Not all experiments will have a control, for example if you were testing if fertilizer affects the growth of plants, the control would be a plant grown without fertilizer. If you were testing if the wheel circumference of a toy car affected the distance it traveled down an inclined plane there would not be a control only constants (inclined plane height, track surface) and a variable (wheel circumference). Please remember to do three or **more** trials and reflect this in your directions. Be consistent in your intervals of time.

E. Data

Your experiment should have at least THREE trials. All students need to keep a handwritten log book which includes, but not limited to, the following:

- A list of materials
- Notes on preparations before the experiment
- Day by day dated notes on the progress and observations of three trials
- Measurements gathered (metric)
- Some evidence of research cited from the source
- Tables, graphs (match the expectations of the hypothesis, show evidence of all three trials and the AVERAGE of those three trials in the graph)
- Drawings or photographs

F. Conclusion

How did your data relate to your “purpose”? This statement will either “support” or “not support” (NOT prove or disprove) your hypothesis. If your results do not match your hypothesis it is okay, that is science and it will not affect your grade.

POSSIBLE PROJECT IDEAS

1. Will vitamins affect the growth of plants?
2. Will frozen seeds sprout as well as seeds that are not frozen?
3. In what kind of material do plants grow best?
4. Is rainwater absorbed at the same rate in different kinds of soil?
5. What is the effect of heat when dissolving sugar or salt?
6. How is the strength of a magnet affected by glass, cardboard or plastic?
7. Do objects fall at the same speed?
8. What kind of surface will roll a ball fastest?
9. How does the weight of a pendulum affect the swing?
10. How does the design of a paper airplane affect its flight?
11. How is paint affected by temperature changes?
12. Does fresh water hold heat longer than salt water?
13. How do different surfaces affect the amount of sunlight reflected or absorbed?
14. What is the rate of seed germination in different soil types?
15. What type of soil absorbs the most sunlight?
16. How do different surfaces absorb the sun's energy?
17. How does wing design affect lift on a paper airplane?
18. What materials conduct heat the best?
19. Is there a difference in strength between recycled newspaper, recycled notebook paper and recycled computer paper?
20. Will the speed of a ball change if the surface it is traveling over changes?

WEB SITE RESOURCES

<http://school.discoveryeducation.com/sciencefaircentral/>

<http://www.super-science-fair-projects.com/>

<http://www.stevespanglerscience.com/>

<http://www.sciencebuddies.org/>

<http://pbskids.org/designsquad/>