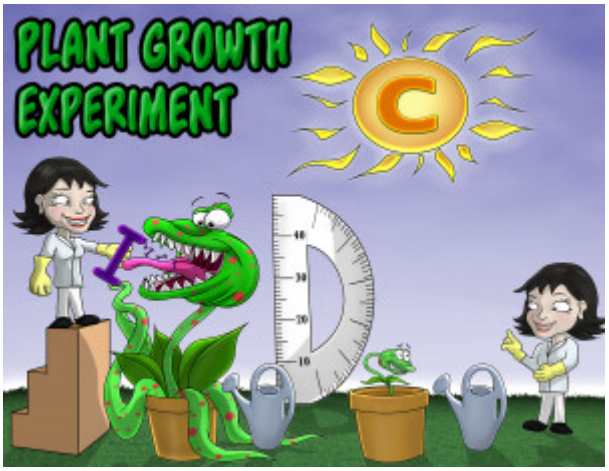
Plant Growth Experiment

In this plant growing experiment, the scientist is trying to figure out if providing more fertilizer will allow the plant to grow taller.

The independent variable (IV) is the "manipulated" variable that the scientist is changing and the dependent variable (DV) is the "responding" variable that the scientist measures. The experiment is designed to determine how the independent variable affects the dependent variable. However, in order to know that the independent variable is what caused the change, all other variables must not be manipulated. Those variables are called control variables, and they remain constant and unchanged between the two groups in the experiment.

In this experiment, the addition of fertilizer is the independent variable manipulated by the scientist. Plant height is the dependent variable that responds to the change in the independent variable. Each plant is exposed to an equal amount of sunlight, so sunlight is the control variable. They are also grown in the same sized pot and given an equal amount of water. Both of those are also control variables, or constant variables.



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Independent Variable

I-Shaped Fertilizer

Independent variable is the variable in an experiment that is manipulated by the scientist in order to see if it leads to different effects.

Dependent Variable

D-Shaped Ruler

The dependent variable in an experiment is the variable that is measured or the result.

Dependent variable shows the effect of the independent variable

I-Shaped Fertilizer increases height of the plant shown by D-Shaped Ruler

The independent variable is changed by the scientist to see if the dependent variable is affected. In any experiment, the scientist is trying to test if changing one thing causes the result to be different. So what is being changed is the independent variable and the result or outcome is the dependent variable.

Control (Constant) Variable

Constant C-Sun

The control variable is a variable in the experiment that is not changed and kept constant between the two groups. If scientists did not keep all other variables constant, it would be difficult to determine which variable was responsible for the change in the dependent variable. In this experiment, the sun is a control variable because both plants receive the same amount of sunlight.

Other Variables

Water

Watering Container

The control variable is a variable in the experiment that is not changed and kept constant between the two groups. If scientists did not keep all other variables constant, it would be difficult to determine which variable was responsible for the change in the dependent variable. In this experiment, water is a control variable because both plants receive an equal amount of water.

Pot Size

Flower Pot

The control variable is a variable in the experiment that is not changed and kept constant between the two groups. If scientists did not keep all other variables constant, it would be difficult to determine which variable was responsible for the change in the dependent variable. In this experiment, the pot is a control variable because both plants are grown in the same sized pot.