

Identifying Variables Worksheet

For the following experiments, define the (IV) independent variable, (DV) dependent variable, (SV) standardizing variables and (CG) control group.

1) Different rose bushes are grown in a greenhouse for two months. The number of flowers on each bush is counted at the end of the experiment.

IV - The thing that the scientist is in control of that's different for each group = The type of rose bush

DV - The thing that is measured or counted = How many flowers each bush produced

SV - The things that are kept constant or the same = The environment (greenhouse), and the length of the experiment

2) You water three sunflower plants with salt water. Each plant receives a different concentration of salt solutions. A fourth plant receives pure water. After a two-week period, the height is measured.

IV The amount of salt water for each flower

DV The height of the plants

CG The fourth plant that receives only water

3) Three redwood trees are kept at different humidity levels inside a greenhouse for 12 weeks. One tree is left outside in normal conditions. Height of the tree is measured once a week.

IV The humidity levels

DV The height of the trees

SV Type of tree, length of experiment and frequency of measurements

CG The tree left outside in normal conditions

4) Pea plant clones are giving different amounts of water for a three-week period. First pea plant receives 400 milliliters a day. The second pea plant receives 200 milliliters a day. The third pea plant receives 100 milliliters a day. The fourth pea plant does not receive any extra water; the plant only receives natural ways of receiving water. The height of pea plants is recorded daily.

IV The amount of water each plant receives

DV The height of the pea plants

SV Same type of plants (pea), same quality (source) of water

CG The fourth pea plant that doesn't receive any extra water.

5) One tank of gold fish is fed the normal amount of food once a day, a second tank is fed twice a day, and a third tank four times a day during a six week study. The fish's weight is recorded daily.

- IV The amount of food fed to the fish
- DV The weight of the fish
- SV The type of fish (gold), the size of tank, the type of food
- CG The fish fed the normal amount of food

6) You decide to clean the bathroom. You notice that the shower is covered in a strange green slime. You decide to try to get rid of this slime by adding lemonade juice. You spray half of the shower with lemonade juice and spray the other half of the shower with water. After 3 days of spraying equal amounts 3 times a day, there is no change in the appearance of the green slime on either side of the shower.

- IV The spray used on the slime (water or lemonade)
- DV The amount of slime
- CG The side of the shower sprayed with water

7) You decide to clean your bedroom. You notice that your floor is covered with clothes. You decide to try to get rid of the clothes by throwing the clothes into the air. You throw clothes from a 1/3 of the room into the closet and a second 1/3 of the room straight up in the air. The last 1/3 of the room you leave the clothes on the floor. After 30 minutes of "cleaning", the floor of the room is now visible.

- IV The method of 'cleaning
- DV The amount of floor visible
- CG The clothes left on the floor

8) You want to test which size of soccer (football) ball is easiest to juggle with your feet. You test a size 3, size 4 and a size 5 ball. You count the seconds the ball stays in the air for each of the trials. You allow yourself to use both of your feet, knees, and head to juggle the ball.

- IV The size of the ball
- DV The time the ball stays in the air
- SV The type of ball, the same player