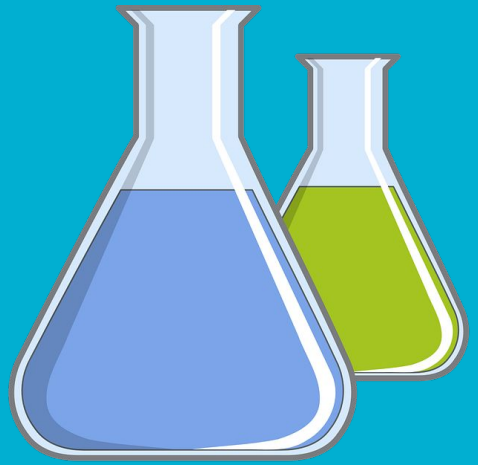
Experimental Design



1. Identify the Problem

A) Must identify the independent variable.
   a) Manipulated
   b) The variable that does not depend on the other, the one that will change

B) Must identify the dependent variable.
   a) Response
   b) The Variable that is effected by the independent variable

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Examples With Variables

Examples: Identify the independent and dependent variable

- How does the height of the ramp affect the speed of a car?
  - Independent: Height of Ramp Dependent: Speed of car
- How do different chemicals in fertilizer affect plant growth?
  - Independent: Chemicals used Dependent: Plant growth
- How does a medicine affect growth of cancer?
  - Independent: Medicine Dependent: cancer growth

2. Conduct an experiment

A) Must have a clear plan that can be repeated by anyone to get the same results.
   a) - Steps need to be clearly stated and explained.
B) Must record information (Data table)

3. Share Information

A) Must analyze and conclude

Analyze the following data tables:

Height of Ramp (centimeters)	Speed of car (centimeters per second)
4	3
6	5
8	7.5
10	9

The data table on the left shows that the higher the ramp the faster the speed of the car. In conclusion the height of the ramp does have an impact on the speed of the car.

Your mission:

1. Work with your assigned partner
2. Create an experiment
    a. What is your problem? (Scientifically)
    b. Make sure you have an independent and a dependent variable

3. Fabricate (make up) a data table

Once this is done you will swap experiements with another partner group and identify…

1. Indepedent and dependent variable
2. Analyze what correlation if any there is in the data table.