Science Fair Information Booklet

Guidelines

1. The project should begin with a question that can be tested by the student. For example, "Can a person that is blindfolded tell the difference between whole milk and skim milk?"
2. In developing these projects at home, students may choose to work on their own or in partnership with another student.
2. The size of your project may not exceed 4 ft. wide by 3 ft. tall.
3. All projects must be durable and safe. Your project must be able to stand by itself. Only the project board should be brought to school. Do not bring in the experiment, only pictures.
4. Posters or papers explaining the project should be neat.
5. No harmful chemicals, live animals, explosives, dangerous substances, disease causing organisms, microbes or fungus (living or dead), expensive items, or drugs may be used. Mold may be grown on food, preferably in plastic bags.
6. Models of the solar system or of volcanoes are not acceptable because they do not answer a testable question by the student. They serve as a research project.
7. The student may keep a diary, journal, or laboratory record book in which observations are recorded.
8. Pictures or drawings may be taken or made during all stages of the investigation should be placed on the display board with captions.
9. The student should complete projects with parent assistance, not vice versa.

Timeline for Science Fair Project

Completed by **February 5th** or earlier:

1. Choose topic
2. Investigate your topic
3. Form a question
4. Make your prediction

Completed by **February 19th** or earlier:

5. Develop procedures
6. Gather materials
7. Conduct investigation
8. Analyze and display data (graphs and pictures)
9. Collect data (pictures, charts, tables)
10. Draw conclusions

Completed by **March 5th** or earlier:

11. Complete display board (using color, neat pictures, BE CREATIVE!

On **March 9th**: Science Fair Project Due! Please bring your display board to school on or before **March 9th**.

The following questions are sample questions. While you may choose one of these, we encourage each child to develop a testable question that is of interest to them.

Example Science Fair Questions

Can a blindfolded person tell the difference between Pepsi and Coke?
Which chewing gum holds its flavor better?
How does the temperature of a tennis ball affect the height of its bounce?
How does the air pressure of a soccer ball affect how far it travels when kicked?
How does the type of material affect how long a shirt takes to dry?
How does the temperature of water affect the time it takes to freeze into ice cubes?
How will the time spent chewing bubble gum affect its bubbles' maximum size?
Which type of bread turns moldy first: store bought or bakery bread?
In a blind taste test, can you tell the difference between nonfat, low-fat, and whole milk?
Which grows faster: fingernails or toenails?
Do new tennis balls bounce higher than older ones?
Do basketballs that are fully inflated bounce better than flatter ones?
Which brand of diaper can hold the most water?
Does the amount of fat in butter/margarine affect the time it takes to melt?
Will a frozen seed sprout?
Which brand of glue holds two boards together the best?
What kind of juice cleans pennies best?
Will pennies become shiny no matter how dirty they are?
Does the height a ball is dropped from affect how high it bounces?
Which type of cheese grows mold the fastest?
Does the thickness of a rubber band affect how far it can be stretched?
Do different brand batteries last similar times before going dead?
Will different brands of light bulbs burn out at similar times?
Which cooks faster, brown rice or white rice?
What type of cleaner removes ink stains best?
Which brand of plastic trash bag is the strongest?
Which brand of cat litter absorbs the most?
Which type of pencil erases the easiest?
Which brand of paper towel can hold more water?
Will plants grow better in soil or water?
Does the amount of water affect the growth of the plant?
Will vitamins affect the growth of a plant?
Is there a relationship between the size and strength of a magnet?
Which boat shape can support the most weight when placed in water?

How does temperature affect the bounce height of a ball?
Do all liquids freeze at the same rate?
Does iron rust faster in salt water or fresh water?
Does temperature have an effect on solubility?
Do different liquids have different boiling points?
Does water with salt boil faster than plain water?
Does the type of insulation affect how long it takes water to freeze?
Does the water from a melted ice cube weigh the same amount as the ice cube itself?
Does the color of cloth wrapped around an ice cube affect how fast it melts?
Does an ice cube melt faster in air or water?
Do all objects fall to the ground at the same speed?
Do different watt light bulbs produce different amounts of heat?
Which type of container keeps liquids hotter for more time?
Does the type of soil affect how tall a plant grows?
Does the type of light (artificial or natural) affect plant growth?
Do vitamins or fertilizers affect the growth of plants?
Does temperature affect the growth of seeds or plants?
How does temperature affect the growth of mold?
How does light affect the growth of mold?
What kinds of materials decompose (rot) faster when buried?
Will bananas brown faster on the counter or in the refrigerator?
Does sugar prolong the life of cut flowers?
Can plants grow without soil?
Does the color of light affect plant growth?
Do ants like cheese or sugar better?
Does the drop height of an object affect the size of the crater it will make?
Are there differences in temperature in shaded vs. non-shaded areas during the day and night?
Are there differences in shadow lengths during the day?
How does the size of the ice cube affect its melting time?
Can you use a household water filter to remove flavor or color from other liquids?
How does salt affect the boiling point of water?
How does salt affect the freezing point of water?
Do dissolved materials, such as salt, in water affect the absorbency of a paper towel?
What type of adhesive is the strongest?
Does the amount of air space in a container affect food spoilage?
What type of cleaner removes ink stains best?
Which brand of plastic trash bag is the strongest?
Which brand of battery lasts the longest?

Science Fair Items to be Included on Poster Board

Your project display is the first thing that people will see when they stop by your spot at the science fair—so you'll want it to look fabulous!
What is a display? A science-fair display is made up of a sturdy backboard that shows off the key points of your project. Your display should include the following:

Question: What do you want to find out by performing your investigation? You must be able to test it.

For example: Which ball bounces the highest, a flat ball or pumped up ball?

Prediction/Hypothesis: What do you think will happen? This is a guess you make about what you think will be the answer to your question. Make your prediction after you consider everything you already know about the question. You will set up an experiment to test your prediction and collect data.

For example: I predict the ball full of air will bounce higher than a ball that is not completely filled with air.

Materials: What materials will you need in order to conduct your investigation?

For example: 2 different balls of similar type
Measuring tape

Variables: There are three variables: what you are changing, what you are testing, and what you are keeping the same.

For example:
Independent *(part you will change) The amount of air placed in a ball.*
Dependent *(part you will measure or test) How high the ball bounces.*
Controlled *(parts that will stay the same) Ball type and distance it is dropped.*

Procedure/Steps: Tell in step-by-step order what you did in your experiment.

For Example: *Test the same way with each ball. Try multiple tries with each ball.*

1. *Decide where you will do the bouncing test.*
2. *Make sure both balls are made of the same material.*
3. *One person watches the measuring tape while another person bounces each ball.*
4. *Measure where each ball ends up over at least ten times.*
5. *Write down data that you keep track of.*

Data: Show measurements you took, drawings or pictures, your observations, tallies or counts of what happened in your experiment.

Example:
Data sheet with people's names and what height each ball bounced to and from.
Photos or pictures of each ball bounce.

Conclusion: What did you find out?

Example: I wanted to find out which ball would bounce higher, a ball full of air or a ball with some air missing. I predicted it would be the ball that had more air within it. I was correct because the ball filled with the most air bounced an average of 4 feet off the ground. The ball that was missing some air bounced an average of 3 feet off the ground.

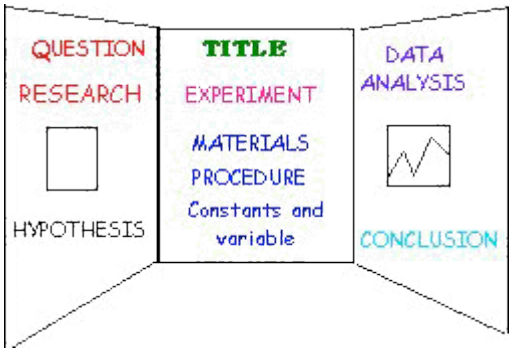
10 Tips to Creating a Winning Display

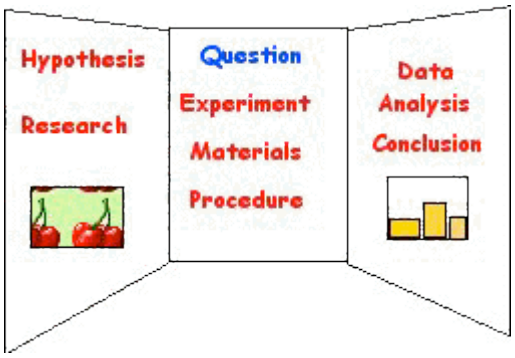
Your display should also include any other items that will help people understand your project, like models or equipment that you used during your experiment.

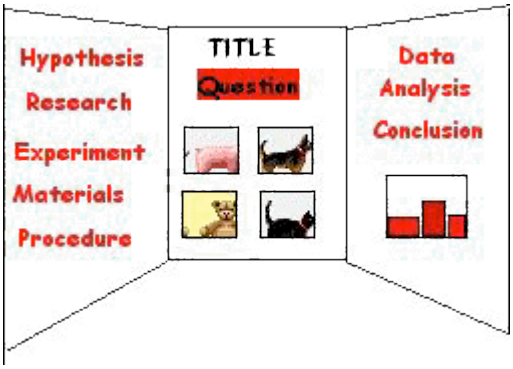
It is important that your display be neat, colorful, and organized. Below are some tips to designing an award-winning display:

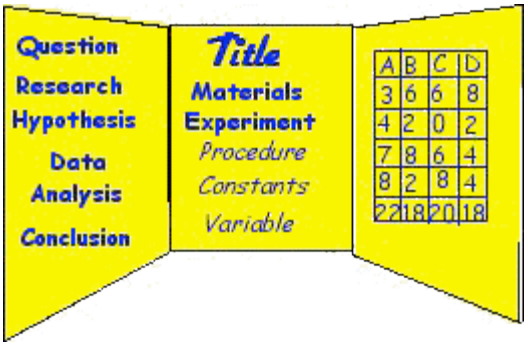
1. Your backboard should be an upright board that sits on top of a table and is able to support itself. It is usually three-sided, but it does not have to be.
2. The backboard should be no larger than 108 inches (274 cm) high, including the exhibit table, 30 inches (76 cm) deep, and 48 inches (122 cm) wide.
3. You can either buy a pre-made backboard or build your own from heavy cardboard or pieces of wood, attached by hinges. **Steer clear of thin poster board or cardboard because they bend too easily.**
4. Use computer graphics or self-stick letters to create headings for each part of your display. Make sure your lettering is easy to read.
5. Type the following parts of your display. Use spell check before you print out the pages. Also, remember that you have limited space on your backboard, so plan ahead.
   - Project title: Your project title should be large enough to be read from a distance of roughly 3 feet (1 meter). Use larger letters for your title than for anything else on your board. This will help it to stand out.
   - Your question
   - Your hypothesis
   - Experiment (including materials and procedure): Summarize your experiment so that it fits on one or two sheets of paper.
   - Data (including tables, graphs, charts, and possibly even photos): If possible, use a color printer to create colorful graphs and tables.
   - Results: Summarize your results so that they fit on one sheet of paper.
   - Conclusions: Your conclusions should be a summary of what you learned. You should try to do this in a paragraph or two. Also, say whether or not your hypothesis is correct.
   - Future experiment plans: As you experimented, you probably thought up new questions, or even how you might do the experiment differently if you were to do it again. Share those ideas in this section.
6. Use colors on your display, but don't get too flashy or the colors could be distracting.
7. Before you stick anything to your backboard, lay the letters and pages onto the board. Space things out evenly and neatly. Rearrange things until it looks just right!

8. Use rubber cement or double-sided tape to post your papers. Avoid using white school glue because it can cause paper to wrinkle.
9. Don't forget to gather any models or other props that you'll want to display on the day of the science fair.
10. Don't forget that your project report and project summary are part of your display! When you set up your display at the science fair, remember to place them on the table in front of your backboard.









Science Fair
Display Tag

Attach to **back** of project in the **upper left-hand corner**

Rockburn Elementary School

Science Fair

March 9th, 2016

Name: _____

Grade: _____

Title: _____

***** All Science Fair Projects must be completed and delivered to school no later than March 9th, 2016.**