Science Fair Project Ideas

Observations:

- Fingerprints
- Shadows
- Crystals
- Properties of solids, liquids, and gases
- Objects that block and pass light
- Gravity
- Shapes of magnetic fields
- Parts of a flame (candle observation)
- Rocks and minerals
- The moon
- Planets you can see
- Our sun
- Spring constellations
- Local weather
- How to read a weather map
- Clouds
- All about horses (or dogs, frogs, fish, birds, etc.)
- A beaver Home
- Local wildlife
- How animals hide and defend
- Animal tracks
- Raising finches (or rabbits, gerbils, etc.)
- Fish prints
- What makes a bird a bird
- The crayfish
- All about crickets (or bees, beetles, ants, etc.)
- Earthworms
- Spider webs
- Watching an ant colony
- How insects change
- Living things in my yard
- Trees near my home
- Leaf prints
- Parts of a flower
- Roots of different plants
- Inside the egg
- Teeth
- Seashells

Collections:

- Chemical elements (carbon, lead, iron, sulfur, etc.)
- Solids, liquids, and gases
- Rocks
- Rocks from 2 beaches (or areas)
- Different varieties of sand
- Different types of soil
- Fossils
- Bones
- Seashells
- Leaves (indoor or outdoor plants)
- Seeds
- Bark rubbings
- Insects
- Feathers

Models and Demonstrations:

- How a bicycle works
- How a generator (or motor) works
- Simple machines
- Levers
- Pulleys
- How a switch works
- Open and closed circuits
- How fuses work
- How a flashlight works
- How light reflects
- Mixing colors
- How magnets work
- An electromagnet
- Friction
- Newton's 3rd law
- How thermometers work
- Heat and air (convection mobile)
- Does fire give off water?
- Does fire use something in air?
- Does air have weight?
- Does air exert pressure?
- Evaporation
- How are sounds produced?
- Why things float
- Why elevators have counterweights
- A boomerang
- How things move on movie film
- Why the wind blows
- What makes hail?
- What is ground water?
- Inside our earth (model)
- The earth's surface features (model)
- Volcanoes (model)
- Features of the sea floor (model)
- Our solar system (model)
- Galaxies and our milky way (model)
- Optical illusions
- How the ear works (model)
- The any (clay model)
- How seeds travel

- Do plants give off water?
- Tree rings

Experiments

- Magnetic and nonmagnetic materials
- Which magnet is strongest?
- Which materials conduct electricity best?
- Which materials conduct heat best?
- Sounds from different rubber bands (or glasses of water)
- Which toy car rolls furthest?
- Which materials dissolve in water?
- Which paper towel absorbs the most water?
- Will an ice cube melt faster when crushed up?
- Do coins corrode more in salt or fresh water?
- How vinegar affects egg shells
- How a shadow changes throughout the day
- Measuring rainfall with a rain gauge
- Depth of snow at 10 different locations
- Testing a sundial with a clock
- Which brand of raisin bran has the most raisins?
- What a plant needs to grow
- Do plants prefer tap water or distilled water?
- How temperature affects plant growth
- Do plants give off water?
- In which soil do plants grow best?
- Growing potatoes at different locations
- How fast do kidney beans grow?
- Do large apples have more seeds than small ones?
- Do different kinds of apples have different amounts of seeds?
- What conditions do pill bugs prefer (light or dark, moist or dry)?
- Can an earthworm detect light and darkness?
- How far does a mealworm (or snail) travel in one minute?
- What is the best condition for the growth of mold?
- Which bread molds most quickly?
- Which color liquid do hummingbirds prefer?
- What food does a hamster prefer?
- Can people identify flavors of Kool-Aid when blindfolded?

Demonstrations

- How heat is transmitted
- An energy-efficient home
- What makes a hot air balloon rise?
- Expansion of solids, liquids, & gases when heated
- How a thermostat works
- How a toaster works
- The team engine
- The periscope
- Kaleidoscopes
- How binoculars work
- How a microscope works
- How a telescope works
- What makes rainbows?
- Different types of mirrors
- Lenses and what they do
- How a camera works
- How Polaroid glasses work
- What causes light to bend?
- How photocells work
- How a prism works
- The pinhole camera
- The Doppler effect
- What causes echoes
- How a record player works
- How an electric motor works
- How a generator works
- Batteries, how they work
- The telegraph
- What is a transformer?
- What is a transistor?
- Electronic components and their functions
- Hydroelectric power
- The series circuit and the parallel circuit
- How airplanes fly
- How a wing works
- Hero's engine
- How rockets fly
- Looping rollercoasters – how they work
- How a canal lock works
- Primitive clocks
- Distillation
- Solar still
- Water filtration
- pH and how to measure it
- Acids, bases and pH
- How elements combine to make compounds
- Capillary action
- Radioactivity and Geiger counters
- The sextant (or quadrant)
- What is density?
- What is surface tension?
- Weather forecasting
- How a barometer works

- Could chamber
- Effects of air pressure
- Fermentation
- Osmosis
- Phases of the moon (working model)
- Eclipses
- How a geyser works
- Harvesting the wind with windmills
- How clouds form
- Different types of earthquake faults
- Sedimentation
- How a sundial works
- How does the human heart work (model)
- The circulatory system
- The ear
- Tooth decay
- Why a fish has fins
- Bird wings, how they work
- Photosynthesis
- Hydroponics
- The action of yeast in bread
- How yogurt is made
- How cheese is made
- Paper recycling
- Aluminum recycling
- Glass recycling
- Oil wells – how they work
- The submarine

Experiments
* - denotes more difficult projects

Physical Science
- Which metals conduct heat best?
- Measuring the calories in a peanut*
- Which material makes the best heat insulator?
- The efficiency of airspace as an insulator*
- Which color of liquid absorbs the most heat?
- Which color container absorbs the most heat?
- Which color container cools off the quickest?
- How temperature affects the height at which different balls bounce
- How heat affects recording tape*
- Do black bottom pools keep the water warmer?
- How constant is the temperature in my refrigerator?
- How accurate is the temperature knob on my oven?
- The effects of light on dyed materials
- Calculating liquid density using light refraction*
- Materials that absorb sound
- String telephones: what materials work best in conducting sound
- Conductivity of various liquids
- How temperature affects the amount of electricity given off by a solar cell*
- How increasing the number of batteries affects the speed of a motor
- What is the voltage range of the GE-14 bulb?
- The strength of a magnet vs. distance*
- Do magnetic fields affect the sound quality on a recording tape?*
- The effects of washing on dyed materials
- Which fabrics are most fire-resistant?*
- Which toothpaste is most abrasive?*
- The amount of dissolved salt in drinking water*
- Can saltwater be desalted by freezing?
- Popcorn: a graphical analysis of pops per second
- Strength of different woods*
- Ink evaluation with paper chromatography
- Splat – a study in droplet patterns
- Chlorine levels in our drinking water*
- The effects of swimming pool water (chlorine) on hair
- Testing sugar in soft drinks*
- Comparison of vitamin A content in frozen, canned, and fresh peas*
- Which foods have starch (or sugar, fat, protein, etc.)?*
- Testing various orange drinks for vitamin C*
- How fire affects roofing materials*
- How well do various fabrics absorb dye?
- Who has greater body density, boys or girls?*
- How strong is a spider web thread?*
- Think up your own special project idea
- How does the tail affect the flight of a kite?*
- What shutter speed is needed to photograph a moving fan?*
- The velocity of water through different tubes (same size, different material)
- The velocity of water through different tubes (same material, different sizes)
- The velocity of different liquids through the same size tube
- Density of various liquids*

Engineering

- Do oil additives reduce friction on engine parts?*
- A frictionless magnetic bearing*
- How many rotor blades give maximum life for a helicopter?*
- Paper airplane performance
- Robots*
- Using electromagnets to power a car*
- Battle of the bridges*
- Computer projects*
- Testing a car headlight as a satellite dish antenna*
- Storing the sun's energy*
- Power from using air*
- Power from the waves*
- Testing different water turbine blades*

Earth Science

- Charting the apparent motion of Polaris*
- Composition of Hawaiian sand
- Water retention of different soils
- Using a computer for mineral identification
- How much dust falls on your lawn in a month?
- How clean is our air?
- How acid is our rain?
- Speed of clouds using photography
- The effect of wave action on different rocks (using a rock tumbler)
- Wave barriers
- Using feathers to clean up oil spills
- Terracing and how it affects erosion
- The effects of water on different types of wood*

Consumer

- Which firewood gives the most heat per dollar?
- Which solar panel is most efficient?*
- Can a roof overhang cut summer cooling costs?
- A comparative study of various packing materials
- How much money can a pool cover save?
- Which candle is the best buy?
- Which light bulb is most efficient?*
- Are TV commercials louder than regular programming?
- The frequency and length of TV commercials during a one-hour program
- Which battery is the best buy?
- How much does it really cost to run a refrigerator?
- Which stain remover works best?
- Which detergent removes grass stains best?
- Which detergent cuts grease the best?
- Which detergent has the longest-lasting suds?
- The effectiveness of pre-wash products
- Waterproofing agents – which is best?
- The effects of deodorants on clothes
- Which paint protects wood the best?
- The effectiveness of different wood preservatives
- Shampoo evaluation*
- Water solubility of suntan lotions*
- Meat, fat and moisture content of hot dogs*
- Do sausages vary in fat and water content?*
- Which popcorn pops the most?
- Up to bat – wood or aluminum?
- Fishing lines take the strength test
- Sole traction - which sole is the best?*
- Skateboard wheels – which are best?*
- Leaky faucets – how much do they cost us?
- Which uses more water, a shower or a bath?
- Which container (or wrapping) preserves food best?
- Which paper towel is most absorbent?
- Which diaper is best?
- Which lighter has the most fuel?
- Comparison of locks – which is best?
- Which nails have the best holding power?
- The best air pressure for an A.T.C (3-wheeler)*
- How long are yellow lights at various intersections?
- Do parking meters give us the right time?

Life Science

- Does a magnetic field affect the growth of beans?
- Does electricity affect the growth of beans?
- Does temperature affect the growth of plants?
- How doe plants react to different kinds of music?
- How detergents affect the growth of plants*
- Do plants grow better with tap water or distilled water?
- The effects of root bounding on plant growth
- Do roots always grow down?

- Do mirrors affect the way plants grow?
- Does leaf surface area affect plant growth?*
- Leave size vs. location
- Effects of artificial vs. natural light on plants
- Under which color cellophane do plants grow best?
- Can you give a plant too much fertilizer?
- Testing different potting soils
- Which mulch covering works best?
- Does the phase of the moon affect the germination of seeds?*
- Do seeds sprout better in cold or hot climates?
- How does gravity affect the growth of seeds?*
- Does acid rain affect the germination of seeds?*
- Under which thickness of plastic do radishes grow best?
- How the amount of light affects the growth of marigolds
- Do avocados ripen more evenly with the stems left on?
- Which banana has the most sugar – green, yellow, or brown?*
- Comparing the moisture content of five varieties of apples*
- Effects of the environment on popcorn (heat, cold, moisture, time, etc.)*
- Does aspirin prolong the life of cut carnations?
- How detergents affect the growth of algae in pond water*
- A study of marine growth on various surfaces*
- How fast does a mealworm (or snail) travel?
- The speed of snails on different surfaces
- Horsepower of snails*
- The effect of different metals on snails
- Effects of household pesticides on earthworms
- Do earthworms help plants grow?
- Can insects pull more than their own body weight?*
- Ant control – natural vs. chemical repellants*
- Do goldfish grow larger in a larger tank?
- Fish feeding – the effects of light
- Can mice see colors?*
- Can mice distinguish shapes (squares, circles, triangles – associate one with food)*
- Hamster activity and the phases of the moon*
- Can the color of unborn rabbits be predicted?*
- How many grams of food does a rabbit eat per day?
- Chickens and colored corn – which will they eat?
- Will a chicken lay more eggs with rock music playing?*
- Do pyramids preserve food?
- How does our vision affect our taste?*
- Light vs. vision – which color is best?
- Night vision and the effects of colored objects
- The effect of color on depth perception*
- Does a blindfolded person walk in a circle?
- The relationship between age and response time
- Can you recognize your own profile?*
- Left-hand, right-hand transference using a "mirror tracing"
- Reading and remembering with different colored paper – which works best?
- Flexibility: boys vs. girls
- Do adults know U.S. geography? (or math skills, science concepts, etc.)
- How do people react when seeing a teenager shoplift?
- How teeth react to different liquids*
- Do taste buds grow weaker as you get older?*
- Effects of coffee on a person's steady hand
- Effects of caffeine on blood pressure*
- Hot tubs and their effect on blood pressure
- Effects of foul smells on blood pressure*
- Tar and nicotine in five brands of cigarettes*
- Smoking vs. lung capacity
- Lung power of different age groups