

# I Want to Do a Science Fair Project . . .



## First Things First . . .

When you decided you wanted to do a Science Fair project, you were saying you wanted to study something more intensely to learn more about it. This means you will be spending extra time planning, preparing, and finally presenting your project. Keep this in mind as you do your project.

Now, consider what type of project you want to do. In Academic Rodeo, there are 3 different divisions – Experimental, Model/Demonstration or Scientific Illustration. This template only deals with how to conduct an Experimental project. If you are choosing a Model/Demonstration project or plan to do a Scientific Illustration, look at the rules for those Divisions.

## A Few Definitions . . .

**Experimental** means you are going to try some different things to see what effect they have on other things or what result you get when you do things a certain way.

**Hypothesis** is really your best “guess” at what will happen when you do your experiments.

**Journal or Notebook** is where you write down EVERYTHING that you do in your project. This is a very important part of any experiment, because it is a record of what worked AND what did not.

The **Display** is your poster board and items used in your experiment that demonstrate what you did and your results. This gets the attention of people looking at the Science Fair projects and can make them want to stop and see what you did and what you learned. It can also just make them keep walking if you have not put effort into the display.

**Safety**, or not choosing projects that are dangerous or contain materials that can become dangerous when used together, is very important for you and those who stop to see your experiment.

## Getting Started . . .

A good project has a good plan. Think carefully about your project before getting started and everything will go more smoothly. There are many excellent sites online that tell you how to complete a Science Fair project. Following is a brief overview to get you started.

### Begin your Journal/Notebook

Your Journal/Notebook is a record of EVERYTHING that you do in the project. You should even include your ideas about a topic. If you make a mistake as you go along in your experiment, just mark through it neatly and make the correction. Think of your Journal/Notebook as a “work in progress” and every time you write something, you are creating the final project.

The Journal/Notebook is written as you go through the project. Journals written AFTER the project are nothing more than a brief summary and do not give the entire picture of your experiment.

Remember to put the date for each time you write in your Journal/Notebook. You will also write down results as you carry out your experiments. These will be easy to find when you begin evaluating your project and drawing a conclusion.

### **Choose a topic**

The topic should be something that is interesting to you. Avoid looking at lists of “Great Science Fair Projects” and instead, list several things that you have wondered about or made you curious.

### **Do some research about the topic of interest**

As you research and learn more about the topic, you will begin to narrow your interest and find more specific topics to explore.

Research will also give you background information to help you qualify your results and explain why you got the results.

### **Develop your ideas into a Question**

You need a specific question you can test.

Examples:

How does \_\_\_\_\_ affect \_\_\_\_\_?

What happens to \_\_\_\_\_ if \_\_\_\_\_ occurs?

If I do \_\_\_\_\_, what will result?

### **Develop your Hypothesis**

The Hypothesis is a statement of what you think will happen when you do your experiment. It does not matter if your hypothesis is correct. That is what you will determine as you do your experiment and get results. Good experimental research does not always get the expected results. Sometimes finding out your hypothesis is wrong, puts someone else on the right track to finding a correct answer to the question involved.

Put your hypothesis in a statement.

Examples:

Water will \_\_\_\_\_ when exposed to \_\_\_\_\_.

Changing \_\_\_\_\_ in \_\_\_\_\_ will cause \_\_\_\_\_.

### **Design your Experiment.**

- Determine how you can test your hypothesis by experimenting.
- What materials will you need to carry out your experiment?

- How long will you test to get your results?  
Some things can be done quickly. Others take several weeks to get results. Be sure you allow enough time to complete your experiment and get your results before the Science Fair Journal is due.
- As you carry out experiments, remember to only change 1 thing (VARIABLE) as you conduct the experiment.  
Each trial in the experiment should be conducted in just the same way. You may be testing 2 or more VARIABLES (differences), but you will also have a CONTROL which is what is usually done and will be the comparison for those done with VARIABLES.  
  
For example, if you are testing how different types of liquids used for watering plants affects growth, you may test several different types of liquids. You will also have a CONTROL plant that is watered with ordinary water.  
  
You will have a plant for each liquid, and that plant will be watered with the particular liquid only. Otherwise, you will not get valid results.
- Do the experiment multiple times for each trial. This shows how accurate your test is.

### **Evaluate Your Results**

- What trends do you see in the results?
- Are there outside factors you had not previously considered that affected the results?
- Was your hypothesis accurate? If not, what gave you a different result than expected?
- Did anything in your results surprise you?

### **Show Your Results**

- Make graphs and charts that show your results. Include these in your Journal and on your poster display.
- Make your poster display attractive and easy to read. Do NOT include every piece of information from your experiment. Instead show the highlights and summarize.
- Create an Abstract that gives a brief overview of the project and the results. The Abstract is submitted separately to Academic Rodeo for display in a notebook for the Virtual Academic Rodeo at the East Texas State Fair.