



Possible Learning Fair Science Topics

Looking for some possible Learning Fair topics? These ideas might get you started, or might serve to inspire an idea all your own!

Physical Science

Sound

- How does the length of a vibrating body affect sound?
- Does sound travel best through solid, liquid, or gas?
- How does sound travel through a solid?
- What wavelengths of sound are produced by different instruments?
- Can you tell where sound comes from when you are blindfolded?

Heat

- What materials make the best insulators?
- Which color holds heat the longest?
- How does heating water affect the rate at which materials dissolve?
- Is a solar collector an effective way to heat water?
- How much clean water can the sun get out of a pan of muddy water in a single day?
- How long does it take to cook a hot dog with the sun?
- How can you invent a container to keep an ice cube from melting?
- How does temperature affect a balloon-covered bottle?
- What effect does temperature have on the mixing of food coloring in water?
- Which metal conducts heat best?
- How does the color of a material affect its ability to absorb heat?
- How does temperature affect the movement of molecules?
- How does heat affect the movement of molecules in a rubber band?

Light

- How do different light sources affect shadows?
- Do sunglasses really filter out harmful rays?
- Can you see some colors better from a distance than others?
- How can you use principles of light and color to test substances?
- How can you see around corners without using your eyes?
- Can you see some colors better from a distance than others?
- Do all colors fade at the same rate?
- How do different light sources affect shadows?
- How is photographic film developed?
- How do 3-D glasses work?
- What kinds of designs create the best 3-D effects?
- How do the number of mirrors and mirror angles affect the images seen?

Are shadows always dark?
How do movie projectors work?
How do polarizing filters and certain kinds of cellophane tape produce interesting effects with color and light?

Electricity and Magnetism

How can you measure the strength of a magnet?
Does hitting a magnet weaken its magnetic strength?
How is the strength of a magnet affected by glass, plastic, and cardboard?
What conditions are best for producing static electricity?
What materials produce the most static electricity?
How can the effect of static electricity be measured?
What can you do to make a buzzer louder?
How can electricity be used to split water into hydrogen and oxygen?
Does the size of a light bulb affect its energy use?
How does dropping a battery affect its energy use?
How can electricity be generated with a lemon, a potato, or orange juice?

Mechanical Energy

How does the wheel diameter of a skateboard affect its speed?
How fast does water come out of a cup with a single hole in the bottom?
How fast does a ball or a toy car roll down an inclined plane set at different angles?
On what kind of surface will a ball roll the fastest?
How fast does a pendulum swing per minute when the length of the string is varied?
How does the design of a paper airplane affect its flight?
How do pulleys make work easier?
How do levers make work easier?
How do gears affect each other's speed and direction of motion?
How can you measure the amount of potential energy in splatters of paint?
How fast do you turn a bicycle wheel to generate enough electricity to light a small lamp?
Do a variety of watches and clocks keep time the same?
Do all objects fall to the ground at the same speed?
Will more air inside a basketball make it bounce higher?
What factors determine how far a baseball travels when hit?
How does the molecular structure of an eggshell affect its strength?

Matter

How long will it take a drop of food coloring to color a glass of still water?
How do different colors of food coloring vary when mixing with water?
How does the density of a liquid affect the flotation of ice?
How much gas is produced when dissolving one Alka-Seltzer tablet in water? 2? 3?
How does temperature affect how rapidly an Alka-Seltzer table dissolves?
How does the size of the pieces affect how fast chalk dissolves in vinegar?
How does the use of paint prevent the formation of rust?
How do fingerprints differ?
How does the pH of water change as vinegar is added?
What is the acidity of various household products?
What common liquids are acid, base, or neutral?
How can red-cabbage juice be used to determine whether materials are acids or bases?
How can you learn about gases when you can't even see them?
How do solutes affect the freezing point of water?

Which liquid is the most and the least dense of the following: maple syrup, motor oil, cooking oil, dish washing soap, methyl alcohol, milk, vinegar, honey and water?
In which liquids will an ice cube float?
How can a mixture be separated?
How can different varieties of homemade paper be made?
How much carbon dioxide is contained in a 2-liter bottle of soda?
What is the effect of vinegar on various substances?
Which fruits and vegetables sink and which ones float?
How does paper chromatography work?
What materials have a density close to or equal to that of water?
How does a drop of dish washing soap affect the surface tension of food coloring in a bowl of milk?
Which materials absorb the most water?
What materials dissolve in water?
How do various detergents affect the surface tension of water?
How does surface tension in rainwater differ from that of tap water, distilled water, and cooking oil?
How do liquids differ in viscosity?
Do suction cups stick equally well to different surfaces?
How does gravity affect the shape of soap bubbles?

Life Science

Plants

How does water rise in different kinds of plant stems?
How fast do roots grow?
Do roots of a plant always grow down?
How does water flow up from the roots of a plant to its leaves?
Do stems of a plant always grow up?
How does root position affect plant growth?
Can plants grow without soil?
How do grass seedlings respond to light?
How much weight does a rape lose in a week?
Do different types of apples have the same number of seeds?
Will vitamins affect the growth of a plant?
Do bigger seeds produce bigger plants?
How much weight can a growing plant lift?
Does it matter in which direction seeds are planted?
How do seeds react to different chemicals? (safe chemicals only)
What percentage of bean or radish seeds in a package will germinate?
How do fertilizers affect plant growth?
What varieties of mold grow on different kinds of bread?
What is the effect of preservatives on the growth of mold?
How can you measure the amount of moisture that a plant gives off?
How can you keep an apple from turning brown?
What are the growth patterns of yeast?
What is the effect of light on the growth of plants?
How does the color of light affect the growth of plants?
What is the effect of detergent on the germination and growth of seeds?
What kinds of soil are best for the growth of radish seeds?
What is the effect of crowding on plant growth?
Does sugar prolong the life of cut flowers?
What is the effect of enzymes on protein?
Which foods contain starch?

Which foods contain oil?

Human Body

How does heart rate change as an activity is repeated over and over?

Do children's heart rates increase as they get older?

Does heart rate increase with increasing sound volume?

Do boys or girls have a higher resting heart rate?

What happens when minerals are removed from bones?

How accurately can you tell the temperature of an object by touch?

Can you tell what something is just by touching it?

How are certain dominant traits exhibited in the same family?

Is using two eyes to judge distance more accurate than using one eye?

Earth Science

Geology

How do various mineral specimens differ in hardness?

How do various rock and mineral specimens differ in density? mass? volume?

How are crystals formed?

How does temperature affect the growth of crystals?

How much water do different soils hold?

How does Lake Michigan sand differ from sand samples from other parts of the state? country? world?

How does wind affect the wave energy at the Lake Michigan (or any other) beach?

How does particle size of sand and rocks vary at a Lake Michigan beach?

What kinds of rocks and fossils can be found at a Lake Michigan beach?

How much magnetite is in a sample of Lake Michigan sand?

How does a seismograph record the magnitude of an earthquake?

Weather

How accurate are long-range weather forecasts?

What factors affect evaporation and condensation?

Does the color of water affect its rate of evaporation?

How can you make a cloud and rain in a jar?

How can you use a strand of hair to measure the humidity of the air?

How can a wind sock be used to determine wind strength?

Which way does the wind blow most frequently?

How much cooler is it in the shade than in the sun?

How can you tell time by the sun and its shadows?

Environmental Science

What kinds of living things exist in samples of pond water? lake water? river water?

How does a green plant add oxygen to its environment?

How does acid rain affect Milwaukee's water?

How does water temperature affect oil-spill cleanups?

How does detergent affect the growth of algae in a freshwater environment?

What materials are biodegradable?

Are there solid particles in the air we breathe?

Product Evaluation

- Which brand of crayons produces the most bold and beautiful colors?
- Which brand of glue has the best sticking power?
- Which laundry soap can best clean a grass stain? juice stain? coffee stain?
- What kind of cleaner removes magic marker stains the best?
- What brand of paper towel is the most absorbent?
- How do three brands of toothpaste compare in their whitening ability?
- Which brand of battery makes toys run longer?
- What brand of dish washing liquid produces the most suds?
- What brand of dish washing liquid makes the longest lasting suds?
- Will nylon disintegrate as fast as cotton?
- How do various brands of markers differ from each other?
- Which brand of diaper holds more water?
- How does salty water affect the absorbing ability of a diaper?
- What is the best shape for a kite?
- How effective are various brands of sun screen?
- How effective are various brands of shampoo?
- Which brand of popcorn pops the most kernels?
- Which brand of popcorn pops the biggest kernels?
- What brand of cereal stays crunchy the longest?
- How does omitting an ingredient affect the taste of a cookie? cake? muffin? other?

Invention

- How can you invent a way to make a backpack burglar-proof?
- How can you create an invention to clean a dirty sample of water?
- How can you invent a time-keeping device that operates without batteries?
- How can you build the strongest bridge with one piece of regular paper?
- What inventions can you create using one piece of paper, tape, ten straws and four lifesavers?
- What safe inventions can you create using a battery, small hobby motor and found objects around your home?
- How can you invent and learn how to play an original musical instrument?
- How can you invent a safe and original toy?
- How can you create an invention using pulleys and gears?
- How can you invent a safe device that will make your life easier, better or more interesting?