

MAPLE GROVE SCIENCE FAIR 2009
Science - Light the Spark!

SCIENCE FAIR PROJECT QUESTION IDEAS:

Insects, Plants and Animals

- Why can insects land and walk across water?
- Who has a faster heartbeat: dog, cat, tortoise or snake?
- If I remove any one of these 4 elements from a seed, will it still grow: light, water, soil, air?
- If I feed the same kind of plants different liquids, how will it affect their growth and health?
- What smells do dogs like best?
- How do different types of music affect plant growth?
- What type of birdseed do the birds in my yard like best?
- Do plants grow toward the light?
- Do different kinds of seeds germinate at the same rate?
- How long does it take for a tadpole to form legs they can walk on?
- Do flowers absorb water with nutrients in it faster than they absorb plain water?
- Which flower soaks up water faster, and in which area?
- How does acid affect seed germination?
- How long will it take to grow a plant from a seed?
- What type of food will make the tadpoles grow the fastest?
- What is more important to plants, water or light?
- Does one part of a puppy grow faster than another?
- Why do the lima bean plants grow sideways?
- Will marigolds grow better with water or "Nature Utopian?"
- Will a rat learn from experience?
- How long does it take different wilted flowers to revive?
- Are dogs colorblind?
- How do worms help the soil?
- Why do some animals go around in a circle before they lie down and fall asleep?
- Why are worms slimy?
- What happens when you give a plant too much salt?
- Which breed of dog is the smartest?
- What food do Colorado birds like best?
- What is a Guinea Pig's favorite color?
- Who eats more, an old guinea pig, or a young one?
- What music makes parakeets sing louder?
- Do warm-blooded or cold-blooded animals produce more carbon dioxide?
- How does water move through leaves?
- Where do plants grow best?
- If dogs drank people-drinks, what would happen to their teeth?
- Can you change the color of a plant by changing the color of its water?
- What will lima beans grow best in?
- Does my dog prefer some foods over others?

Air, Heat, Temperature, Liquids, and Light

- Does temperature affect how a magnet works?
- How does water flow uphill?
- How does the upstairs shower work?
- Which weighs more: snow, rain, or ice?
- Why does dry ice squeal when you put metal to it?
- Will bottles filled with different levels of water play music?
- Does the shape of ice determine how quickly it melts?
- What liquid do flowers grow best in?
- How does temperature affect air pressure?
- What effect does pressure have on melting ice?
- Does temperature affect how well we can smell food?
- Is fresh or saltwater more buoyant?
- What happens to balloons when they get hot or cold?
- Can you make an ice cube be sticky?
- Why is the sky blue?
- Which liquid freezes fastest: Kool-Aid, apple juice, syrup, or water?
- How do rainbows work?
- Why does a jar of water without a lid go lower than a jar with a lid?
- What kind of effect does hot, cold, regular tap water or salt water have on an egg?
- What effect does water temperature have on yeast bread?
- How does a snowflake take shape?
- Why does some snow make better snowballs than other snow?
- How do volcanoes explode?
- Can pressure cause ice to change to liquid?
- What is osmosis?
- What kind of materials shrink when washed in hot water? Which ones stay the same size?
- How can you tell when a storm is coming?
- What happens to clouds when it rains or snows?
- How does the time for a candle to burn out change with the amount of air it gets?
- Which color is the hottest color?
- Why does it seem that darker colors get hotter easier than lighter colors?
- Does temperature affect smell?
- Which motor oil withstands heat the best?
- Will the water in a closed environment evaporate or will it recycle into the plants?
- What effect will the amount of light have on a solar car?
- How do stalactites and stalactites grow?
- How do icicles form?
- How does a light switch work?
- How do tornadoes form and where?
- Does our water filter really work?
- In a tub of water, do soap bubbles group together in a consistent pattern, and does water temperature affect the geometric arrangement of the soap bubbles?
- Is it possible to bend a beam of light?
- Will water with salt evaporate faster than water without?
- Does brown sugar boil, melt (when frozen), and evaporate at a different rate than refined sugar water?
- Does the amount of air in a basketball influence how high it bounces?
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Electricity, Magnetism and Sound

- How many lemons does it take to light a light bulb?
- What light source is the hottest and why?
- Can sound really break glass?
- What does electricity go through best: wire or pencil?
- Does all metal stick to a magnet?
- Can you make a magnet with electricity?
- Can you see magnetism?
- Which materials conduct electricity and which materials are magnetic and why?
- Does the power from a wind turbine vary with the wind speed?
- Can you make the beam of light from a flashlight bend?
- Does the size and power of a telescope determine how big, bright, and clear a star appears?
- What kinds of materials conduct electricity?
- Is it possible to make a battery out of a lemon?
- How does electricity flow through different materials?
- Do different materials and techniques in making an electromagnet affect its magnetic field?
- Can you find the percentages of zinc and copper in a penny by measuring its weight and volume?
- How do radio waves work?
- What causes a solar eclipse?
- What does silence sound like?
- What liquids flow the fastest?
- Which battery brand lasts the longest, and does cold temperature affect the results?

Chemistry, Cooking and Making Products

- Does slime stretch more with hot, warm, or cold air?
- Does deodorant soap really kill bacteria?
- What does each ingredient in a chocolate chip recipe? What happens if I leave one out?
- What makes cookies taste good
- Which brand of gum has the flavor that lasts the longest?
- Which clothes soap works the best?
- Which brand of cookie do kids like best?
- Which brand of crackers do kids like best?
- Does more sugar make the crystals go faster?
- How are crystals different?
- Do crystals grow better in sunlight or in shade?
- Will crystals grow without a solid mass such as a rock to attach to?
- What differences will occur when different salts are used as a crystal's main base?
- Do "pop rocks" react differently when mixed with Coke instead of water?
- Which dish soap makes the most bubbles?
- What type of potato chips has the most grease and which do people prefer?
- How does an apple rot when it's whole, cut in half, and cut in little pieces?
- Will club soda remove stains better than stain remover?
- Which brand of dishwashing detergent makes the biggest bubbles?
- Can a nail be made rustproof?
- How does metal rust?
- How does changing the recipe for cookies affect the results?
- How long does it take a grape to turn into a raisin?
- What batteries last longer – alkaline or rechargeable?
- Does bread mold faster with or without preservatives?
- Which juice (OJ, apple, cranberry, or grapefruit) will clean a penny the quickest?
- How much yeast does it take to blow up a balloon in a bottle?
- Which paper towel is the most absorbent?
- What brand of dog shampoo works best?
- Do different mold grow on different types of breads?

Chemistry, Cooking and Making Products

- Are some pillows softer than others?
- Are Bubbles Always Round?
- Are some molecules bigger than others?
- How do different power of lights make a solar car go faster or slower?
- How does popcorn pop?
- Does mold on different food grow better in cold, dark places or warm, lighted places?
- Which brand of popcorn pops the most kernels?
- How is muddy water cleaned so it is pure water?
- Why do stones split or crack?
- What different materials can you use to make stalactites?
- What solids can cause a chemical in a carbonated drink? Why?
- Which color of sunglasses blocks the most sunlight?
- How much vitamin C do juices contain?
- What fruit dries the fastest in a dehydrator?
- Why do things taste sweet or sour?
- What is the difference between cola pops?
- What is fermentation and what causes it to happen?
- What kinds of breads grow mold faster?
- What goes bad faster, milk or cream cheese?
- How much vitamin C do juices contain?
- What gum flavor will last the longest?
- Which makes the best sand castle: milk, orange juice, white grape juice, and Sprite?
- Does hot sauce change the way food tastes?
- What nut contains the most energy?
- What type of fabric is easiest to dye, and does color and temperature make a difference?
- Can I grow penicillin mold at home?
- Which sand holds better together, Mexican sand or Hawaiian sand?
- Which type of cheese gets moldy first?
- Which brand of paper towels is the strongest?
- Why do dog treats and graham crackers stay hard in baby oil, but break-up in water?
- How do different liquids affect an eggshell?
- Which tastes better, home-made soda or store-bought?
- What happens when you put different foods in vinegar?

- Aerodynamics

- How far can my partner be before the bubble pops?
- If I put three different size marbles up on an incline plane, would they have energy? Which one will have the most?
- What kind of surface will my car go fastest on?
- What kind of cups stack highest?
- How high and how much liquid comes out of a soda bottle with mentos?
- Can I make a balloon float with just a hairdryer?
- What ball can you throw further?
- Which car is faster – lighter or heavier?
- How much weight can jello hold?
- Which fruits and vegetables will float in water?
- Which paper airplane style will fly the best?
- Does the size or shape of a seashell affect whether you can hear the ocean inside it?
- If you fold a paper airplane's wings upward, does it fly faster?
- Why do airplanes fly?
- Which paper airplane design keeps the airplane in the air the longest?
- What type of bridge holds the most weight?
- How do whirlpools occur?
- Which tape is the strongest?
- Which is harder; a baseball or a hockey puck?
- Why am I right side up on one side of the spoon and upside down on the other?
- Will a foam spaceship fly better than a paper spaceship?
- Why do some objects float and others sink? Does the size or shape matter?
- How does jet propulsion work?
- Which ramp coating will offer the least resistance to a rolling toy car?
- Can water be used as a power source?
- What prevents perpetual motion on earth?
- What keeps metal ship from sinking?
- Will a hot air balloon rise faster in cold or hot weather?
- What is the easiest and/or fastest way to carry the inner tubes to the rides at Water World?
- Which rocks of the same size are the heaviest?
- Do little stuffed animals fall faster than big ones?
- Which brand of rocket fuel propels a canister rocket best?
- Will a balloon blow up inside a bottle
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Human Body, Human Behavior

- Who has the better memory men or women?
- Does drinking coffee affect memory?
- What is the percentage of people that observe the cross-walk signal?
- Which energy drink gives you more energy?
- What changes your body temperature?
- Which place has the most germs: home or school?
- Who has better memories – boys or girls?
- Does my height change from the time I go to bed and wake up?
- How do you hear sounds?
- How does smell affect your taste?
- Can I taste something if I hold my nose?
- How important is smell in being able to taste food?
- Do our eyes help our balance?
- In what conditions do bacteria grow the best on your hand?
- Can you imprint false memory?
- What makes you "burp?"
- What is the effect of light on the pupil?
- Can we really taste the difference between waters?
- Why does your tongue stick to metal when it is cold outside?
- Does drinking hot chocolate improve performance on "minute-math" tests?
- Can people tell the difference between store brand and national brand cereals?
- Does hair or fur grow faster?
- Who blinks more in a minute when you add up both people's blinks? My dog and me, or my dad and me?
- If you tell a lie, will your body give you away?
- How far away can you hear and can you use a machine to hear for you?
- How effective are subliminal messages?
- Do girls or boys put a puzzle together faster?
- Do different types of music affect your math test grade?
- Who is better at estimating (measurement & time), boys, girls, men, or women?
- Does being in a hot tub raise or lower your blood pressure?
- Do adults get dizzy faster than kids?
- How does heart rate vary according to the content of dreams?
- Are people's dreams related to what they experienced before they had the dream?
- Is it easier to say a tongue-twister if you read it and hear it, or if you just hear it?
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QUESTIONS WHICH CAN BE MADE INTO AN EXPERIMENT:

(Many "how" and "why" questions result in projects or models which can be turned into experiments by asking "how could I change a variable?")

- Why are some pennies shiny?what solutions make pennies shine?
- Why do leaves change colors?.....does the temperature affect how leaves change colors?
- How do you make a marshmallow?.....do different ingredients affect the taste of the marshmallow?
- How does yeast make bread rise?.....at what rate does bread rise when you add different amounts of yeast?

SOME QUESTIONS ARE HARD TO MAKE INTO AN EXPERIMENT:

- How big is the moon?
- Why is the sky blue?