Ben Rush Elementary 2023 Science Fair

K- 3rd Grade Information Guide

This guide provides helpful information for participating in the Ben Rush Science Fair!

Date: March 30st, 2023 (Thursday)

Time: 7:00 – 8:30 pm

Location: Ben Rush Elementary Gym, Commons and Pods

Tri-fold display boards will be provided by the PTA to all registered students.

To register, please visit:

http://benrushpta.org/pta-programs/science-fair/

For more information, contact sciencefair@benrushpta.org

WHY ENTER THE SCIENCE FAIR?

It's fun to discover! It is your chance to learn about something you are interested in. You'll have fun doing it too!

CAN I DO A PROJECT WITH A PARTNER?

Yes. A partner can be great! Or you can do it individually.

HOW DO I PICK MY TOPIC?

What interests you? What have you been learning in school that you are still wondering about? Talk to your family, your teacher, or the librarian.

There are lots of great topics; you just have to find one!

SCIENTIFIC INQUIRY

(How Do Scientists Find Out Things?)

Scientific Inquiry is the way to make sure you explore your question thoroughly. The cool thing about science is that when you ask a question, that question can take you to really interesting places. You could discover something new!

1. ASK A QUESTION

What is my topic? Phrase your topic as a question (e.g.: Why is the sky blue? How do baseball pitchers throw a curve?).

2. MAKE A PREDICTION

Form a hypothesis and predict. What do I think will happen? Why?

3. GATHER MATERIALS

What materials will I need to answer my question? Make a list of everything you will use.

4. PLAN A PROCEDURE

What steps do I take to answer my question? Write this out (like a recipe for your experiment).

5. CHOOSE YOUR VARIABLES

What is going to change in your experiment (manipulated variables)? What is going to remain the same (controlled variables)? What do you need to keep the same to make your experiment fair?

6. GATHER DATA AND RECORD RESULTS

What happened? Write down your data and your results. This could include a data table, photos, or a bar graph to show what happened.

7. CONCLUSIONS/REFLECTION

What did you learn? When we follow the scientific process, we're asked to tell what happened (answer our hypothesis) using information from our data

collection and results section.

Display Board Sections

The PTA will provide your child with a yellow **tri-fold display board, 36" wide**, to be delivered to their classroom in early March.

Your display board presents your project to other people. This is how you show your hard work!

These are typically the labeled sections on your display board:

Title

Don't forget to label a clear large title on your board!

If you are having a hard time titling your project, you may find it easier to wait until you've reached your conclusion!

Section One: Question

What is the Question?

The Question/Problem Statement is the question you are trying to answer with the project, the reason for doing the experiment.

For example: "What is the effect of different types of music on the growth of a bean plant?"

What is included in this section?

This section only needs to be one sentence long, but it must be in the form of a question.

Tips:

Make sure the Question is only testing one thing. For example, an experiment should not test which type of bread will grow mold the fastest and which type will grow mold the slowest. That would be doing two experiments in one.

Section Two: Prediction/Hypothesis

What is the Prediction?

Prediction is an educated guess of what you think will happen when you do your experiment. You need to include reasons for your thinking.

Make a statement about what you think is going to happen in your experiment, and why you think so. For example: “I think the plant exposed to rock music will grow more than the other plants. I think this because…”

What is included in this section?

The Prediction must be a cause-and-effect statement. It only needs to be one sentence long, but can be two sentences. The first is “If... then…” and the second sentence is why you are making that prediction.

Tips:

Make sure you only predict one outcome. Then, you will clearly know whether the prediction is right or not.

Section Three: Variables

What are Variables?

Variables are changed or changing factors used to test a prediction and may affect the results of an experiment.

What is included in this section?

This section could have three types of variables listed:

1. The Changed Variable.

This is what is changed during the experiment.

When testing the effect of music on plant growth, a manipulated variable could be the type of music played to each plant.

2. The Responding Variable.

This is what is being measured.

It is the response to the manipulated variable.

In the plant experiment, the responding variable would be the amount of growth for each plant.

3. The Controlled Variables.

This is what will be kept the same.

For example, if someone is testing the effect of music on plant growth, the controlled variables would be the amount of sunlight, water, temperature, length of time exposed to music, and type of plants. All of these things will be kept the same so the only difference between the variables is the type of music played to each plant.

Section Four: Materials/Procedure

What is the Materials/Procedure?

The fourth section of the scientific method is the Materials/Procedure.

List all of the materials needed.

Outline the steps taken to answer your scientific question.

What is included in this section?

This section would include three parts:

1. A list of all materials needed to conduct the experiment.
2. A step-by-step procedure that will be followed to conduct the experiment.

Tips:

Make sure the step-by-step procedure is detailed enough so anyone could gather the materials from the list, follow the procedure, and get the same results.

Section Five: Data /Pictures

What is the Data?

The fifth section of the scientific method is Data/Pictures/Analysis.

The data is the record of what actually happened during the experiment.

Data are the results of the experiment and is recorded on a data table.

What is included in this section?

This section would include four parts:

1. A data table that organizes the data.
2. A graph that visually displays the data.
3. Pictures or drawings of the experiment as it happened.
4. A few paragraphs that explain what happened during the experiment

Tips:

Make sure the graph is clearly labeled, colorful, and can easily be understood. It should paint a clear visual picture of exactly what happened.

Section Six: Conclusion

What is the Conclusion?

This is the last section of the scientific method.

The Conclusion is where you explain how the data you gathered supports your prediction and answers the scientific question. What is included in this section?

Explain in this section what you learned from doing this science experiment.

Was your prediction right? How do you know?

For example:

"The type of music does affect the growth of plants. The bean plant exposed to classical music grew four inches in the first week. The bean plant exposed to rock music only grew 2 inches the first week. The bean plant exposed to classical music grew two inches more than the plant exposed to rock music. Therefore, classical music was the best type of music to encourage plant growth."

<u>Rough Draft for Your Science Fair Project</u>

TITLE: _____

Question: _____

_____ ?

Hypothesis: I think that _____

_____

_____

Materials needed:_____

_____

_____

_____

_____

Diagram/picture of what the experiment looks like (try including labels):

Controlled Variables (what stayed the same): _____

_____

_____

_____

Manipulated Variable (what did you change):_____

_____

_____

_____

Procedure (step by step):

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Data/Results: _____

_____

_____

_____

_____

Conclusion:

1 - My hypothesis was _____(correct/incorrect).

2 – Write a sentence about what happened.

3 - What did you learn? What question(s) do you still have?

Good Online Resources for Ideas and Help

http://www.kcls.org/homework_help/scienceexperiments.cfm

http://www.stevespanglerscience.com/experiments

http://www.factmonster.com/spot/sciproject2.html

http://school.discoveryeducation.com/sciencefaircentral/?pID=fair

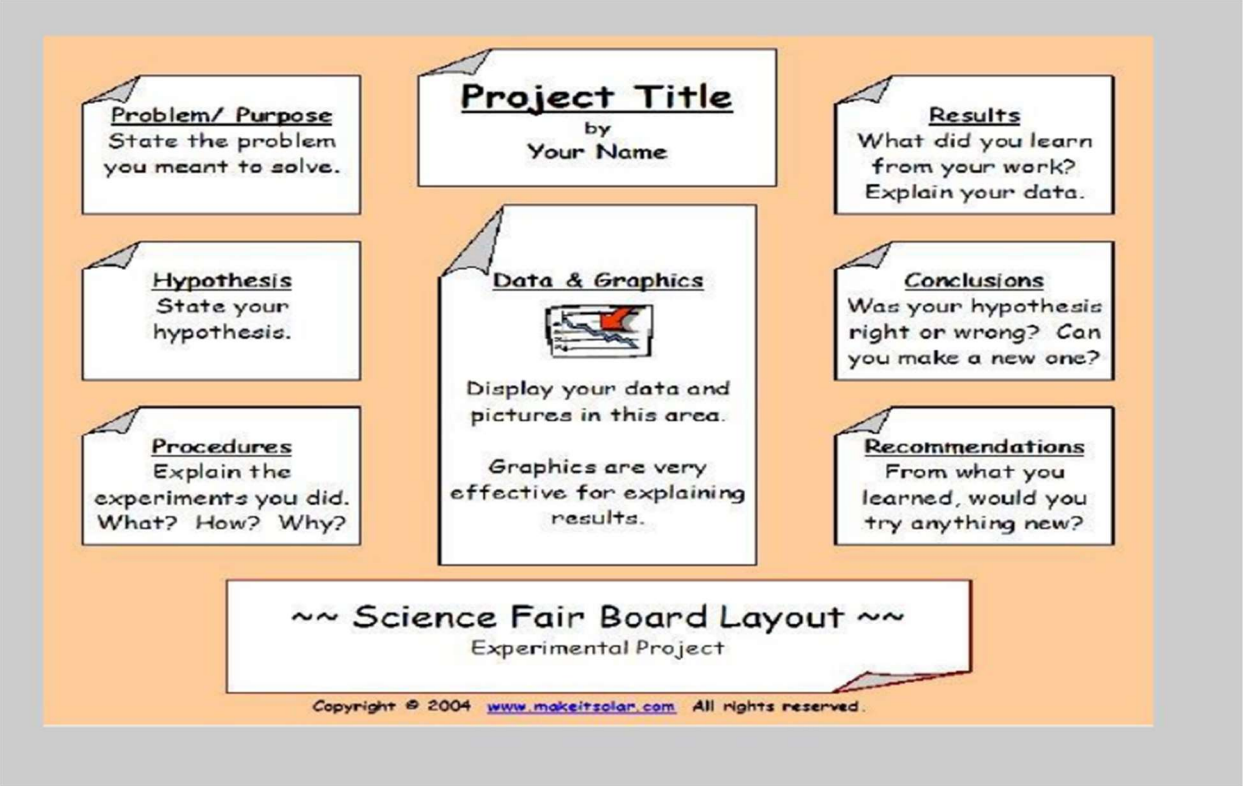
http://www.education.com/science-fair/article/earth-science_measuring-raindrops/

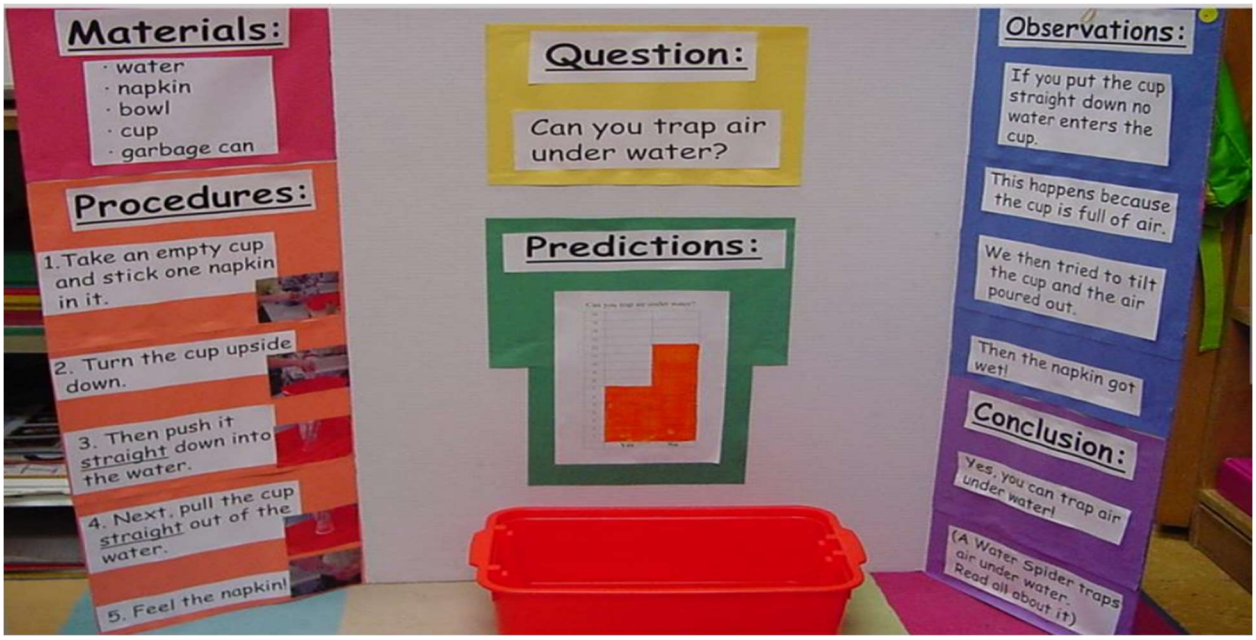
http://www.education.com/science-fair/article/center-of-balance/

http://www.education.com/science-fair/article/bubble-wrap-impact/

http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml

EXAMPLES OF DISPLAY BOARDS FOR SCIENCE FAIR:





Created by Cailean Kohagen, Ben Rush Elementary

Resource:Covington Elementary Science Fair Packet, Kent, W