

# WHAT IS THE SCIENTIFIC METHOD?

**Ms.Tilts**

TOPIC: WHAT IS THE SCIENTIFIC METHOD?

← Copy in Binder

HW: BELL RINGERS DUE MONDAY, FINISH IV/DV WORKSHEET  
FROM CLASS

← Copy in Planner

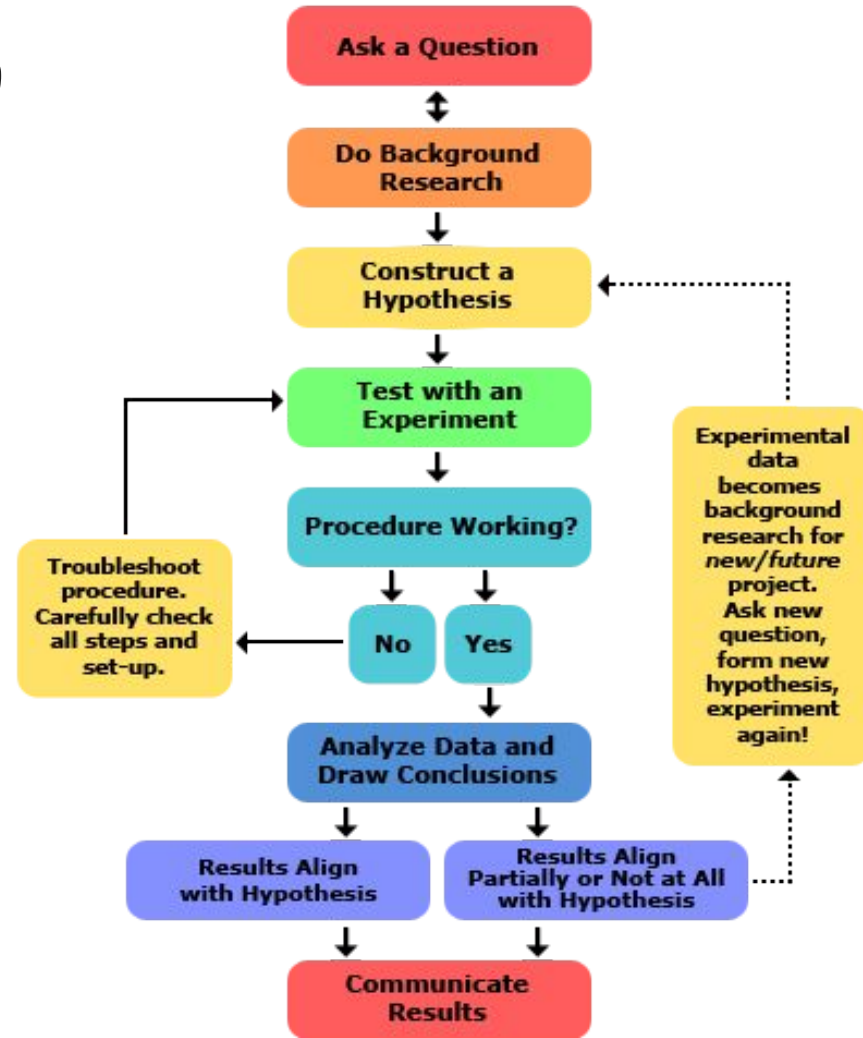
Don't  
forget to  
turn late  
work in!

DO NOW: IMAGINE YOU ARE A FAMOUS SCIENTIST. WHAT  
STEPS WOULD YOU TAKE TO MAKE A DISCOVERY?

← Copy AND answer  
in binder

# WHAT IS THE SCIENTIFIC METHOD?

**Scientific Method:** a step-by-step method used to gather, analyze, and interpret evidence to test a tentative claim (hypothesis).



# INTRO TO UNIT- ANIMAL BEHAVIOR FIELD STUDY

**Field Investigation:** an experiment in which one variable is chosen within a natural environment to observe and measure how that chosen variable affects another variable.



# HOW DO WE SET UP AN EXPERIMENT?

**Independent Variable (IV):** the part of an experiment that is changed on purpose by the scientist (manipulated variable). I changes the independent variable- the CAUSE.

**Dependent Variable (DV):** the part of an experiment that may change in response to the independent variable. THE EFFECT.

**Constants (C):** the parts of an experiment that are kept the same to ensure a fair test. These are the things you keep the same to ensure there is only one independent variable.

**Control Group (CG):** the part of an experiment that receives no special treatment (no purposeful changes); not every experiment has a control group. This would be the NORMAL group.

# EXAMPLE

Ms. Tilts and her students want to test how the type of liquid used to water a plant will affect its growth. She uses gatorade, soda, water, and red bull.

**Independent:** type of liquid used

**Dependent:** plant height

**Control:** plants that received water

**Constants:** type of plant, amount of sun, amount of liquid, type of soil, etc.

## Types of Variables

### Independent

The one thing you change.  
Limit to only one in an experiment.

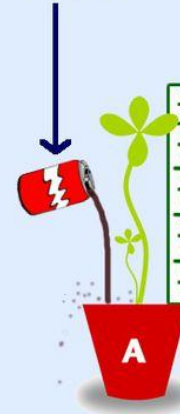
**Example:**  
The liquid used to water each plant.

### Dependent

The change that happens because of the independent variable.

**Example:**  
The height or health of the plant.

Independent Variable



Dependent Variable



# LET'S PRACTICE

**Class:** We will do numbers 1 & 2 as a class

**Group:** Your group will do numbers 3-6 together

**Independent:** you will do numbers 6-11 alone

# EXIT TICKET- THIS IS INDEPENDENT, PLEASE PUT YOUR NAME ON YOUR POST-IT.

Ms. Tilts wants to know if the amount of sleep a student gets affects their score on a test the next day. She has the same student sleep the normal seven hours and take a test. The next week, she has the same person sleep 3 hours and take the same test. The next week, the same person sleeps ten hours and takes the same test. She compares the three test scores.

- 1) What would the independent variable be for this experiment?
- 2) What would the dependent variable be for this experiment?
- 3) What would the constants be in this experiment?
- 4) What would the controls be in this experiment?