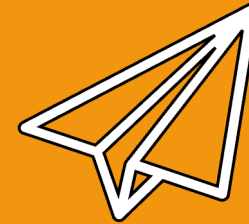


Orange County Science & Engineering Fair



Academy 101 Session 2



"Experimental Design"




Welcome Back!

First Timers
6 Classes
Basics
Resources
ocsef.org

EXPECTATIONS

- ✓ Start a notebook
- ✓ Participation
- ✓ Keep Up
- ✓ Make it Fun!



Let's share some
of your ideas!!!

Science Project

1. How does _____ affect _____?
(*Independent/Manipulated Variable*) (*Dependent/Responding Variable*)
The variable you are testing) what happened as a result of
testing the Independent Variable)

Ex. How does the *type of insulation* affect the *temperature inside* of a dog house?

2. What are the effects of _____ on _____?
(*Independent/Manipulated Variable*) (*Dependent/Responding Variable*)

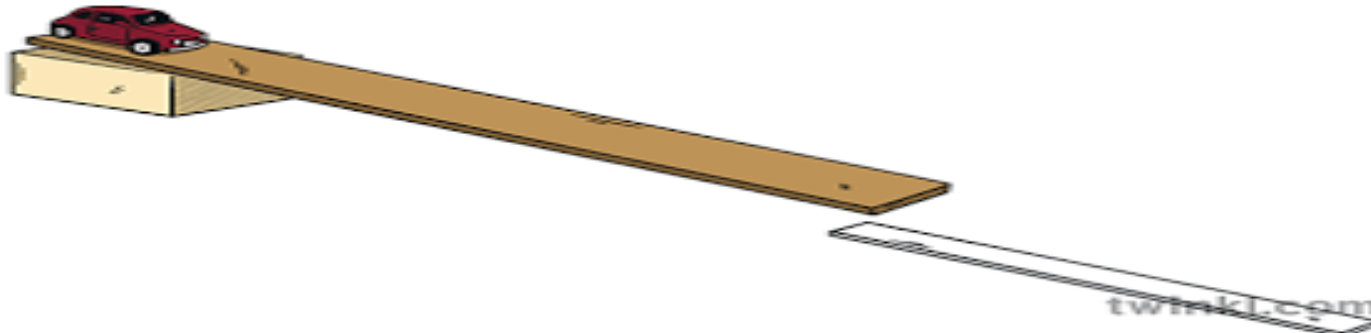
Ex. What are the effects of *3 types of soap* (Ivory, Tide, Gain) on *removing ketchup stains* on white socks?

Engineering Project:

1. Problem: How to prevent flood water from entering a house.

Ex. What is the *best material*, to put in a sandbag, to *block water* from entering the *given model house*?

Criteria = Material must "block water from entering the given model house".



Question: How does the **position** of weight or mass on the top of a toy car: front, middle, back, affect the **distance it can coast** downhill?

Background information: - Friction - Momentum - Gravity - Roller Coaster design?

Hypothesis: I think _____ because _____

(Distance Car Traveled (inches))

Data Table: Position: Trial 1. 2. 3. Average:

-Front:				
-Middle:				
-Back:				

Conclusion: I found out that _____ because _____

Lab Reports

1. **Problem:** Your question! What do you want to learn or design?
2. **Hypothesis:** Educated guess! What do you think will happen? WHY? Research!
3. **Materials:** What will you need to run experiments or tests?
4. **Procedure:** What are the steps or instructions for a fair test? Design?
5. **Data:** Information gathered by observations. Numbers & Describe.
6. **Results:** Patterns in data. Graphs and descriptions.
7. **Conclusion:** Answer to your question/final design. Supported or not? Why? What did you learn? Problems? Next questions?

What you can write

**Write everything
down
in your notebook!!!!**

ment/design!

Questions?

