

## MAPLE GROVE SCIENCE FAIR 2019

### SCIENCE FAIR EXPERIMENT IDEAS:

#### Plants

- If I remove any one of these 4 elements from a seed, will it still grow: light, water, soil, air?
- What do plants grow best with: plant food, soil, sand, moon balls or cotton balls?
- If I feed the same kind of plants different liquids, how will it affect their growth and health?
- What liquid do flowers grow best in?
- What liquid keeps cut flowers fresh the longest?
- Do flowers absorb water with nutrients in it faster than they absorb plain water?
- Which liquid would kill a cut flower fastest? Vinegar, Drano, sap water or coffee?
- Do flowers drink hot or cold water faster?
- Which flower soaks up water faster, and in which area?
- Will marigolds grow better with water or "Nature Utopian?"
- Can you change the color of a plant by changing the color of its water?
- Which flower absorbs dye-water faster: a white rose or a white carnation?
- What is the best amount of water for growing sunflower?
- Which will make a plant grow better, water or milk?
- How long does it take different wilted flowers to revive?
- What is more important to plants, water or light?
- Do plants grow toward the light?
- Why do the lima bean plants grow sideways?
- What will lima beans grow best in?
- Do different kinds of seeds germinate at the same rate?
- How long will it take to grow a plant from a seed?
- How does acid affect seed germination?
- What happens when you give a plant too much salt?
- Where do plants grow best?
- How do different types of music affect plant growth?

#### Animals

- What type of birdseed do the birds in my yard like best?
- What food do Colorado birds like best?
- What music makes parakeets sing louder?
- How do birds talk to each other?
- Why do big birds and little birds soar differently?
- What type of food will make the tadpoles grow the fastest?
- How long does it take for a tadpole to form legs they can walk on?
- Will a rat learn from experience?
- How do worms help the soil?
- Which fruit or vegetable disappears first in my worm composter?

- Why are worms slimy?
- What is a Guinea Pig's favorite color?
- Who eats more, an old guinea pig, or a young one?
- Can a guinea pig (2) learn a maze from experience?
- What type of toy entertains my cat the most?
- Who has a faster heartbeat: dog, cat, tortoise or snake?
- Does one part of a puppy grow faster than another?
- Are dogs colorblind?
- Why do some animals go around in a circle before they lie down and fall asleep?
- What smells do dogs like best?
- Which breed of dog is the smartest?
- Does my dog prefer some foods over others?
- If dogs drank people-drinks, what would happen to their teeth?
- What's my cat's favorite color?
- What type of toy entertains a cat the most?
- Do warm-blooded or cold-blooded animals produce more carbon dioxide?
- Is big foot real?
- Which butterflies will grow better in the dark or the light?
- Which foods were easiest for dinosaurs to digest?

### **Light**

- What effect will the amount of light have on a solar car?
- Can I have a motor and a light work at the same time using a single battery? If so, how?
- Is it possible to bend a beam of light?
- What light source is the hottest and why?
- Can you make the beam of light from a flashlight bend?
- Is the brightness of the sun the same as the brightness of a lamp?
- Does the color of source light affect the color of the rainbow produced

### **Air Pressure, Temperature**

- Does temperature affect how a magnet works?
- Does temperature affect smell?
- Which color makes water hotter?
- Which weighs more: snow, rain, or ice?
- Why does dry ice squeal when you put metal to it?
- Does the shape of ice determine how quickly it melts?
- Will ice cubes float in other liquids besides water?
- Can pressure cause ice to change to liquid?
- Can you make an ice cube be sticky?
- How does temperature affect air pressure?
- What effect does pressure have on melting ice?
- Which affects evaporation more - temperature or wind?

- Which motor oil withstands heat the best?
- Does temperature affect how well we can smell food?
- Does a peep or soap get bigger in the microwave
- What happens to balloons when they get hot or cold?
- Does fire need air to burn?
- Which liquid freezes fastest: Kool-Aid, apple juice, syrup, or water?
- Does brown sugar boil, melt and evaporate at a different rate than refined sugar water?
- How do volcanoes explode?
- What ingredients make the best volcanic eruption?
- What is the best air pressure for a soccer ball?
- What kind of materials shrink when washed in hot water? Which ones stay the same size?
- What type of fabric is easiest to dye, and does color and temperature make a difference?
- Why does it seem that darker colors get hotter easier than lighter colors?
- How does the time for a candle to burn out change with the amount of air it gets?
- Which color is the hottest color?
- Which markers last the longest with their caps off?
- 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?
- What shape bubbles can you make?
- Does the amount of air in a basketball influence how high it bounces?

### **Weather**

- How do rainbows work?
- What is osmosis?
- 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 can you tell when a storm is coming?
- What happens to clouds when it rains or snows?
- How do tornadoes form and where?
- What makes the sun rise and sun set? What makes the moon visible at night?
- How do tornados form and where?

### **Water/Liquids**

- How does water move through leaves?
- Why do things like leaves stick to my trampoline even when I jump?
- How does water flow uphill?
- 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?
- Will bottles filled with different levels of water play music?
- Is fresh or saltwater more buoyant?
- Will the water in a closed environment evaporate or will it recycle into the plants?

- What liquids flow the fastest?
- Of common liquids which ones are acids and which ones are bases?
- How do different liquids affect color?
- How do icicles form?
- Does our water filter really work?
- What filters dirty water best: cotton balls, sand, or wood chips?
- Will water with salt evaporate faster than water without?
- How is muddy water cleaned so it is pure water?
- Can water be used as a power source?

### **Electricity, Magnetism and Sound**

- Does all metal stick to a magnet?
- Can you make a magnet with electricity?
- Can you see magnetism?
- Do different materials and techniques in making an electromagnet affect its magnetic field?
- Can a potato be used as a source of energy to run a clock?
- How do radio waves work?
- How many lemons does it take to light a light bulb?
- What does electricity go through best: wire or pencil?
- Will a light bulb stay lit longer with a melon or an orange?
- Which materials conduct electricity and which materials are magnetic and why?
- Do electric sparks make radio waves?
- How does a light switch work?
- Does the power from a wind turbine vary with the wind speed?
- Does the size and power of a telescope determine how big, bright, and clear a star appears?
- What kinds of materials conduct electricity?
- How does electricity flow through different materials?
- How do electrical circuits work and is electricity only conducted through metal?
- Can you find the percentages of zinc and copper in a penny by measuring its weight and volume?
- Which frozen pipe will burst first brass, copper, iron, galvanized, and PVC.
- What causes a solar eclipse?
- Which battery brand lasts the longest, and does cold temperature affect the results?
- What does silence sound like?
- Can sound really break glass?

### **Food/Cooking**

- What substance cools your mouth the fastest after eating spicy food?
- Does lighter fluid and the amount of lighter fluid on charcoal briquets speed up cooking time?
- How and why do tomatoes eat through aluminum foil?
- Do tomato plants need sleep?
- How long does it take a grape to turn into a raisin?

- How does popcorn pop?
- Which brand of popcorn pops the most kernels?
- Which type of popcorn do people like best: cheddar, cinnamon, or cranberry?
- How does changing the recipe for cookies affect the results?
- What does each ingredient in a chocolate chip recipe? What happens if I leave one out?
- What is the perfect amount of baking soda for a batch of chocolate chip cookies?
- Do chocolate chip cookies rise better with baking soda or baking powder?
- What makes cookies taste good
- Which brand of cookie do kids like best?
- The Chemistry of Baking a Cake: What does each ingredient do?
- Which brand of crackers do kids like best?
- Which brand of gum has the flavor that lasts the longest?
- Which kind of gum blows the biggest bubbles?
- How many licks does it take to get to the center of a tootsie pop?
- Why the first pancake is always different?
- Can people tell the difference between store brand and national brand cereals?
- Do people like Minute Maid orange juice, Tropicana orange juice or Kroger's concentrate orange juice the most or least?
- Does the brand of ice cream affect the taste?
- How much vitamin C do juices contain?
- Which tastes better, home-made soda or store-bought?
- How much sugar is in a can of soda and what does it look like?
- What is the difference between cola pops?
- Which pop will explode and travel the farthest?
- What solids can cause a chemical in a carbonated drink? Why?
- What fruit dries the fastest in a dehydrator?
- Does hot sauce change the way food tastes?
- What nut contains the most energy?
- Why does a candy bar give you a quick energy burst then make you want more?
- Which energy drink gives you more energy?
- Which drink is the best for you before you exercise?
- What type of potato chips has the most grease and which do people prefer?

### **Chemical Affects on Food**

- Does mold on different food grow better in cold, dark places or warm, lighted places?
- Do different mold grow on different types of breads?
- Does bread mold faster with or without preservatives?
- Which type of cheese gets moldy first?
- What kinds of breads grow mold faster?
- What goes bad faster, milk or cream cheese?
- Can I grow penicillin mold at home?
- 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 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?
- Why do things taste sweet or sour?
- What happens when a bowl of ketchup and a bowl of ranch dressing is left unrefrigerated for 30 days?
- What is fermentation and what causes it to happen?
- Do different foods produce the same amount of gas when processed?
- Why does cabbage juice change color?
- What substances would cool someone's mouth the most after eating jalapeños?
- Which makes the best sand castle: milk, orange juice, white grape juice, and Sprite?
- Why do dog treats and graham crackers stay hard in baby oil, but break-up in water?
- Can vinegar dissolve an eggshell and why? What is left?
- What happens when you put different foods in vinegar? What happens to a piece of food from the six major food groups when it is put into regular coke, diet coke and coke zero.
- Which fruits and vegetables will float in water?
- When combined how does the carbon dioxide in soda pop affect the buoyancy of raisins?

### Chemistry

- What batteries last longer – alkaline or rechargeable?
- Can Ordinary Batteries Be Recharged
- Can a nail be made rustproof?
- How does metal rust?
- Which paper towel is the most absorbent?
- What tape sticks to paper the best: Office Max or 3M?
- How can I make my crayons more stronger?
- What brand of dog shampoo works best?
- What is the effectiveness of different sunscreen products for blocking UV rays?
- Which place has the most germs: home or school?
- Does slime stretch more with hot, warm, or cold air?
- Are some pillows softer than others?
- Does deodorant soap really kill bacteria?
- Which anti-per spirant works the best?"
- Are bubbles always round?
- Which kitchen ingredient dissolves fastest in water?
- Which brand of dishwashing detergent makes the biggest bubbles?
- Which clothes soap works the best?
- Are some molecules bigger than others?
- Which color of sunglasses blocks the most sunlight?
- Which sand holds better together, Mexican sand or Hawaiian sand?
- Which type of invisible ink shows up on what type of paper the best?
- Why can hydrogen peroxide be used as a disinfectant and for rocketry?

- Which is harder; a baseball or a hockey puck?
- What type of helmet is the safest for biking
- How does Airborne react in different liquids?

### **Crystals/Rocks**

- Why do stones split or crack?
- 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?
- What different materials can you use to make stalactites?
- Why do some kinds of rocks bubble when put acid or vinegar on them?
- Which rocks of the same size are the heaviest?

### **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?
- Which of my hot wheels cars goes the fastest?
- Which car is faster – lighter or heavier?
- Which ramp coating will offer the least resistance to a rolling toy car?
- Will my submarine sink deeper and faster in salty water or soda?
- What keeps metal ship from sinking?
- Which paper airplane style will fly the best?
- 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?
- Will a hot air balloon rise faster in cold or hot weather?
- Can I make a balloon float with just a hairdryer?
- Will a balloon blow up inside a bottle
- Which goes farther, slim water balloon or fat water balloon?
- Will a foam spaceship fly better than a paper spaceship?
- What kind of cups stack highest?
- What structure will hold better triangle or square?
- How high and how much liquid comes out of a soda bottle with mentos?
- What ball can you throw further?
- How much weight can jello hold?
- What type of bridge holds the most weight?

- Does the size or shape of a seashell affect whether you can hear the ocean inside it?
- How do whirlpools occur?
- Why am I right side up on one side of the spoon and upside down on the other?
- Why do some objects float and others sink? Does the size or shape matter?
- What prevents perpetual motion on earth?
- What is the easiest and/or fastest way to carry the inner tubes to the rides at Water World?
- Do little stuffed animals fall faster than big ones?
- Which brand of rocket fuel propels a canister rocket best?
- What kind of rocket fuels propels water bottle rocket best?

### **5 Senses**

- Do children remember numbers better by hearing or seeing?
- What is the effect of light on the pupil?
- Do our eyes help our balance?
- How do you hear sounds?
- How far away can you hear and can you use a machine to hear for you?
- 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?
- Can we really taste the difference between waters?

### **Human Body/Behavior**

- Who has the better memory men or women?
- Who has better memories – boys or girl?
- Do people have a better visual or auditory memory?
- Does drinking coffee affect memory?
- Does caffeine affect our pulse rate?
- Which drink makes swallowing a pill easier and does the same drink dissolve it faster?
- Can you imprint false memory?
- Does drinking hot chocolate affect the minute-math test?
- Do my family members have common shapes in their fingerprints?
- Which family member has the grossest mouth?
- What is the percentage of people that observe the cross-walk signal?
- What changes your body temperature?
- How is a boy's average body temperature different from a girl's?
- Does my height change from the time I go to bed and wake up?
- In what conditions do bacteria grow the best on your hand?
- Does double dipping cause more bacteria than regular dipping?
- What makes you "burp?"
- Do people like soda with pure sugar or high fructose corn syrup better?
- Why does your tongue stick to metal when it is cold outside?
- Does hair or fur grow faster?

- Who blinks more in a minute? My dog and me, or my dad and me?
- If you tell a lie, will your body give you away?
- What do most car drivers do at stop signs? Stop or slow down?
- 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?
- How does sweat make people cool?