

SCIENCE AND ENGINEERING FAIR IDEAS: A PLACE TO START

Here are a few ideas to get you started. You **DO NOT** have to select a science or engineering project from this list. However, if you wish to use/modify an idea from this list, look for project ideas **AT OR ABOVE YOUR GRADE LEVEL**.

Lists Taken From the Following URL's:

<http://chemistry.about.com/od/sciencefairprojectideas/a/8thgradeproject.htm>

<http://chemistry.about.com/od/sciencefairprojectideas/a/7thgradeproject.htm>

<http://chemistry.about.com/od/sciencefairprojectideas/a/6thgradeproject.htm>

<http://chemistry.about.com/od/sciencefairprojectideas/a/5thgradeproject.htm>

<http://chemistry.about.com/od/sciencefairprojectideas/a/engineeringproj.htm>

5th Grade Science Fair Project Ideas

- Does storage temperature affect popcorn popping? Store popcorn in the freezer, refrigerator, at room temperature, and in a heated location. Pop the same amount of each 'sample'. Count how many unpopped kernels remain. Can you explain the results?
- Does food cooked in the microwave cool at the same rate as food cooked in the oven or on the stovetop? Heat foods to the same temperature. Use a thermometer to measure the temperature at set times. Explain your results.
- Can you sip the same amount of liquid through two straws at once as one straw? What about 3 straws?
- Does the color of a light affect how bright it appears in fog? In water?
- Where is the best place to store apples? Where is the best place to store bananas? Are they the same?
- Does the temperature of a magnet affect its magnetic field lines? You can trace the magnetic field lines of a magnet by putting iron filings on a sheet of paper over the magnet.
- What brand of battery lasts the longest?
- Make ice cubes starting with different temperatures of water. Does the starting temperature of water affect how long it takes to freeze?

6th Grade Science Fair Project Ideas

- Do different types of carbonated sodas have different pH?
- Do some plants grow better inside than outside?
- Which type of water contains the lowest amount of chlorine?
- What type of insulation holds in heat the best?
- Do different types of knots affect the breaking strength of a rope?
- Does wiping a doorknob with an antibacterial wipe really reduce the numbers of bacteria?

Does using hand sanitizer really reduce the amount of bacteria on your hands?

- Which cooking method results in the least loss of vitamin C?

- Does temperatures affect the maximum size you can inflate a balloon?
- Does the color of a crayon affect how long of a line it will write?
- Does changing the temperature affect how long a pen will last?
- Do all types of bread mold at the same rate?

7th Grade science fair project ideas

- Which brand of ibuprofen (or could test another type of pain reliever) dissolves the most quickly?
- How well does a football helmet really protect against impact?
- How does the concentration of chlorine in water affect the rate or percentage of seed germination?
- What is the effect of watering schedules on the germination (or growth rate) of seeds from a certain plant?
- How does the presence of de-icer salt affect plant growth?
- Does the bounciness of a golf ball relate to its ability to be hit a long distance?
- Does the mass of a baseball bat relate to the distance the baseball travels?

8th Grade Science Fair Project Ideas

- What effect does soap in water have on plants? Is the effect the same at very low soap concentrations as compared with high concentrations?
- How much plant food is too much?
- What soils best support structures, such as buildings?
- Does air temperature affect how long soap bubbles last? Does relative humidity?
- Can you graft a tomato plant onto a potato plant?
- Do plants react to the presence of other plants? Music? Different colored light?
- What materials [glow under black light](#)? Can you use the UV light to find invisible, possibly smelly, stains in your carpet or elsewhere in your house?
- Will chilling an onion before cutting it [keep you from crying](#)?
- What type of plastic wrap prevents evaporation the best?
- What plastic wrap prevents oxidation the best?
- What percentage of an orange is water?
- Can you make Jell-O using fresh pineapples instead of canned pineapples?
- Does the presence of detergent in water affect plant growth?
- Can a saturated solution of sodium chloride still dissolve Epsom salts?
- Does magnetism affect the growth of plants?
- How does the shape of an ice cube affect how quickly it melts?
- Do different brands of popcorn leave different amounts of unpopped kernels?
- How accurately do egg producers measure eggs?
- How do differences in surfaces affect the adhesion of tape?
- Are all potato chips equally greasy?
- Do the same types of mold grow on all types of bread?

- Does light affect the rate at which foods spoil?
- Can you use a household water filter to remove flavor or color from other liquids?
- Does the power of a microwave affect how well it makes popcorn?
- Do all brands of diapers absorb the same amount of liquid? Does it matter what the liquid is (water as opposed to juice or... um.. urine)?
- Do all dishwashing detergents produce the same amount of bubbles? Clean the same number of dishes?
- Is the nutritional content of different brands of a vegetable (e.g., canned peas) the same?
- How permanent are permanent markers? What solvents (e.g., water, alcohol, vinegar, detergent solution) will remove the ink? Do different brands/types of markers produce the same results?
- Is laundry detergent as effective if you use less than the recommended amount? More?
- What effect do additives have on the crystals? You could add food coloring, flavorings, or other 'impurities'.
- What steps can you take to maximize crystal size? You can affect vibration, humidity, temperature, rate of evaporation, purity of your growth medium, and time allowed for crystal growth.
- How do different factors affect seed germination? Factors that you could test include the intensity, duration, or type of light, the temperature, the amount of water, the presence/absence of certain chemicals, or the presence/absence of soil. You can look at the percentage of seeds that germinate or the rate at which seeds germinate.
- Is a seed affected by its size? Do different size seeds have different germination rates or percentages? Does seed size affect the growth rate or final size of a plant?
- How does cold storage affect the germination of seeds? Factors you can control include the type of seeds, length of storage, temperature of storage, and other variables, such as light and humidity.
- What conditions affect the ripening of fruit? Look at ethylene and enclosing a fruit in a sealed bag, temperature, light, or nearness to other pieces or fruit.
- How are different soils affected by erosion? You can make your own wind or water and evaluate the effects on soil. If you have access to a very cold freezer, you can look at the effects of freeze and thaw cycles.
- How does the pH of soil relate to the pH of the water around the soil? You can [make your own pH paper](#), test the pH of the soil, add water, and then test the pH of the water. Are the two values the same? If not, is there a relationship between them?

ENGINEERING PROJECT IDEAS

Engineering science fair projects can involve designing, building, analyzing, modeling or improving a device. You can also test or create materials. Here are some specific ideas of engineering science fair project ideas.

- What is the best material to put in a sandbag to block water, such as during a flood?
- How tall can you build a tower using only a sheet of paper? You can cut it, fold it, crumple it, but only use that single material. What works best?
- Compare the characteristics of a structure that is constructed using different materials. You can compare strength, corrosion resistance, elasticity... be creative. The trick is to make certain your measurements are truly comparable to each other.
- What can you do with a swim cap to optimize its ability to decrease drag in water? Can you alter the shape? Does one material work substantially better than another?
- Which type of paper towel absorbs the most water? Which brand absorbs the most oil? Are they the same brand?
- What differences do you note in the ability of different soils to support a structure?
- What type of paper airplane flies the furthest? Stays aloft the longest?
- How can you map a magnetic field? Can you construct a device, using iron filings, that can be re-used for field mapping?
- Build a Lego building. Now try to build the same building on an incline, such as a 30° slope. What changes do you need to make in order to make the structure stable?
- How does a change in the construction of a parachute affect flight? Parameters you could examine could include size, shape, material, or method of attachment.

Lots of Other Engineering Fair Ideas at:

<http://www.education.com/science-fair/middle-school/engineering/>