science fair project

Completion date:	Tues; February 15th
Paperwork due:	Thurs; February 17th
Project board due:	Monday, February 21st



Project Topics

All project topics must be approved by your science teacher. This is to ensure the student meeting success with a testable question that follows all the guidelines.



Quick Rules References

For safety reasons you MAY NOT work with:

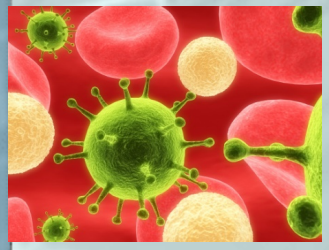
- Pathogens
- Hazardous Substances or Devices
- Human Subjects/Non-Human Vertebrate Animals

NO Pathogens!!









- Mold
- Fungi
- Bacteria
- Food Mold
- Pond Water or other stagnant water
- Food Mold

Ex: How long does it take for _____ to rot?

NO Hazardous Substances or Devices







- Alcohol
- Tobacco
- Insecticide
- Herbicide/Fertilizer
- Dry Ice
- Weapons
- Flammable items
- Motor Oil







No Vertebrate Animals or Humans!!

- No animals may be harmed doing your experiment.
  - This means you!!



If an animal has a backbone it can not be tested!



- **No animals may be harmed doing your experiment.**

Experiments with animals should be designed with safety of the animal in mind. An adult should assist with monitoring.

- Examples of non-vertebrates: earthworms. non harmful insects.

Testable Question

Is it measurable?

Your question has to have results that can be measured

- how far (distance)
- how many (quantity)
- how high (Height)
- How hot/cold (temperature)
- How much (size of an area)

Topic Examples That Are NOT Measurable

- Who was Albert Einstein?
- How does a Hurricane form?
- How to make a volcano model.
- Dolphins

These topics can be answered through research or investigations

Topic Samples That ARE Measurable

- Does the shape of the ice cube effect the melting time?
- Which substance will dissolve sweet-tarts the fastest?
- Which brand of coffee cup is the better insulator?

These topics can be answered through testing variables against a control group.

What is a Control Group?
What are Variables?

The **control** (or controlled variables) are quantities that a **remain the same** in the experiment.

The **independent variable** is the one that is changed by the scientist. In an experiment there is **only one independent variable**.

Example

If our testable questions was:

- Which insulator will keep the coffee hotter the longest?

- The **control** would be the **coffee cup without any insulation.** I would measure the temperature of coffee 10 times to gather temperature data.

The **control** (or controlled variables) are quantities that a **remain the same** in the experiment.

Example

If our testable questions was:

- Which insulator will keep the coffee hotter the longest?
- The **variables** would be the insulators that I choose to test such as- **aluminum foil. cardboard. and styrofoam.** I would measure the temperature of coffee 10 times in a cup wrapped with aluminum foil to gather temperature data. Then. I would do the same with cardboard covering the cup. etc.

The **independent variable** is the one that is changed by the scientist. In an experiment there is **only one independent variable**.

Project Deadlines

Launch date:	Thurs; Dec. 2nd, 2021
Approved topic:	Thurs; December 16th
Parent Information Night	Thurs; January 13, 2022
Completion date:	Thurs; February 10th
Paperwork due:	Tues; February 15th
Project board due:	Thurs; February 17th
Presentations begin	Monday, February 21st

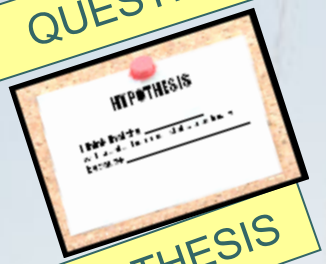
Project Overview

The last step in completing the project is to place all the information in the correct order. The following board demonstrates the correct order.

TITLE

Insulation and Temperature

QUESTION

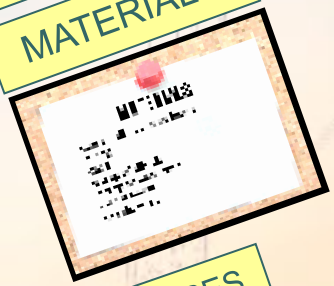


HYPOTHESIS

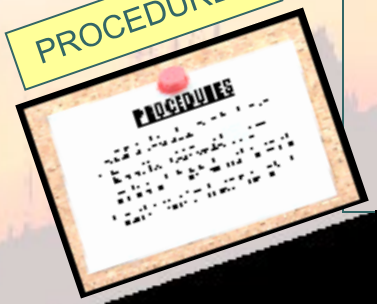


EXPERIMENT

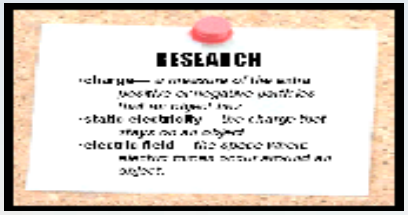
MATERIALS



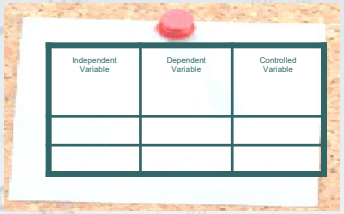
PROCEDURES



RESEARCH



VARIABLES



DATA

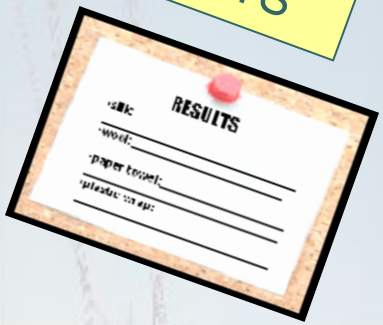
PICTURES



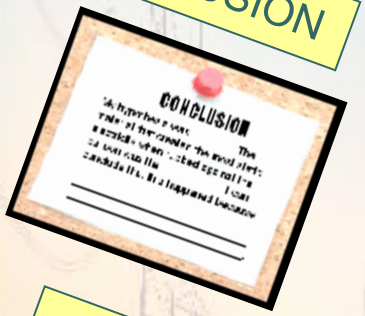
GRAPHS



RESULTS



CONCLUSION



APPLICATION

