

Science Fair Investigation Guide

Write all of the following down in a logbook!!

Topic – Choose a topic that really interests you!

- Make sure the topic is measurable (length, distance, time, weight, speed, etc.)
- No volcanoes, sink/float, yes/no, sweet/salty experiments
- Write the topic as a question
(Ex: Does a person's height affect how far they can jump?)
- The Internet is a great source of ideas for science fair projects. Visit these websites or just do a search of your own.

<http://www.sciencebuddies.com>

<http://www.all-science-fair-projects.com/>

<http://www.sciencefair-projects.org/>



Other topic suggestions:

- Is a broken magnet as powerful as one that is not broken?
- Does the shape of a parachute affect its falling time?
- How does the temperature of a tennis ball affect the height of its bounce?
- How does the air pressure of a soccer ball affect how far it travels when kicked?
- Under what color light do plants grow the best?
- Which type of fruit is more acidic: lemons, oranges, or watermelon?
- Which type of cup will keep a hot drink warmer longer: paper, plastic, Styrofoam, or glass?
- Does a person's height affect how far they can jump?
- Does the size of a dog determine how high or low-pitched its bark is?
- Can you skate faster with in-line skates or roller skates?
- Do taller people take longer strides than shorter people?
- Does eye color affect how well a person sees?
- Which brand of chocolate will melt faster in the sun?
- How does the weight of a paper airplane affect its ability to fly?

Purpose – In one to three sentences describe why you are doing this experiment. (The purpose of this investigation is to . . .)

Hypothesis – A hypothesis states what you think is going to happen in the experiment. (My hypothesis is that . . .)

Materials List – Make a bulleted list of all of the materials you will need in order to complete the experiment. Make sure to be very specific on your items (Ex: cm ruler, 1 inch scotch tape, stop watch, etc).

Variables – Outlines the items in the experiment that will change and the items that will stay the same.

- **Independent Variable** – The items that you plan on changing.
(Ex: size of parachute or height of person jumping)
- **Dependent Variable** – Change you will measure.
(Ex: Time for parachute to land or distance people jump)
- **Controlled Variable** – The items that will stay the same.
(Ex: material for parachute, type of magnet, or where person jumps)

Step-by-step Directions – Give specific details on how you carry out the experiment, so if someone wanted to do it too, then he/she would do it the exact same way.

(Ex: 1. Gather materials

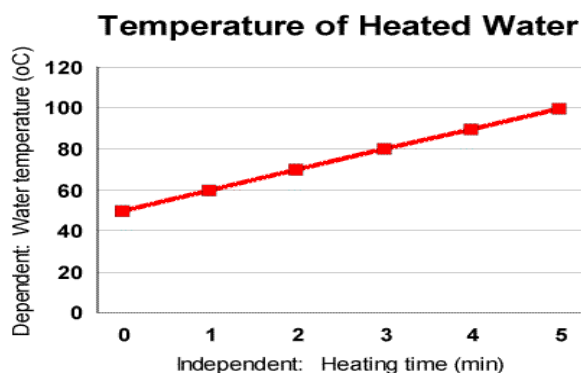
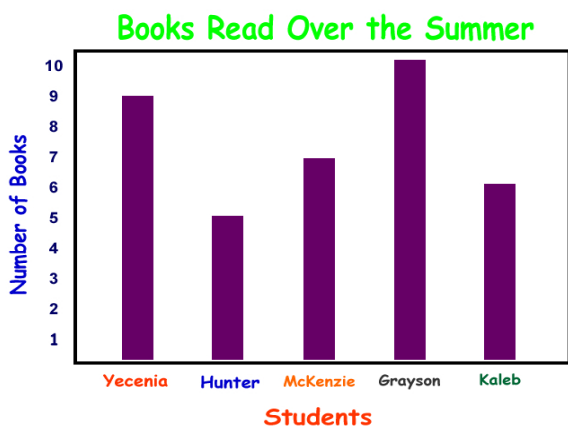
2. Weigh each pillowcase and record its dry weight
3. Fill a bucket with cold water
4. Place all three pillowcases in the water
5. Leave the pillowcases in the water for 1 hour to soak
6. While pillowcases are soaking, set up a drying rack in the bathtub
7. Hang up each pillowcase on the drying rack and allow to dry
8. Weigh each pillowcase every two hours)

Data Collection – Now it is time for the experiment! In order to get accurate results, you must conduct the experiment 3 times (record these as 3 trials). Keep the data you collect during the experiment in a data chart.

(Example of data chart)

Height of person jumping	Trial #1	Trial #2	Trial #3	Total	Average
Person 1 5 feet					
Person 2 5 feet 5 inches					
Person 3 6 feet					

Graph – Use the information you collected in your data chart to produce a bar or line graph. The graph should be a visual representation of your 3 trials. Make sure to give your graph a title and label all of the parts.



Conclusion – Is a statement of what the data showed, whether or not the information supported your hypothesis, and how this information could help in the real world.

(My data showed . . . This does/does not support my hypothesis because . . . This information can help others because . . .)

Display Board Layout: (typed or neatly handwritten and add color)

Purpose	Topic	Data Chart
Hypothesis		
Materials List	Step-by-Step Directions	Results Graph
Variables	Photos or Drawings	Conclusion
		Conclusion