



Welcome to the annual Science Fair! We are so excited that you are here because we love science and we want your kids to love science too! We want to encourage your child to choose anything that springs from their creative mind. We want them to see that ANYTHING can be researched using the trusty **scientific method**. Now don't get nervous, we know that you might be trying to think back to high school when you learned all about the scientific method, but rest assured we are here to help! We want this to be a fun project for you and your child! So, we put a few resources to help.

First thing first - what is the difference between a demonstration and a science fair project?

Demonstration: This simply **explains** a science concept, it shows how something works. Some examples would be: putting Mentos in coca cola and watching it explode or making a volcano and showing how it erupts. They are fun, but not testable.

Science Fair Project: These are usually more involved – they are **testable** questions. Asking a question and then performing an experiment to see if you can answer it. For example: What brand of battery lasts the longest?

Once your child chooses a project, there are a few things your child will need to include in their project in order to make this a successful experiment! (Think back to your science school days here) hypothesis, independent variable, and a dependent measure.

Hypothesis - This is like an educated guess to a testable scientific question. Once you have a question, what do you think is the answer, and why do you think that? A hypothesis will lead to one or more predictions that can be tested by your experiment. It is usually written in an "If _____ Then _____ Because _____" statement. "If I (do something) then (this will occur) because (of some fact, evidence, known rule, for example: gravity)"

Independent Variable - This is the variable that you manipulate or change in the experiment. For example, if you are measuring plant growth from light, you can change the amount of light you expose the plant to in order to see what light the grow best in. For example: inside, outside, full sun, shade, in a closet, etc. Your independent variable would be **the amount of light**.

Dependent Measure - This is what is being affected by your independent variable, it is what you are measuring. To continue with the previous example, **growth** of a plant would be the dependent measure. Its growth was affected by the different amount of light you exposed them too

We included some websites below that can help spark your child's creative mind, as well as help guide you and answer some additional questions you may still have.

This is meant to be a fun activity, to introduce your child to science. We ask that you help guide your student through the experiment. There are no right answers! If your child ends up finding out the hypothesis was incorrect, guess what, you still succeeded at science! Science is about testing, learning and discovering the answer. Discovering your hypothesis was wrong is still a right answer in science because you were able to eliminate a wrong answer. So, get creative and most importantly have fun.

If you have further questions email Jamie at emersonstarsscience@gmail.com

Helpful websites:

<https://www.youtube.com/watch?v=DChofjUH488>

<https://www.jpl.nasa.gov/edu/learn/activities/science-fair-project/>

<https://sciencebob.com>

<https://www.sciencebuddies.org>