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HYPOTHESIS AND VARIABLES

Hypothesis: an educated guess or prediction.

A hypothesis has the words if, then in the sentence.

Example:

Independent Variable: I feed my cat a lot of food

Dependent Variable: she will get fat

Hypothesis: If I feed my cat a lot of food, then she will get fat.

Identifying Variables:

There are two main types of variables.

Independent Variable: The variable that is changed by the scientist; the "I control" variable.

Dependent Variable: The variable that might change because of what the scientist changes; what is being changed.

Example:

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 an oven that was turned on low heat. She then measured how rotten the milk was after 10 days.

What is the IV? Temperature of the location What is the DV? How rotten the milk was

Controls and Constants

Constant: something that scientist makes sure is the same throughout the experiment

Ex. Watering the plants the same amount of water or making sure you are testing the same person every time

Control: The part of the experiment that the scientist doesn't change or add the variable to

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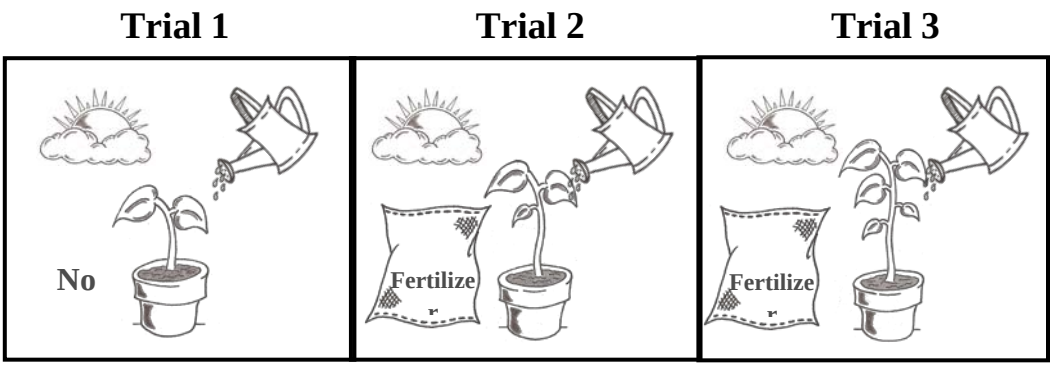

What is the independent variable in the experiment above? Usage of different types of fertilizer

What is the dependent variable in the experiment above? Amount the plant grows

Why are the constants kept the same in every trial? So the experiment and results remain accurate

What are constants in the experiment above? Sunlight, water, same type of plant

A student decided to conduct an experiment to investigate one of the factors involved in plant growth. She randomly selected twenty plants of the same species from the local plant nursery and placed them all in identical pots with the same type of soil. She gave them all the same amount of water and fertilizer, but she placed ten of the plants by a window and ten of the plants in a dark closet. She observed the plants and measured their growth daily for three weeks.

What is the independent variable? Amount of light the plants received

What is the dependent variable? Plant growth

What are the constants? Same species of plants, all plants bought from same nursery, all plants put in the same pot, all plants put in the same soil, all plants had same amount of water and fertilizer, all plants' growth were measured for three weeks

What typically happens to the dependent variable at the end of an experiment?

It changes based on the independent variable

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