

HOW TO DO YOUR SCIENCE PROJECT

CHOOSING A TOPIC

-Choose a topic that can be answered by experimenting.

example: How does price effect how much water a paper towel absorbs?

PURPOSE

-Tell in one to three sentences why the investigation is being done.

example: The purpose of this project is to determine if all brands of paper towels absorb water at the same rate.

HYPOTHESIS

-This is a statement of what *you think* will happen in your experiment.

example: My hypothesis is that the cheaper the paper towel, the less water it will absorb.

PROCEDURE

-This consists of three parts:

A) Materials: List each item you used to complete your experiment.

example: Materials: One 20 x 30 cm cake pan
 750 ml of water
 50 ml graduated cylinder
 clock with second hand

ALL MEASUREMENTS SHOULD BE DONE IN THE METRIC SYSTEM.

B) Variables: The three types of variables are...

Manipulated variable: the **one** thing you change in your experiment

Responding variable: how you will measure or tell what happened

Variables held constant: everything that stayed exactly the same through your experiment

example: Variables: Manipulated : Brands of paper towels
 Responding: Amount of water absorbed by each towel
 Constant: Size of paper towels
 Amount of water poured on each towel

C) Step-by-Step Directions: List the steps of your experiment in order.

example: 1. Cut three 15 x 15 cm squares from each brand of paper towels.
 2. Pour 50 ml of water into a 20 x 30 cm cake pan.
 3. Place 1 square of Brawny brand paper towel into the center of the pan.

DATA COLLECTION & GRAPHS

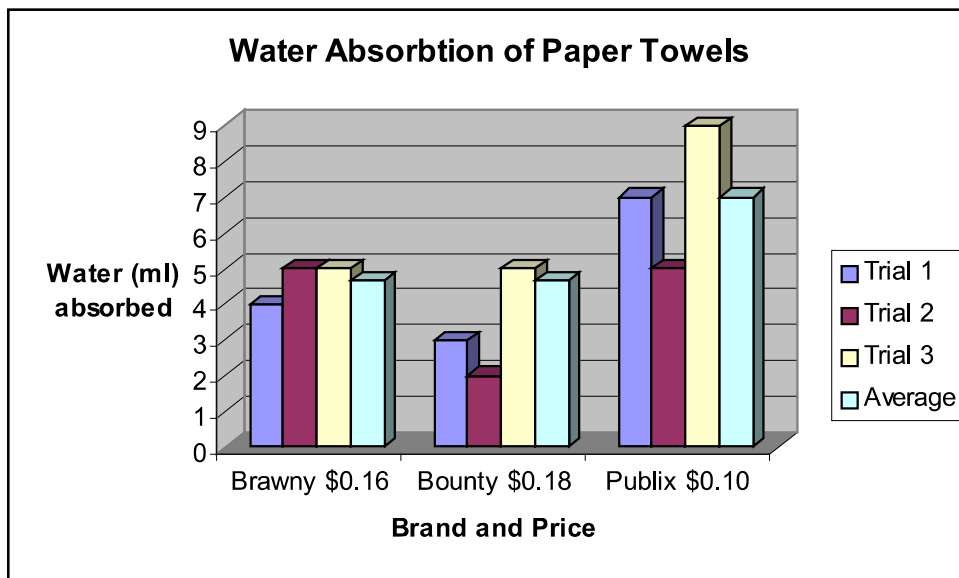
-Every project **must** have a log. The log is like a diary of what is happening in your experiment. Each day you should date and record a detailed description of anything that has happened with your experiment. You can include drawings of photos. This book does not have to be fancy. It is for you to record your info and display.

-Data on your board should be displayed in tables, charts, drawings, and/or photos.
example of data chart:

Water Absorption of Paper Towels

Brand of towels and price	Water (ml) absorbed in 60 seconds			
	Trial 1	Trial 2	Trial 3	Average
Brawny \$0.16	4	5	5	4.666667
Bounty \$0.18	3	2	5	4.666667
Publix \$0.10	7	5	3	5

-Select a graph that will best display your data: bar graph, line graph, pie graph, etc.
example of graph:



CONCLUSIONS

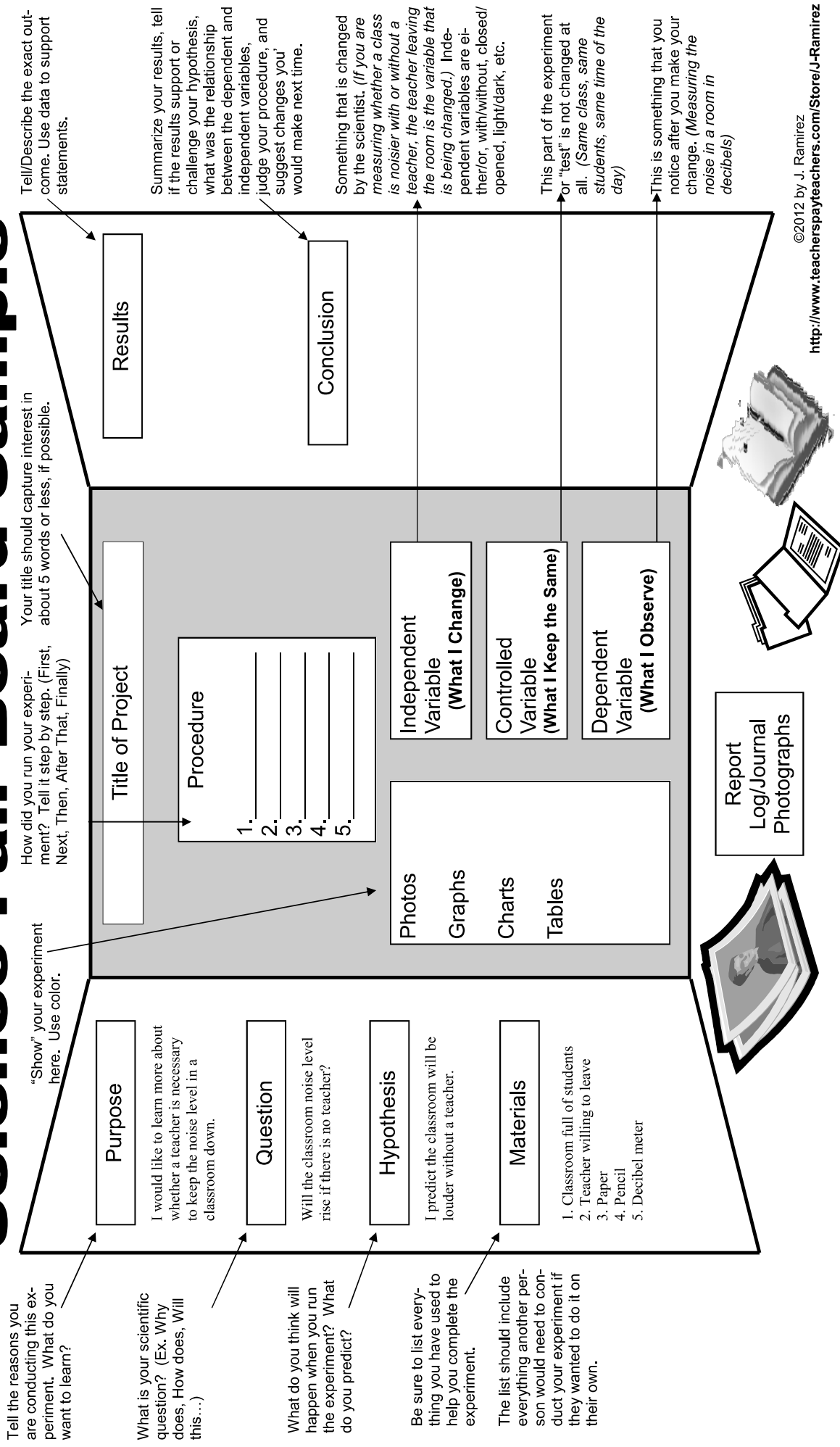
-This is whether or not your hypothesis came true. Also, describe any problems and anything you would do differently next time. Revise your hypothesis if necessary.

example: The data collected does not support my original hypothesis. The cheapest paper towel (generic) absorbed 20 ml of water, the higher priced paper towel (Brawny) absorbed 23 ml, and the mid-priced paper towel (Sparkle) absorbed 25 ml of water. My revised hypothesis is the price of paper towels does not affect the amount of water absorbed.

RESEARCH PAPER (optional, grades 3-6)

A research paper is not required but recommended for "winning" projects.

Science Fair Board Sample



Tell the reasons you are conducting this experiment. What do you want to learn?

What is your scientific question? (Ex. Why does, How does, Will this...)

What do you think will happen when you run the experiment? What do you predict?

Be sure to list everything you have used to help you complete the experiment.

The list should include everything another person would need to conduct your experiment if they wanted to do it on their own.

"Show" your experiment here. Use color.

How did you run your experiment? Tell it step by step. (First, Next, Then, After That, Finally)

Tell/Describe the exact outcome. Use data to support statements.

Summarize your results, tell if the results support or challenge your hypothesis, what was the relationship between the dependent and independent variables, judge your procedure, and suggest changes you would make next time.

Something that is changed by the scientist. (If you are measuring whether a class is noisier with or without a teacher, the teacher leaving the room is the variable that is being changed.) Independent variables are either/or, with/without, closed/opened, light/dark, etc.

This part of the experiment or "test" is not changed at all. (Same class, same students, same time of the day)

This is something that you notice after you make your change. (Measuring the noise in a room in decibels)