

Lesson 4: How Do I Do a Controlled Experiment?

BBB: Cardinal Red- Identifying Variables

Purpose

Watch the video located at any one of the following addresses:



<http://goo.gl/OrkG5V>

<http://www.youtube.com/watch?v=10nEJtg6lYI&feature=youtu.be>

Your Progress:

- Mastery
- Proficient
- Developing
- Beginning

Word Wall:

An _____ variable is what is changed or manipulated by the experimenter.

A _____ variable is what you measure and collect data on.

A _____ variable is parts of the experiment that stay the same to keep the experiment fair.

Questions:

1. Match the variables to the example in the video, and their descriptions.

_____ The load being carried by the person

A. Independent Variable

_____ The stride length of the person

B. Dependent Variable

_____ The type of surface being walked on

C. Controlled Variable

_____ The angle of the floor

_____ The height of the person

2. In Activity 3.1 we dropped canned beans on clay from different heights, we had many controlled variables. Which best describes a controlled variable from this experiment? (Circle one)

- The clay
- The mass of the clay
- The ruler
- The height should be the same
- The squish of the clay

3. Mr. Bingaman likes to drop water balloons off the roof. He decides to do an experiment to see if different size water balloons fall at different speeds. He makes three water balloons. Each one uses the exact same type of balloon, but with different amounts of water. He carefully checks the wind speed and direction to be sure it is stable, and drops each balloon, careful to release them the same way and from the same height. He times each one as he drops them to see how long it takes to hit the ground.

Which of the following is the independent variable? (Circle all that apply)

- a. The amount of water in the balloon
- b. The type of balloon
- c. The height the balloon is dropped from
- d. The time it takes to hit the ground
- e. Wind speed and direction
- f. The method of releasing the balloon

Which of the following is the dependent variable? (Circle all that apply)

- a. The amount of water in the balloon
- b. The type of balloon
- c. The height the balloon is dropped from
- d. The time it takes to hit the ground
- e. Wind speed and direction
- f. The method of releasing the balloon

Which of the following are controlled variables? (Circle all that apply)

- a. The amount of water in the balloon
- b. The type of balloon
- c. The height the balloon is dropped from
- d. The time it takes to hit the ground
- e. Wind speed and direction
- f. The method of releasing the balloon