

Science Fair 5th grade

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Topics:

- What battery type lasts the longest?
- ✓ How can one determine the acidity of something using a simple household ingredient?
<http://www.madsci.org/experiments/archive/859332497.Ch.html> and other link
<http://icn2.umeche.maine.edu/genchemlabs/Anthocyanins/fruitjuice2.htm>
- ✓ Color's effect on heat absorption
- ✓ Effects of temperature on density
- Does temperature affect crystalline growth?
- How can you recycle paper? See lesson plan "Recycle Paper Activity" by Austin Carter
<http://ofcn.org/cyber.serv/academy/ace/sci/cecsce/cecsce167.html>
<http://www.iit.edu/~smile/pl9608.html>
- Balloon rockets <http://www.sciencebob.com/experiments/experiments.html>
- ✓ Oil Spill! Clean It Up! <http://www.funology.com/laboratory/lab040.htm>
- Demonstrate how plant gets its water <http://www.funology.com/laboratory/lab005.htm>
- ✓ Can we use something instead of salt to melt the snow? (i.e. sugar, sand, pepper)
http://www.southlakems.org/science_fair_ideas.htm
- **This site has other ideas** http://www.southlakems.org/science_fair_ideas.htm
- ✓ What is the best shape for a kite? <http://www.rossarts.org/naples/ideas.htm>
- ✓ How does the weight of a pendulum affect the swing?
- ✓ Which type of diaper holds the most water?

Materials:

- Vary based on topic chosen

Target Concept:

- Allow students do design and perform their own scientific experiment. References are given above as a guide for teachers in the event that students need more guidance. The goal however, is to let the students design the experiment with minimal guidance.

Initial Introduction:

Introduce the various elements of a science fair project. "How to Prepare a Science Fair Project" from Unitedstreaming.com is a good resource to assist with the introduction of a science fair project.

Procedure:

Have the students choose a topic from a list of topics. Students may come up with their own ideas at the teacher's discretion. Based on the topics chosen by the students (we had students write their top 3 choices), assign them their research topic group.

Each group should come to a consensus as to the question they will attempt to answer. The question should be worded in such a way that you know they will be testing a variable. For example, students who were building balloon rockets were not allowed to simply ask “How can we make a balloon rocket?”, but rather, “What shape balloon makes a better rocket?” or “What kind of string lets the rocket go further?”

After choosing an appropriately phrased question, the students can then proceed to writing down the hypothesis. In a group hypotheses may vary from person to person. A hypothesis is what that particular student expects or predicts will happen.

The students must then list the materials needed to perform the experiment. They should also write a procedure along with safety precautions needed for the experiment.

After the student has provided the necessary information for performing the experiment, the teacher can let them proceed with the experiment. Different groups will need different levels of supervision. Make sure before getting started with the actual experiment, each student knows what data he or she needs to record to have a successful project.

Guide students through the summary of their work.

Students may begin to work on their poster as deemed appropriate by the instructor. Some groups may be ready within a day or two of choosing their topic. Others will need more time and guidance as to what to place on their boards.

We used 3-paneled posters.

Posters must include the following information: Title, Question, Hypothesis, Materials, Procedure, Data/Results, and Conclusion.

Target Observations:

- Students should enjoy designing and performing their own scientific experiment.
- This project should give students the opportunity to implement the scientific method for their “own” project.
- Students should learn something new from their investigation.