



Science Virtual Learning

6th Grade Science:

Independent and Dependent variables

May 6, 2020



6th Grade Science
Lesson: May 6, 2020

Objectives/Learning Targets:

Students will be able to identify the independent and dependent variables in an experiment.

Warm Up
Listen to the [The Variables Song](#).



Answer this question on a piece of paper:
What is an independent variable and dependent variable?



Background Information

What is a variable? A variable is an object, event, idea, feeling, time period, or any other type of category you are trying to measure. There are two types of variables- independent and dependent.

Independent variable: is a variable that stands alone and isn't changed by the other variables you are trying to measure.

Dependent variable: is something that depends on other factors.

Tips for Remembering the Variables

Independent Variable (IV):

- Purposely changed
- Suspected cause
- Manipulated variable
- Graphed on the x-axis
- Think "I = I change it."

Dependent Variable (DV):

- What is measured or observed
- Effect or outcome
- It's the data collected
- Graphed on the y- axis
- Think "D is for data"

Practice

Use this [link](#) to test your knowledge of independent & dependent variables. Answers will be checked after you submit your response.

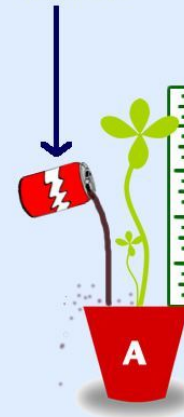
Types of Variables

Independent

The one thing you change.
Limit to only one in an experiment.

Example:
The liquid used to water each plant.

Independent Variable



Dependent

The change that happens because of the independent variable.

Example:
The height or health of the plant.

Dependent Variable



Controlled

Everything you want to remain constant and unchanging.

Example:
Type of plant used, pot size, amount of liquid, soil type, etc.

Controlled Variables





Practice 2

Answer the questions on a piece of paper.

Directions: Read about the hypothetical experiment and identify the different variables, independent and dependent.

1. A scientist is testing to see if there is a connection between how long you run and how fast your heart beats. A person will run for 1 minute and then check their heart rate. Then they will run for 2 minutes and check their heart rate. Repeat this up to 6 minutes and see if there is a connection. What are the variables?

A. Independent (Test) Variable:

B. Dependent (Outcome) Variable:



Practice 2

Answer the questions on a piece of paper.

Directions: Read about the hypothetical experiment and identify the different variables, independent and dependent.

2. A scientist is testing to see if the pH level of the soil has any effect on the plant height. She changes the soil pH to low and high for different plants. What are the variables?

A. Independent (Test) Variable:

B. Dependent (Outcome) Variable:



Practice - Answer Key

1. A scientist is testing to see if there is a connection between how long you run and how fast your heart beats. A person will run for 1 minute and then check their heartbeat. Then they will run for 2 minutes and check their heart rate. Repeat this up to 6 minutes and see if there is a connection. What are the variables?

A. Independent (Test) Variable: Amount of time running

B. Dependent (Outcome) Variable: Heart rate



Practice - Answer Key

2. A scientist is testing to see if the pH level of the soil has any effect on the plant height. She changes the soil pH to low and high for different plants. What are the variables?

A. Independent (Test) Variable: pH level of soil

B. Dependent (Outcome) Variable: Height of plant



Additional Practice

1. [IXL: Independent & Dependent Variables](#)

Remember you do not need to log in. Just complete the 5 free practice questions.

2. Practice identifying variables [here](#). The answer key is at the bottom of the page.

3. Variable practice [quizizz](#).