

# Experimental Design Template

Complete this ExD planning form BEFORE beginning a an experiment

**Title:** *The Effect of ... (IV) on ... (DV). (write last)*

**Independent Variable:** *Name the variable that you will purposefully change during the experiment; include units. Indicate the levels of IV in the columns below. (# of minutes, different temperatures, levels of fertilizer, types of soil...etc)*

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**Dependent Variable:** *Name the variable will be measured, that responds to changes in the IV. (Population growth; Dissolved oxygen level, plant height, habitat preference, etc...)*

**HYPOTHESIS:** *What you think will occur to the Dependent Variable (DV) as you change the Independent Variable (IV) – the cause & effect relationship. Use an “if...then... format. Your educated guess MUST be testable.*

**Control:** *What is the experimental group you will use for comparison?*

**Repeated Trials:** *How many numbers per group; how many times will the experiment be performed?*

**Constants:** *List everything that will be kept the same in the experiment - (light, temperature, wind level, noise level, amount of water, etc...)*

**SKETCH OF EXPERIMENTAL SETUP, with labels:** *(put on back)*

## Experimental Design: *Example*

**Title:** *The Effect of Different Amounts of Fertilizer on the Plant growth*

<b>Independent Variable:</b> Amount of Fertilizer				
1 ml fertilizer/L water	5 ml fertilizer/L water	10 ml fertilizer/L water	15 ml fertilizer/L water	20 ml fertilizer/L water

**Dependent Variable:** *Plant height, from base to highest leaf where it attached to stem.*

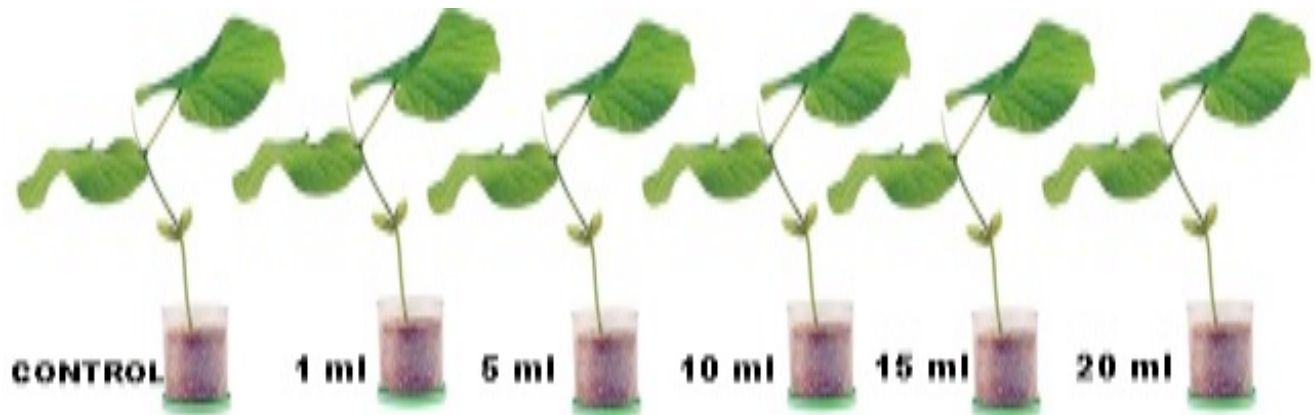
**HYPOTHESIS:** *If 10 ml f fertilizer/L of water (recommended amount) is added to the bean plants, then the bean plants should grow taller than any other bean plants.*

**Control:** Plants with no fertilizer added

**Repeated Trials:** 5 bean plants for each concentration, 5 bean plants for the control

**Constants:** *Brand of fertilizer, direction and level of light, wind level, species of plant, time & amount of watering, type of soil and container*

**SKETCH OF EXPERIMENTAL SETUP, with labels:**



***Set-up at beginning of experiment (each concentration group = 5 plants)***