

## Sample Science Investigation Questions

### ***Force and Motion:***

- Does the number of coils of wire in an electromagnet affect its magnetic strength?
- Does voltage affect the strength of an electromagnet?
- Does the weight of a permanent magnet affect its strength?
- Does the height of a ramp affect the distance a toy car will roll?
- Does the mass of a car affect the distance it will roll from the bottom of a ramp?
- Does the material that the ramp is made of affect the distance a toy car will roll?
- Does the distance a rubber band is stretched affect how far it will fly when released?
- Does the amount of weight suspended from a rubber band affect how far it stretches?
- Does the weight of a wooden block affect the force that it takes to drag it across a table top?
- Does the height from which a rubber ball is released affect the height that it bounces?
- Does the surface of the ground affect how far a ball will roll?
- Does the amount of air (pressure) in a basketball affect how high it bounces?
- Does the number of blades of a propeller affect how fast it will turn in the wind?
- Does the angle of a wing affect the amount of lift it develops in the wind?
- Does the number of pulleys affect the force necessary to lift a weight?
- Does the length of a lever (from the fulcrum) affect the force necessary to lift a weight?
- Does the length of a pendulum affect its period (time it takes to swing)?
- Does the weight of a pendulum affect its period (time that it takes to swing)?

### ***Heat and Temperature:***

- Does the temperature of the water affect how fast an Alka-Seltzer tablet will dissolve?
- Does the color of water affect the time it takes to freeze?
- Does the kind of water affect how long it takes to boil?
- Does the kind of water affect how quickly it will evaporate?
- Does the surface area of a container of water affect its evaporation rate?
- Does the depth of the water affect its evaporation rate?
- Does the temperature of water affect its evaporation rate?
- Does the kind of material used to insulate a refrigerated can of soda affect its temperature change?
- Does the color of a can affect its rate of temperature change when placed in the sun?
- Does the kind of soil (sand, gravel, clay) affect its temperature change in the sun?
- Does the color of a crayon affect its melting rate?
- Does the temperature of a tennis ball affect how high it bounces when dropped?
- Does the shape of an ice cube affect how slowly it melts?
- Does the mass of an ice cube affect how slowly it melts?

- Does temperature affect the density of a liquid?
- Does the temperature of water affect the height at which an object floats?

***Plants:***

- Does the type of fertilizer affect the height that a bean plant grows?
- Does the amount of fertilizer affect the height that grass will grow?
- Does the kind of water affect the number of leaves on a Marigold plant?
- Does the size of a bean seed affect its germination rate?
- Does temperature affect the germination rate of bean seeds?
- Does the amount of sunlight affect the germination rate of radish seeds?
- Does the amount of moisture affect the germination rate of pepper seeds?
- Does temperature affect the height of petunias?
- Does classical music affect the height of tomato plants?
- Does the diameter of an apple affect the number of seeds inside?
- Does the circumference of a pumpkin affect the number of seeds inside?
- Does water drainage affect the height of sunflower plants?

***Non-Vertebrate Animals:***

- Does the type of surface affect the distance a meal worm travels?
- Does the moisture of the surface affect the distance a meal worm travels?
- Does the temperature affect the distance that a meal worm travels?
- Does the amount of light affect the distance that a meal worm travels?
- Does playing rock music affect the distance that a meal worm travels?
- Does the number of earthworms in soil affect the germination rate of radish seeds?
- Does temperature affect the number of “chirps” per minute that crickets make?
- Does the color of light affect how far earthworms with travel?
- Does the moisture of the surface affect the distance that an earthworm travels?
- Does the color of light affect how many insects are attracted to it at night?

***Earth/Space and Environmental:***

- Does the kind of soil affect the rate of water erosion?
- Does moisture affect the rate of decomposition in a compost pile?
- Does the slope of the surface affect the rate of water erosion?
- Does the kind of soil affect how much water it will hold (retain)?
- Does salt affect the freezing rate of water?
- Does wind speed affect the evaporation rate of water?
- Does the rotation of the earth (time of the day) affect the length of a shadow?
- Does the kind of water (fresh or salt) affect how long it takes an ice cube to melt?
- Does the velocity of the wind affect the height of waves?
- Does the direction of the wind affect the outdoor temperature?
- Does the velocity of the wind affect the timing (high and low) of the tides?
- Does barometric pressure affect the chance of rainfall?
- Does the phase of the moon affect the height of the tides?
- Does gravel affect the rate that sand erodes on a beach?