

Burlington Elementary

Science Fair Booklet

The Burlington Elementary Science Fair is a meeting place for students and scientists. The students have the opportunity to exhibit their project, share ideas with other students, and discuss their projects with parents, students, teachers, and other scientists. The goal of the student's science project is to learn good scientific process.

Every student at Burlington Elementary is eligible to enter projects in our school science fair. This may or may not be a part of the science curriculum presented in the student's regular classroom. **All fourth- and fifth-grade students are required to participate** in the fair by making a project. Students in kindergarten through the third grade can choose whether or not to participate. Students may work individually, with another student from the same class, or with a student from another class/grade on the project, provided that each child participates equally in the development of the project.

Students do a great job on science projects they care about. If students choose a project simply to satisfy a requirement, learning will be minimal and satisfaction even lower. Students are most satisfied with their project if they follow a guided time table, which is included in this booklet. At Burlington, we have resources to explore ideas that your child may find interesting.

The most unscientific part of a science fair is the judging. Each child is judged by two persons from the community. The central purpose of *this* Science Fair is to learn about science and to share.

Winning an award is "frosting on the cake." The real reward for completing a science project should be the thrill of discovery and a feeling of accomplishment.

Safety

Electricity: Only 100-volt, 60-cycle, single phase AC connection will be provided for exhibits. Exhibitors who require electricity must furnish a 25- or 50-foot three-pronged extension cord with a maximum of 5 amps and 500 watts. All wiring must be properly insulated. Nails, tacks, or non-insulated staples must not be used to fasten wiring.

Water: Outside water and ice will not be available. If the exhibit needs water or ice, exhibitors must bring it in containers.

Exhibit Safety: Anything that could be hazardous to the public, the exhibitor, or other exhibitors is prohibited! This includes:

- Live disease-causing organisms that are pathogenic to man or other vertebrates
- Microbial cultures and fungi live or dead
- Hazardous chemicals
- Dangerous moving parts of exhibits
- Flammable gases, solids, liquids or fumes

High voltage wiring, switches, and metal parts must be located out of reach of observers and designed with adequate overload safety factor. Bare wiring and exposed knife switches may be used only on circuits of 12 volts or less; otherwise, standard enclosed switches are required. Electrical connections in 110-volt circuits must be soldered or fixed under approved connectors, and connecting wires must be properly insulated.

Experiments with the above are to be done in the safety of a laboratory under supervision of an adult and not at home.

No equipment with an OSHA warning will be allowed to remain at the fair except during judging.

Information for Students About Science Fair Projects

A Successful Science Project:

1. Represents your work—not that of an expert or your parents.
2. Indicates an understanding of the science area chosen.
3. Shows careful planning that would eliminate a “rush” project.
4. Has a notebook showing a complete record of all your work.
5. Has a simple, well-stated title and neat lettering.
6. Include photographs, charts, pictures, graphs, etc. that might be necessary to explain your work.
7. Has accurate, valid, and correct observations.
8. Tells a complete story—Problem and Solution.
9. Is original in approach and presentation.
10. Is self-explanatory.
11. Is attractive and organized.
12. Does not have to cost much money.
13. Is best if it is an experiment, but it doesn’t have to be.
14. Is one that give credit to those who gave help.

A Science Project Is Not:

1. Only a report.
2. Necessarily a new discovery or an original piece of research.
3. Constructing a plastic model from a hobby kit.
4. An enlarged model or drawing.
5. A weekend chore.
6. One, two, or even three posters.
7. Something done by your parents or teachers.

Steps for Making a Science Project:

1. Choose a topic and discuss it with your teacher. Ask your teacher for help and suggestions.
2. Once you have chosen your topic, find out as much about it as possible.
3. Keep a project notebook and record all of your thoughts, preparations, and ideas. Keep a record of your readings.
4. Set up a work area somewhere around your house where you can work on your project. Make sure the area is off-limits to your pets and younger brothers and sisters.
5. Work on your project a little each day. Don’t wait until the last minute.
6. Collect the materials needed for the project.
7. Check with your teacher for suggestions and materials. He or she can save your time, excess work, and money.
8. Construct your exhibit and make letters for your signs.
9. Mount your pictures, graphs, charts, etc.
10. Present your science project at the fair.

Categories of Projects

Botany	Subjects such as plants (fungi, mosses, seed plants), agriculture, conservation, and forestry.
Earth and Environmental Science	Projects illustrating principles of geology, geography, and related fields. Projects dealing with global change, issues related to spaceship earth, world Earth Day topics, environmental concerns, extinctions, and related fields.
Engineering	Technology and devices that are useful to humans, such as electrical, civil, mechanical, chemical, aeronautical, geological, and similar fields.
Health and Behavioral Science	Emphasis on human health and behavior.
Mathematics and Computer Science	Showing any theory or principle of mathematics or demonstrating new ideas for computer software or computer systems.
Physical Science	Basic principles of physics, chemistry, astronomy, meteorology, and related fields.
Zoology	Animals (invertebrates, vertebrates), testing animal growth, behavior, genetics, paleontology.
Inventions	Students may design, explain, sketch, and build any contraption or device that accomplishes something.

The Scientific Method

A student record sheet for an experiment or science project

1. What do you want to find out?
(Purpose)

2. What do you think will happen?
(Hypothesis)



3. What do you need to use? **(Materials)**



4. What will you do to find out?
(Procedures)

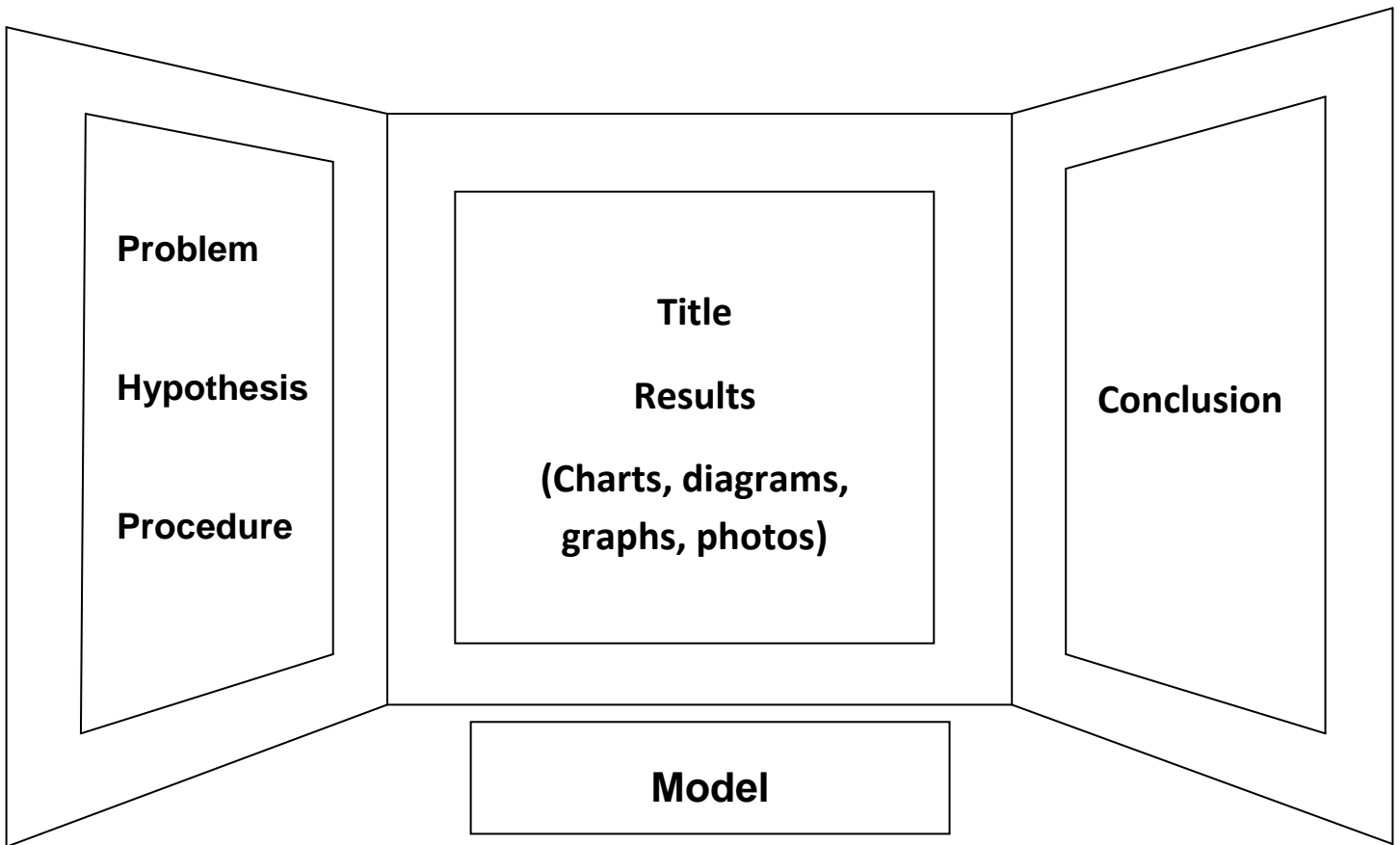
5. What happened? **(Results)**



6. What did you learn? **(Conclusions)**

Science Project Model

Here is a suggested model using a science board to display your investigator results. Use your own creativity when you make your display. All charts, diagrams, photos, etc. must be attached to the exhibit. The exhibit displays your project. Use attractive lettering. Use one-color printing to avoid confusion. Spell correctly, and be very neat. Main points should be large and simple.



Important: When choosing the materials to build your exhibit, remember that you have to carry it! Fasten everything well to avoid rebuilding or recreating your exhibit on Fair Day. Make it sturdy but not too heavy to carry conveniently. Your display must be self-supporting. No part may be attached to tables or walls.

The Scientific Method

with Guideline Deadlines to Keep You on Track

When performing an investigation, you will want to follow a research method used by scientists when they do experiments. See Project Model page for how to display each item. **Hint:** Add each item to your board as you finish each step!

INVESTIGATE/INQUIRE/BE AWARE and come up with your project idea! Due by Jan. 9 — now create your title and register online via <http://bit.ly/rrh9ZQ>.

Purpose A question or statement saying what you are trying to find out with your experiment. **Due by Jan. 9**

Hypothesis What do you think will be the outcome of your experiment? **Due by Jan. 16**

Procedure Outline steps of the experiment and your observations. **Due by Jan. 23**

Data gathering Collect information, either quantitative (numbers) or qualitative (words) and present this information in a graph, chart, diagram, or table. **Due by Jan. 30**

Results State the outcome of the experiment. **Due by Feb. 6**

Conclusion A summary of what your experiment shows (answer your focus question) and state whether your prediction was correct or not. **Due by Feb. 6**

Final step Finalize your board with pictures and bring to school on **Monday, Feb. 13** to share with your class before the fair!

Internet Resources

1. Need step-by-step assistance?

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

This site will help you:

- Find a project idea
- Get project help
- View more resources

2. Another great Internet resource

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

This site will help you with:

- Getting started
- Project ideas
- Presentation Tips

Remember:

Your project should interest you and answer a question you are curious about.
Have fun and ask questions!