



Cornell Science Fair Project Packet

Fill out the
Science Fair Participant Form
(REQUIRED)

<https://forms.gle/gw5eLvuyq8SsqNdrq9>

The science fair is Thursday, Apr 18, 2024 from
6:30-8:00P

Project drop-off will be April 18, in the gym, from
8:35-8:50am or 5:45-6pm. If dropping off in the
evening, plan to exit the building after drop-off.

General Information

Science fair projects can be as extensive or as simple as you like. Use your judgment and help your child pick an idea that he/she is interested in & can be fairly independent with.

Science fair experiments are at-home activities. We do not work on our science fair ideas, experiments or science boards at school.

We appreciate you encouraging your student to -

- Budget his/her time wisely
- Gather materials for the experiment
- Assist your child with any experiment that needs adult supervision
- Take experiment pictures
- Help gather data with your child
- And ultimately have fun with it

While we certainly have a few science materials at school, we do not have additional science materials for students to borrow for their experiments.

Thank you for considering a science fair project and encouraging your child's enthusiasm for science to continue to grow!

Your Science Experiment Checklist

It may be helpful for your child to use this as his/her guide when completing his/her science project.

- Brainstorm and decide on a science experiment idea
- Gather materials to perform your experiment
 - Remember, these experiments can be as simple or extensive as your family chooses. Students may choose an experiment that they have all or most materials already at home.
- Perform your experiment
 - Make observations
 - Maybe even take pictures, create charts or tables
- Complete a science fair board using the scientific method
 - Each piece of the scientific method on your board needs to be written down with an explanation. It can be typed or handwritten.
 - Remember to add those pictures, charts or tables you created
 - See details of the scientific method on page 5 of this packet
 - See details on the science boards on page 4
- Be proud of your experiment and be ready to show it off!

Ways You Can Help Your Child with a Science Project

- 1) Provide a special place where your child can work on his/her science project. This place should be away from distractions such as technology, younger siblings, pets, etc.
- 2) Help your child gather the materials that will be needed to complete the project.
- 3) Make sure that your child takes the necessary steps and precautions to assure the safety of the project. (For example, help your child use a tool or other items that greatly need adult supervision / or adult help).
- 4) Help your child research the information he/she needs to complete the project. If library books are needed, utilize Capital Area District Library or encourage your child to search for a Cornell library on his/her library day. If the library is not needed, perhaps help your child find credible websites to support his/her research.
- 5) Help your child budget his/her time. Assist your child in developing a schedule in order to complete the project on time. Time management for an extended project is one of the biggest lessons children learn from this project.
- 6) Give encouragement and praise! Make sure your child knows that you are interested in his/her project.
- 7) Make sure that your child's project is his/her own work. It is certainly permissible for you to assist and give encouragement, but the project should definitely be your child's effort.
- 8) Congratulate your child on a job well done!

Science Fair Boards

Tri-fold science fair boards will be sold in our main office at Cornell for \$4 each. Boards are available starting Wednesday, April 3. If you know your child always gets picked up in carline on a certain day of the week, perhaps that is the best day for him/her to purchase one. You are welcome to purchase a tri-fold science board from Cornell or purchase your own elsewhere. Either is fine. Tri-fold science boards truly work best. Those boards can stand alone, especially in a crowded science fair. A flat poster board will have to lay flat on a table during the fair.

Science fair boards should include -

- Title (such as “Do Geranium Plants Need Light?”)
- Student’s first and last name
- Six large headers (the six steps of the scientific method) with your written explanation (typed or handwritten), pictures, charts, tables, etc. under each step
 - Purpose
 - Hypothesis
 - Experiment
 - Data (or research)
 - Analysis
 - Conclusion

We have used the scientific method in science. The scientific method is explained in detail on page 5 of this packet.

Make the science board your own and be creative!

Scientific Method

1) Purpose / State the Problem

Pick a subject area you like and would not mind spending time looking into. Ask a question you are interested in learning how to answer. If you need help finding the information, ask your parents, your teachers or librarians. Many people will be glad to help. They just need to be asked.

2) Formulate a hypothesis

Once you have a question or problem in mind, start forming a hypothesis about the outcome of your experiment. The hypothesis is what you think might happen. The main purpose of setting a hypothesis at the beginning is to keep you focused on answering a specific question and to keep your experiment on track. It is not intended to lock you into one idea that cannot be changed later. You may actually prove that your hypothesis is incorrect! Your goal is to learn as much as you can about your topic!

3) Design an experiment

Keep things as simple as possible. Allow enough time for experiments to be repeated and have several "subjects" in your experiment, including a control subject. For example, if you were testing the effect of sunlight on plant growth, you would need several plants (subjects) to be exposed to sunlight and another set of plants in a different condition. Keep a written record of what you have done.

4) Collect data / do research

If at all possible, report information in numbers, not just observations. For example, say your plants grew 1 centimeter rather than just saying your plants look bigger than they did yesterday. Making results quantitative (with numbers) as well as qualitative helps us be more specific in defining our results.

5) Analyze the data

Use mathematical skills, graphs, charts and calculations to represent what the results are telling you about your hypothesis. Use graphs and charts to present your results.

6) Draw a conclusion

Did your results support your hypothesis? If not, that is a result too! For example, did sunlight cause more growth than artificial light? Think along those lines of "Here's what I thought was going to happen and here is what actually happened..." Then, explain why you think it happened the way it did. Your explanations should include not only why you thought this happened, but what scientists might think about what happened. In other words, connect your results to what people know about your topic (explanations from books you have read for example).

Ideas, Ideas and More Ideas!

Over 100 experiment ideas begin here. Feel free to use one of these ideas or encourage your child to brainstorm his/her own!

- 1) How much salt does it take to float an egg?
- 2) What kind of juice cleans pennies best?
- 3) Which dish soap makes the most bubbles?
- 4) Do all watches keep time the same?
- 5) On which surface can a snail move faster - dirt or cement?
- 6) What brand of raisin cereal has the most raisins?
- 7) How can you measure the strength of a magnet?
- 8) Do ants like cheese or sugar better?
- 9) Can the design of a paper airplane make it fly farther?
- 10) Do roots of a plant always grow downward?
- 11) Can you tell what something is just by touching it?
- 12) What kind of things do magnets attract?
- 13) What foods do mealworms prefer?
- 14) How long will it take a teaspoon of food dye to color a glass of still water?
- 15) Does a bath take less water than a shower?
- 16) Can you tell where sound comes from when you are blindfolded?
- 17) Can plants grow without soil?
- 18) Does warm water freeze faster than cool water?
- 19) Do different types of apples have the same number of seeds?
- 20) Do bigger seeds produce bigger plants?
- 21) Which materials absorb the most water?
- 22) Do wheels reduce friction?
- 23) What materials dissolve in water?
- 24) What is the soil around my home made of?
- 25) Does holding a mirror in front of a fish change what a fish does?
- 26) What color of birdseed do birds like best?

- 27) What holds two boards together better - a nail or a screw?
- 28) Will bananas brown faster on the counter or in the refrigerator?
- 29) Does temperature affect the growth of plants?
- 30) Do mint leaves repel ants?
- 31) Does a ball roll farther on grass or dirt?
- 32) Do all objects fall to the ground at the same speed?
- 33) Does anyone in my family have the same fingerprints?
- 34) Which travels faster - a snail or a worm?
- 35) Which paper towel is the strongest?
- 36) Can plants grow from leaves?
- 37) Which dissolves better in water - salt or baking soda?
- 38) Can things be identified by just their smell?
- 39) With which type of battery do toys run longest?
- 40) How far does a snail travel in one minute?
- 41) Do different types of soil hold different amounts of water?
- 42) Will adding bleach to the water of a plant reduce fungus growth?
- 43) Does water with salt boil faster than plain water?
- 44) How far can a person lean without falling?
- 45) Can you tell time without a watch or clock?
- 46) How far can a water balloon be tossed to someone before it breaks?
- 47) Does the shape of a kite affect its flight?
- 48) Does an ice cube melt faster in air or water?
- 49) Does sugar prolong the life of cut flowers?
- 50) How much of an orange is water?
- 51) Which liquid has the highest viscosity?
- 52) Will more air inside a basketball make it bounce higher?
- 53) Does the color of light affect plant growth?
- 54) Does baking soda lower the temperature of water?
- 55) Which brand of popcorn pops the most kernels?
- 56) Which brand of popcorn pops the fastest?
- 57) How much can a caterpillar eat in one day?
- 58) Do plants grow bigger in soil or water?

- 59) Does the color of water affect its evaporation?
- 60) Can you separate salt from water by freezing?
- 61) How does omitting an ingredient affect the taste of a cookie?
- 62) Do suction cups stick equally well to different surfaces?
- 63) How much weight can a growing plant lift?
- 64) Will water with salt evaporate faster than water without salt?
- 65) Does it matter in which direction seeds are planted?
- 66) Which cheese grows mold the fastest?
- 67) Do all colors fade at the same rate?
- 68) Which brand of diaper holds the most water?
- 69) Which kind of cleaner removes the ink stains best?
- 70) Does a plant grow bigger if watered by milk or water?
- 71) Which brand of soap makes the most suds?
- 72) Does a baseball go farther when hit by a wood or metal bat?
- 73) Do living plants give off moisture?
- 74) Using a lever, can one student lift another student who is bigger?
- 75) What gets warmer - sand or dirt?
- 76) Which kind of glue holds two boards together better?
- 77) What type of line carries sound waves best?
- 78) Can the sun's energy be used to clean water?
- 79) Does a green plant add oxygen to its environment?
- 80) Which metal conducts heat best?
- 81) What percentage of corn seeds in a package will germinate?
- 82) Does an earthworm react to light and darkness?
- 83) Does the human tongue have definite areas for certain tastes?
- 84) Can same-type balloons withstand the same amount of pressure?
- 85) Does the viscosity of a liquid affect its boiling point?
- 86) Does surrounding color affect an insect's eating habits?
- 87) Do children's heart rates increase as they get older?
- 88) Can you use a strand of human hair to measure air moisture?
- 89) What materials provide the best insulation?
- 90) Is using two eyes to judge distance more accurate than using one eye?

- 91) Do different kinds of caterpillars eat different amounts of food?
- 92) What plant foods contain starch?
- 93) What keeps things colder - plastic wrap or aluminum foil?
- 94) Does heart rate increase with increasing sound volume?
- 95) Do liquids cool as they evaporate?
- 96) Which way does the wind blow most frequently?
- 97) Does the size of a light bulb affect its energy use?
- 98) For how long a distance can speech be transmitted through a tube?
- 99) Which grows mold faster - moist bread or dry bread?
- 100) What type of soil filters water best?
- 101) Does the color of a material affect its absorption of heat?
- 102) Does sound travel best through solids, liquids or gasses?
- 103) Do sugar crystals grow faster in tap water or distilled water?
- 104) Can you see better if you limit the light that gets to your eye?
- 105) How much water is an apple?
- 106) What common liquids are acid, base or neutral?
- 107) Do taller people run faster than shorter people?
- 108) Does the length of a vibrating object affect sound?
- 109) Does a plant need some darkness to grow?
- 110) Who can balance better on the balls of their feet - boys or girls?
- 111) Does exercise affect heart rate?
- 112) Which dish soap makes the longest lasting suds?
- 113) What are the effects of chlorine on plant growth?
- 114) Which type of oil has the greatest density?
- 115) How accurately do people judge temperatures?
- 116) Your own idea

Be creative and have fun!