

Scientific Explanations

Lesson 3: Case Study

Controlled Experiment: a scientific investigation that tests how one variable affects another

- **Variable:** any factor in an experiment that can have more than one value
 - Example: You want to build muscle and decrease your fat. You could change:
 - Eating habits
 - Workout routine
 - Add supplements
 - Which one is more important?
 - **Dependent variable:** the factor you observe or measure during an experiment
 - **Independent variable:** the factor that you want to test
 - It is changed by the investigator to observe how it affects a dependent variable
 - **Constants:** the factors in an experiment that remain the same

2 groups to a controlled experiment:

- *Experimental group:* used to study how changes the independent variable changes the dependent variable
- *Control group:* contains the same factors as the experimental group, but there are no changes made to the independent variable
 - Important otherwise you don't know how the changes affect one factor from another.
 - This is usually the placebo group.

Read pages NOS 21 – NOS 27