

# Do Now

Tuesday, August 15, 2016

How do we differentiate  
between independent and  
dependent variables?

Write your answer using complete  
sentences.

3.5 minutes

Do Now Check

By the end of the day today, IWBAT...

- Differentiate between Pure & Applied Science; Constant variable and Control Variables.

**Why it matters in LIFE:**

Learning the differences between the constant and control variables are crucial to forming logical plans.

**Why it matters in THIS CLASS:** You will conduct labs all year long that will require mastery of these concepts! Tested material.

# Friday, 08/12/16

## P.S.1; P.S. 2-11:

Distinguish between scientific hypotheses and scientific theories.

By the end of today,  
IWBAT...

Explain the Difference between constant and control

## Essential Questions:

How do we differentiate between pure and applied science...differences between control and constant variables?

## Topic:

Scientific Methods (II)

# Agenda

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- ~~□ Do Now (5)~~
- Pure vs. Applied Science
- Constant variables vs. Control Variables
- Lab #01-1 – Designer Planes Lab Instructions
- Pair with partner to conduct Designer Planes Lab

# Expectations (Intro to New Material)

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- No talking while I, or anyone else, is speaking
- Raise your hand if you have something to say
- You may not leave the room at this time
- Take notes as directed

# What is the Difference between PURE and APPLIED SCIENCES?

- Pure Science **increases** the **knowledge base** of a field of research

- **[EXPANDING KNOWLEDGE BASE]**

Ex: Theoretical Physics, Chemistry, Mathematics

- Applied Science **uses** the **knowledge base** supplied by basic science to devise solutions, often technological, to specific problems.

- **[USING THE KNOWLEDGE BASE]**

Ex: Structural Engineering, Chemical Engineering

# Recall the SIX steps for the Scientific Method?

- REMEMBER THIS BASIC FORMAT FOR CONDUCTING EXPERIMENTS

Basic Format:

1. Ask a Question
2. Do background research
3. Form a hypothesis
4. Test your hypothesis
5. Collect and analyze data
6. Draw a conclusion

# What is the Control Variable?

- In an experiment, the control variable is the experimental element which is constant and unchanged throughout the investigation

Restated:

1. A variable in an experiment which is held constant in order to assess the relationship between two other variables.



# What is the Constant Variable?

- In an experiment following the scientific method, a constant is a variable that cannot be changed, or is purposefully not changed during the experiment.
- Examples of Constant Usage:
- Some constants are purposeful and selected by the scientist to control an experiment while others are more universal and beyond a researcher's control.

# Expectations (Intro to Lab Procedures)

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- No talking while I, or anyone else, is speaking
- Raise your hand if you have something to say
- You may not leave the room at this time
- Take notes on your lab sheet as necessary

# Expectations (Independent Practice)

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- Pair Up!
- Ensure that you understand the lab procedures
- Raise your hand if you have a question
- If I am helping someone else, ask another pair quietly
- Everyone must throw from the same starting point to avoid injuring another classmate with your planes!

# Closing

## Reminders:

Make certain your  
lab answers are  
complete

## Next Class:

Dimensional  
Analysis!  
Measuring!

Anything you did not  
finish today is due  
on WEDNESDAY.