

STEM Fair Sample Questions

Sample List for Teachers

This list is designed for teachers to support students who are having difficulty coming up with a topic. The grades listed in parentheses are simply to indicate curricular connections, not to limit those topics to a particular grade.

Science & Engineering:

How does the weight of a magnet affect its strength? (Gr. 3)

How does the height of a ramp affect the distance a toy car will roll? (Gr. 3, 4)

How does the mass of a car affect the distance it will travel? (Gr. 3, 4)

How does the distance a rubber band is stretched affect how far it will fly when released?

How does the amount of weight suspended from a rubber band affect how far it stretches?

How does the surface of the ground affect how far a ball will roll? (Gr. 3)

How does the amount of air (pressure) in a basketball affect how high it bounces? (Gr. 3)

How does the length of a pendulum affect its period (time it takes to swing)?

How does the weight of a pendulum affect its period (time that it takes to swing)?

How does catapult design affect the launch of a ping pong ball?

How does paper airplane design affect the distance the paper airplane travels?

How does the design of a ramp affect the movement of a marble? (Gr. 3, 4)

How does salt affect the freezing rate of water? (Gr. 2)

How does food coloring affect the time it takes water to freeze? (Gr. 3)

How does the kind of water affect how long it takes to boil? (Gr. 2)

How does the kind of water affect how quickly it will evaporate?

How does the surface area of a container of water affect its evaporation rate?

How does the depth of the water affect its evaporation rate?

How does the temperature of water affect its evaporation rate?

How does the kind of water (fresh or salt) affect how long it takes an ice cube to melt? (Gr. 2, Gr. 5)

What kind of material best insulates a refrigerated can of soda?

How does the color of a can affect its rate of temperature change when placed in the sun?

How does the shape of an ice cube affect how slowly it melts?

How does the temperature of water affect how well an object floats?
What kind of chocolate melts the easiest?
How does the amount of energy (AAA, AA, D, C dry cells) affect the amount of light produced by a bulb/multiple bulbs? (Gr. 4)
What materials/objects create a spinner that will spin a long time?
How does the kind of water affect the number of leaves on a Marigold plant? (Gr. 2, 3)
How does the size of a bean seed affect its germination rate? (Gr. 3)
How does classical music affect the height of tomato plants? (Gr. 1, Gr. 3)
How does water drainage affect the height of sunflower plants? (Gr. 2)
What kind of light is best for plants? (Gr. 1, Gr. 2, Gr. 3)
How does the color of light affect how many insects are attracted to it at night? (Gr. 1)
How does the kind of soil affect the rate of water erosion? (Gr. 4)
How does moisture affect the rate of decomposition in a compost pile?
How does the slope of the surface affect the rate of water erosion? (Gr. 4)
How does the kind of soil affect how much water it will hold (retain)? (Gr. 4)
How does wind affect how water evaporates?
How do different foundations stand up to earthquakes? (Gr. 3, Gr. 4)
What can people do to reduce the effect of erosion by wind? (Gr. 2, Gr. 4)
What can people do to reduce the effect of erosion by water? (Gr. 2, Gr. 4)
How many times do I see the moon and the sun out at the same time? (Gr. 1)
How does the course of the night sky change over a month? (Gr. 1)

Technology

What algorithm can be created to solve a maze?
What machine or device can you create to help you with your chores?
How can you use an algorithm to design a computer game?
What design creates the fastest battery-powered car?

Math

How does the diameter of an apple affect the number of seeds inside? (Gr. K)
How does the size of a pumpkin affect the number of seeds inside? (Gr. K)
Which juice drink should you buy based on volume?
How many shapes can be made from just triangles?
What mathematical equation can be used to create a puzzle like the Rubix cube?