

The image features a dark grey background with a repeating, intricate floral and vine pattern in a slightly lighter shade of grey. A white rectangular box is centered horizontally and vertically, containing the text "SCIENCE FAIR" in a bold, black, serif font.

# SCIENCE FAIR



# LAB NOTEBOOK



- You **MUST** have a lab notebook! You can not win without one!
- By the time you come back from Thanksgiving break you must show me your lab notebook!

In your lab notebook you will include any notes you take while working on your project such as summaries of websites, trials of your experiment, data, and observations.

Must have!:

Date, time, notes/data/observations

METRIC form

Example:

11/20/14 6:00 PM

I measured the height of each plant and found Plant A was 14cm tall and Plant B was 10cm tall and Plant C was 19cm tall.

11/22/14 11:23 AM

I measured the height of each plant for a second time and found that the heights remained the same.

# QUESTION

- Choose something that interests you (plants, batteries, engineering)
- Must be testable – it can be measured



# Examples:

I am interested in plants so I know I want to do my project on plants. I then look on the internet to find some good question ideas on testable topics. I come up with the question: WHICH FERTILIZER HELPS PLANTS GROW THE TALLEST?



I am interested in engineering because I like to build things. I research different things I can build and show a testable experiment. I come up with the question: **WHAT TYPE OF BRIDGE CAN HOLD THE MOST WEIGHT?**



Examples of bridge types: arch, cable, suspension, etc.



I always played with little Army men as I was growing up and have been curious as to if the size of their parachutes matter. Question:  
**DOES SIZE OF A PARACHUTE AFFECT ITS EFFECTIVENESS?**

Take about 5 minutes to look through your science book, talk to the people around you, or look around the room for inspiration on a topic.

Write down 3-5 topic ideas in your notes



# PURPOSE

- Tells what you want to learn from doing this project
- 1-2 sentences stating why you investigate this topic and how the results can be helpful

Pick a question and we will write 3 examples  
purposes together

1.

1.

1.

# RESEARCH



- Use keywords
- Use reliable sources, book, textbook, magazines, websites, and even people
- Make sure to write down or keep your sources for your bibliography!
- Write a research paper on your findings

Who can you trust?

Wikipedia

Professional in the  
field

Ask.com

New York Times

# HYPOTHESIS

- An educated guess based on your current knowledge BEFORE the experiment
- Does your hypothesis have to be right/correct?  
NO



Lets try it! Question: Which type of packaging stops an egg from breaking most often?

I predict.....reason why

OR

I hypothesize.....reason why

# VARIABLES

- Experimental variable – what is being changed/independent variable
- What is kept the same/controlled? How are you keeping it constant?

Lets Practice!

Question: Does ball size affect  
bounce height?

Experimental/independent variable:

Controlled aspects:

1.

2.

3.



# MATERIALS

- A detailed list of materials used for your project



Too Vague:

Gather the items for the experiment

Detailed:

You will need

Pencil

Paper

Two bean plants

2 liters of Orange Juice

A sunny area

Ruler

Measuring Cup



# PROCEDURE

**Rice Cake Pizzas**

**Step 1:**  
Place the rice cake on a clean plate or napkin.

**Step 2:**  
Use the wooden spatula to spread the pizza tomato on the rice cake.

**Step 3:**  
Sprinkle the shredded cheese on the top of the pizza tomato.

**Step 4:**  
Add the other toppings to the top of the "pizza" - green bell peppers, olives, pepperoni or any other toppings that you like.

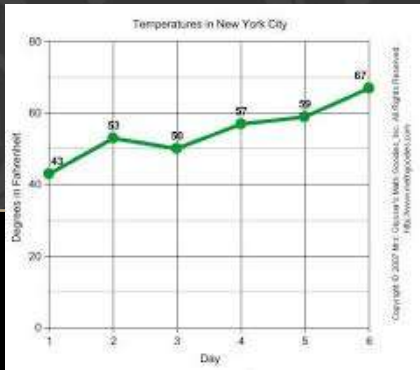
**Step 5:**  
Enjoy!

**KEEP WHAT'S REAL**  
WATER SUGAR

- Step by step instructions
- If I read your procedure I should be able to do the exact same lab/experiment you did

## Procedure:

- Obtain
  - Pencil
  - Paper
  - Two bean plants
  - 2 liters of Orange Juice
  - A sunny area
  - Ruler
  - Measuring Cup
- Label Plants
  - plant A
  - Plant B
- Water and Measure Daily for Two weeks
  - Give plant A 10 mL of water
  - Give plant B 10 mL of Orange juice



## RESULTS/ANALYSIS OF DATA

- Describe what actually happened in your experiment (observations)
- Gave the actual numbers/measurement/graphs used to do your experiment (data collection)
- TAKE PICTURES OF YOU DOING THE EXPERIMENT OR OF THE PROGRESS/TRIALS, ETC (no faces allowed in pictures!)

# CONCLUSION

- Answer your original question
- State whether your hypothesis was correct or incorrect and explain why
- Share what you learned
- Make statements on how you interpreted your results
- Tell what you would change if you could do it again/improve on next time

# ABSTRACT

A brief 100 word summary of important information found in your research

- Re-read your research report and then write your abstract
- Include information about the experiment, your conclusion, and the importance of your topic

# GLOSSARY

- Contains at least 5 **SCIENTIFIC** key terms written in your **OWN** words
- Science packet gives you good examples such as photosynthesis and chemical reaction
- **DO NOT** copy the definition straight from the dictionary or a website



# BACKBOARD

Left Side:

Problem

Hypothesis

Material

Center:

Title

Graph

Pictures

(only  
hands no  
faces)

Right Side:

Procedure

Results/Data

Analysis

Conclusion

# SCIENCE FAIR BACKBOARD

Question

Title

Results

Procedure

Pictures

Research

Materials

Charts

Conclusion

Hypothesis

36 inches

48 inches