

Write on your own sheet of paper.

Include a heading on your paper! Include the Assignment Name "Experimental Variables Formative Assessment" on your paper.

Earth Science

Experimental Variables Formative Assessment

(Snow White and all her Friends)

Name the Independent Variable and Dependent Variable in each experiment.

1. Prince Charming wanted to see if the size of a ball is related to how fast it will roll down a ramp. He rolled a ping pong ball, a tennis ball, a volleyball and a basketball down a ramp and timed how long it took each one to move 2 meters across the floor.

a) Independent Variable -

b) Dependent Variable-

2. Cinderella wanted to see if the type of food given to her 10 mice would make them better seamstresses and therefore more productive in making ball gowns. She gave 5 of her mice their regular food (cheese puffs), and the other 5 mice new food (peanut butter).

a) Independent Variable -

b) Dependent Variable -

3. Bill Nye wanted to see if the color of a rock is related to the hardness (resistance to breaking). He collected round, dark rocks from along the Yellowstone River and light colored rocks with sharp edges from beneath the Rims. He dropped a bowling ball on each rock from 3 meters high and counted how many drops it took to break each rock.

a) Independent Variable -

b) Dependent Variable -

In order for experiments to be fair and controlled, all variables must be the same except the Independent Variable and Dependent Variables. This is done so that these variables will NOT affect the results, and any differences in the results are more likely to be due to the Independent Variable.

List one controlled variable in each of the experiments above.

4. Controlled Variable (Prince Charming)--

5. Controlled Variable (Cinderella)--

6. Controlled Variable (Bill Nye) --

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Name the Independent Variable and Dependent Variable in each experiment. Also name 1 controlled variable and 1 uncontrolled variable.

7. Carl Sagan wanted to investigate whether boys are better at science than girls. He compared the grades of junior girls in Chemistry class to the grades of junior boys in Anatomy & Physiology class.
 - a) Independent Variable -
 - b) Dependent Variable -
 - c) Controlled Variable -
 - d) Uncontrolled Variable -
8. Phineas and Ferb wanted to see if the size of a parachute was related to the speed at which the parachute falls to the ground. They cut 3 squares out of a garbage bag that were 16 cm^2 , 25 cm^2 , and 36 cm^2 in area. He attached 4 of his favorite plastic toy US Armed Services model soldiers, one from each branch of the Service. They dropped each soldier from the top of their house and timed how long it took them to hit the ground.
 - a) Independent Variable -
 - b) Dependent Variable -
 - c) Controlled Variable -
 - d) Uncontrolled Variable -
9. Dr. Sheldon Cooper wanted to determine whether there is a relationship between color and how much radiation it absorbs. He crumpled up 5 sheets of paper: white, red, green, blue, and black. He put the white and black paper in 2 liter pop bottles. He put the red, green and blue paper in 1 liter pop bottles. He shined light on all 5 bottles and recorded the temperature of the air inside the bottles after 5 minutes.
 - a) Independent Variable -
 - b) Dependent Variable -
 - c) Controlled Variable -
 - d) Uncontrolled Variable -
10. Snow white was not really asleep at all. She was performing an experiment on the Seven Dwarves. She was trying to learn which of the Dwarfs was most trustworthy. She had a motion sensor hidden in her glass casket that recorded the Dwarves coming to see her. She used the recording to time how long it took each Dwarf to arrive each morning and how long they stayed at her bedside each day for one week.
 - a) Independent Variable -
 - b) Dependent Variable -
 - c) Controlled Variable -
 - d) Uncontrolled Variable -