

Identifying Variables

- The **Independent Variable (I.V.)** is the factor of an experiment which is changed/manipulated by the experimenter. (What is being tested)
- The **Dependent Variable (D.V.)** is the factor of an experiment which is changed as a result of the I.V. (What is being measured)
- The **Controlled Variable (C.V.)** are all other factors in an experiment which are kept constant so that they do not affect the data (What is being kept the same)

Directions: For each scenario, identify the Independent Variable (I.V.), the Dependent Variable (D.V.) and the Controlled Variable (C.V.). Also critique the difficulties with the experiment.

- 1) Brittney thought that listening to music while studying would improve memory. She decided to test this on her friends by playing Backstreet Boys for 2 minutes while they memorized items in a picture. She compared this to having them memorize another picture for 2 minutes with no music at all and recorded the percent of correct answers.

I.V. _____

D.V. _____

C.V. _____

Difficulties: _____

- 2) Eric thought his Reebok basketball shoes made him jump higher than his Nike basketball shoes. Jacob didn't believe him so Eric decided to test this by jumping first with Reeboks, then with Nikes in the same spot while Jacob measured how high he jumped. He did this 3 times for each brand of shoe.

I. V. _____

D.V. _____

C.V. _____

Difficulties: _____

- 3) Instead of eating candy, Mariah decided to eat fruit instead. She was convinced that the soil in her front yard would grow larger bananas than the soil in her back yard. She planted the same type of banana in both places, gave them the same amount of water, and waited until they grew. She then measured the weight of the bananas.

I.V. _____

D.V. _____

C.V. _____

Difficulties: _____

- 4) Lilly enjoyed growing beautiful flowers. She decided to test if adding vitamins to the water she gave her daisies would cause them to grow faster. She began by planting 10 daisy seeds in 2 identical pots using the same type of potting soil. She gives one pot $\frac{1}{2}$ cup water supplemented with vitamins and to the other pot she gives $\frac{1}{2}$ cup plain water. She waters the plants the same time of day and placed both pots by the same window. She records how long it takes the seeds to sprout.

I.V. _____

D.V. _____

C.V. _____

Difficulties: _____

5) Paul thought it would be cool to listen to his MP3 player while catching the bus to surf but he wanted to know which batteries last longer, Duracell or Energizer. He thought Duracell would win so he first tested new Duracell batteries and recorded the time until the batteries died and then tested new Energizer batteries in the same way.

I.V. _____

D.V. _____

C.V. _____

Difficulties: _____

6) Camey loves her pens and wants to know which would last longer, Gelly Roll or Pilot G2. She decides to test this by using brand new pens and scribbling with both at the same time until one runs out of ink. She records the time that each pen lasts.

I.V. _____

D.V. _____

C.V. _____

Difficulties: _____

7) Bethany wanted to know which paper towel is stronger, Bounty or Brawny. She decided to test this by soaking each paper towel in water. She then had her friends hold each corner of the paper towel while she added .025 lb weights in the middle until it broke. She recorded the weight that finally broke the paper towel.

I.V. _____

D.V. _____

C.V. _____

Difficulties: _____

8) Robert was wondering which lollipop would last longer, Tootsie Roll or Jolly Rancher. He decided to test this by first placing the Tootsie Roll lollipop in his mouth and timing how long it took to dissolve. He then repeated this for the Jolly Rancher lollipop making sure not to open his mouth or talk in either trial.

I.V. _____

D.V. _____

C.V. _____

Difficulties: _____

9) Madrell was disagreeing with Michael that wooden bats could hit farther than aluminum bats because wood is more flexible. He decided to test this by dropping a baseball straight down from 5 feet above each bat while Michael recorded how high it bounced off the bat.

I.V. _____

D.V. _____

C.V. _____

Difficulties: _____

10) Jacob notices bees flying around a bottle of soda and wants to know if bees are attracted to the sugar in the soda. He opens two Aquafina bottles of water and puts sugar in one of the bottles. He places both bottles near each other in the middle of his yard and records how many bees visit each bottle.

I.V. _____

D.V. _____

C.V. _____

Difficulties: _____