

Tips for Choosing a Good Science Fair Question

In a science fair, you get to think of a question you have about the world around you, and then you get to figure out how to answer that question, and then you get to answer that question. Here are some tips to help you figure out whether your question will work well in a science fair, or whether it can be investigated with an experiment you do at home.

Science fair question checklist:

- I am interested in the question.

What's your favorite subject in school? What do you do in your spare time? What do you wonder about? Any of these can lead to a general topic that could turn into a good science fair question. For example, if you play soccer, you could think of a question about the science of soccer balls.

- The question is specific, not general.

Example of a general question: What makes a soccer ball go farthest?

Example of a specific question: How does the amount of air in a soccer ball affect how far it goes?

- I can think of an experiment that would answer the question.

In the example above, you could fill a soccer ball to several different pressures. The first thing you might think is that you should kick soccer balls filled to all these different pressures and see which went the farthest. But what if you accidentally kicked one harder than another? That wouldn't be a fair contest. You would have to make sure everything was the same except the amount of air in the ball. A good solution to this would be to set the ball at the top of an incline (like a slide), let it go down on its own, and see how far from the incline it went.

- I can set up the experiment so that if I am changing the conditions, I am only changing one condition at a time.

You get to control the amount of air in the soccer ball because you get to fill up the ball yourself, and you get to choose how full.

If you were kicking the ball yourself, though, you couldn't be sure that you weren't changing *both* the amount of air in the ball and how hard you were kicking it.

- I can collect data from my experiment.

You have to be able to measure something! In the soccer ball experiment, you can write down the pressure inside the soccer ball and how far it traveled (in inches, feet, meters, or whatever you choose) when it was filled with that pressure.

- My experiment is safe and doesn't involve experimenting on humans or vertebrate animals.

- I can get all the materials I need.

- I have time to do the experiment and get results before the day of the science fair.

Kinds of questions to avoid	Why?
A topic that has to do with whether people like one thing more than another (for example, chocolate versus vanilla ice cream).	You are just measuring people’s opinions. There are no numbers. It’s just a survey!
A topic about whether one product works better than another product (for example, Brawny versus Dollar General paper towels).	Since you don’t know exactly how the product is made, you won’t know why it works better than the other product, and the “why” is what’s important to science.
A question that is answered by an experiment that would be hard for someone to repeat.	If you’re doing science, people need to be able to copy you and see if they get the same results.
A supernatural topic, such as, “Can people read minds?”	This is difficult to measure and isn’t considered real science, since there have never been any experiments with positive results.
A topic that involves injury, to you, your friends, your enemies, or animals.	It’s against the science fair rules!