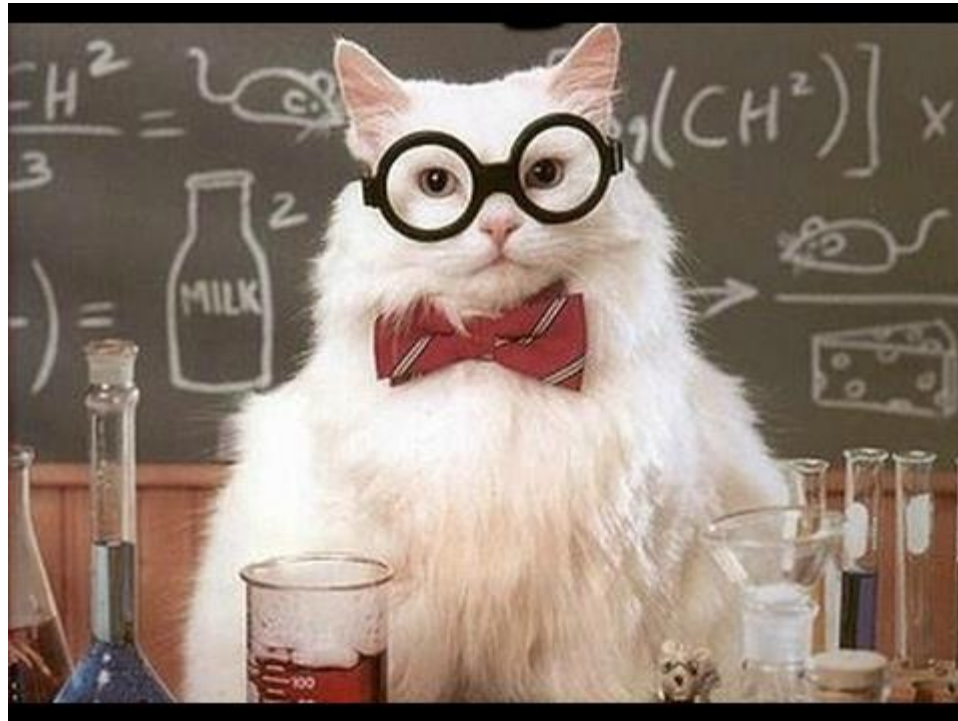


# Identifying Experimental Variables



<https://youtu.be/nqjOrJEf3Ew>

# Types of Experimental Variables

**Manipulated (independent) Variable:** The variable that is changed by the scientist;

- “I control...”

**Responding (dependent) Variable:** The variable that might change because of what the scientist changes – what is being measured;

- “I am waiting to see...”

# Remember!

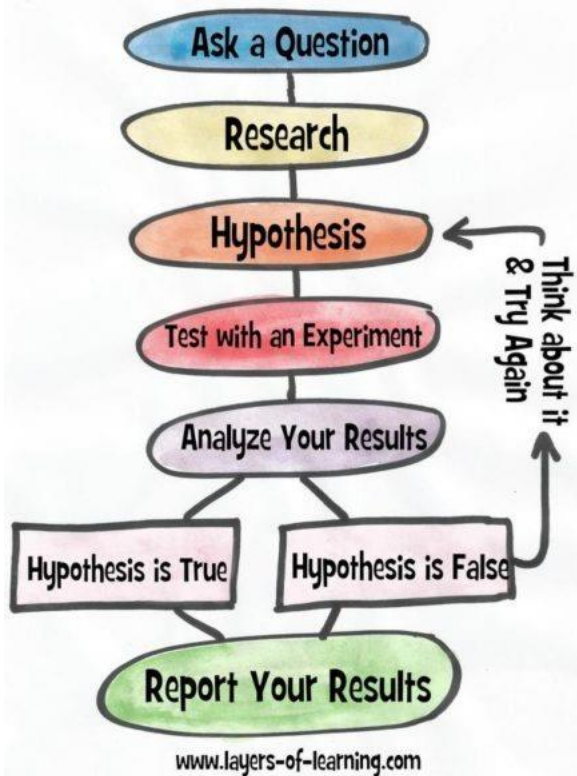
Your hypothesis can TELL you what your variables are!

Example Hypothesis:

**If I drink Mountain Dew before bed,**  
**then I will not sleep very much.**

**Manipulated Variable:** *drinking Mountain Dew*

**Responding Variable:** *amount of sleep you get*



# Practice

*Use this hypothesis to identify the variables:*

If I leave all the lights on all day,  
then my electric bill will be expensive

Manipulated Variable: leaving lights on or not

Responding Variable: cost of electric bill

If I brush my cat more, then there will be less fur on my furniture

Manipulated Variable: amount of brushing

Responding Variable: amount of fur on furniture

*Now read the following experiment and identify the manipulated and responding variables*

Elizabeth wanted to test if temperature affected how fast milk goes bad and curdles. She left milk in a room temperature closet, a fridge, and a oven that was turned on low heat. She then measured how rotten the milk was after 10 days.

Manipulated Variable: temperature of milk

Responding Variable: amount of curdling

# Controlled Variables

**Variables that remain the same throughout the experiment**

**If I drink Mountain Dew before bed, then I will not sleep very much.**

**Controlled variables:** lights off at night, pjs worn, bed slept in, pillow used, time of night, sleeping temperature, etc.