

Science Experiment Project

Name _____

You will need to design and complete your own science experiment. Keep in mind the following:

1. The rough draft (end of this packet) is due on **Friday January 10, 2020**. You will need to have your parents' signature. The final project is due on **Friday, February 7, 2020**. You may complete and turn it in before then if you like. You may work on the project independently or with up to two other students from any of my 4 classes. If you don't enter the science fair (see below) you may present your experiment as a poster, Google Presentation, Prezi, or video. **If you do enter the science fair you must have a 3 sided poster.**
2. We hope that some of you will **choose** to enter your project in the New Albany science fair. The science fair is for students in grades 5-12. The fair will be held on **Thursday, February 13, 2020**, in the Intermediate Building during the school day. There is no fee to enter the fair. Students who choose to enter the fair will need to register (more information later). At the science fair, students will present their poster board and discuss their results with a pair of judges. Prizes will be awarded by grade level. Students will be judged on: knowledge achieved, effective use of the scientific method, clarity of expression, and originality and creativity. Students who receive a Superior Rating (see judging rubric) will move on to the Central Ohio Science Fair at Columbus State on Saturday March 18. Students who enter the science fair must create a 3 sided poster board about their project that includes **research** about their project.
3. A science experiment is **not just building something scientific**. An experiment must **start with a question** that you are trying to answer by testing different possibilities. You should be changing something (your independent variable) and measuring or observing what happens (your dependent variable). For example: maybe you are interested in solar power, so you build a solar powered car. **This is not a science experiment**. You could make it an experiment if you tested the car during different types of weather days and measured which weather makes the car move the farthest. Another example: you like birds so you build a two-story birdhouse for your backyard. **This is not a science experiment**. You could make it an experiment by taking three different types of bird food and recording which food attracts the most birds over a certain period of time.

4. Most science experiments have been done before, so I do not expect you to come up with an idea that is totally original. I also don't want you to do an experiment we did this year in class, one you did in previous classes, or one that your older brother or sister has done. If you are interested in a certain topic, there are probably many experiments that might relate to that topic you could use. Try the following websites (this guide is on my portal if you want to use the links directly from there):

<http://chemistry.about.com/od/sciencefairprojects/a/sciproelem.htm>

<http://chemistry.about.com/cs/sciencefairideas/a/aa041503a.htm>

<http://chemistry.about.com/od/sciencefairprojectideas/a/physicsprojects.htm>

http://www.all-science-fair-projects.com/science_fair_projects.php

(search this one by topic: biology, chemistry, etc.)

<http://www.hometrainingtools.com/articles/elementary-project-ideas.html>

http://www.sciencefairsanity.com/home/sci/smartlist_9/free_elementary_science_fair_projects_3rd_5th_gr.html

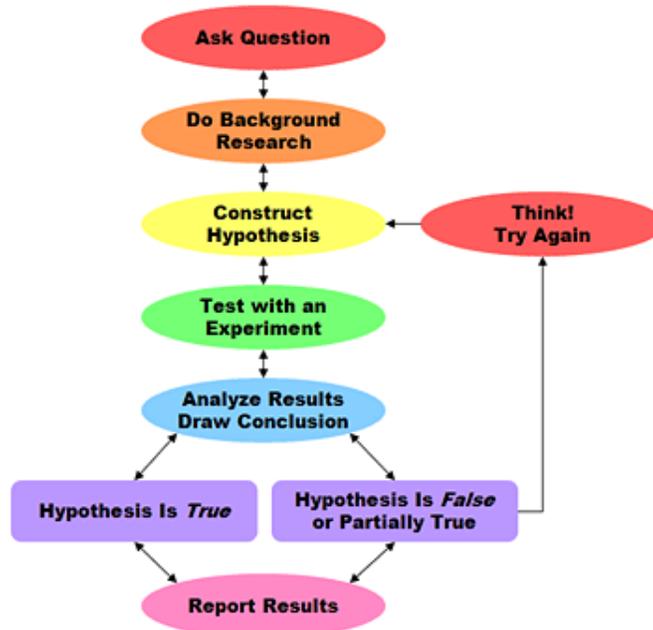
There are lots of books at the library that also have great ideas.

5. Pick a project that does not take too long to complete and that has materials you can acquire fairly easily. Make sure you check with your parents about your project and whether or not they think you can get the materials you will need.
6. You will be doing the actual experiment at home. You may have some time to work on your poster and other parts at school. I will be giving you the option to bring in your experiment to demonstrate to the class, but it is okay to skip this step if your experiment is not easily brought to school. Make sure your experiment does not require you to be home to record your results during the school day. For example, you would not be able to measure which type of battery will last the longest in 3 flashlights because you may be at school when the flashlights turn off.
7. You must pick an experiment that you can learn more about through **research**. You will read about related experiments and scientific explorations and use your research to help explain your results. This is easier with some experiments than others. For example, if you do an experiment about different paper airplane designs and how they affect flight, you can research about other flight experiments people have done. You can read books about airplanes, NASA, aerodynamics, and related topics and use your knowledge to explain your results. If you do an experiment about what flavor of Mentos makes soda explode the highest you may have trouble finding applicable research materials. Make sure **your experiment can be researched** before you choose it.
8. This is your science experiment, and I want you to do as much as possible with it on your own or with your partners. You may ask your parents for help when necessary. Parents will be helpful in getting materials, setting up the experiment, and discussing ideas before choosing your experiment.

I have read the following rough draft of my child's science experiment and agree to help them acquire the materials necessary to complete the experiment at home. The rough draft is due on **Friday, January 10, 2020**. I will approve the idea and then you may start working on your experiment. The experiment and presentation should be completed by **Friday, February 7, 2020** so that we may share it with the class.

Student _____

Parent signature _____



Brainstorming Page

Here are some possible topics or questions I would like to consider for my experiment:

Here is my best question:

If I choose this question I will research about (be specific):

Science Experiment Rough Draft

Question: The question you are trying to answer in your experiment. Example:
Does the shape of an ice cube affect how long it takes to melt?

Hypothesis: An educated guess about what will happen (don't forget to use the word *because*).

Procedure: The steps you will follow.

Materials: the things you need.

Independent variable: what you will change. Example: I will change the shape of the ice cube.

Dependent variable: what you will measure or observe. Example: I will measure how long it takes each ice cube to melt.

Constants: (similar to controls): things you will keep the same (try to find at least two). Example: I will keep the size of the ice cubes as close to the same as possible. I will keep the temperature of the ice cubes the same.

Data/Results: the information you gathered (**this will be completed after you have done the experiment**). **This should be displayed in graphs or tables on your final project.**

Conclusions: what you learned (**after the experiment is completed**).