



Types of Variables **Mystery Picture**

Select the correct answer for each question from the options provided. The correct answer indicates a colour that you should use on the colouring page. The question number corresponds with the number on the colouring page. When you are finished, you will reveal a mystery picture!

1. The _____ variable is the variable that you change or select the values for.			2. The _____ variable is the variable that is measured.		
dependent red	independent blue	controlled green	controlled green	independent orange	dependent blue

A student investigated how the number of bulbs in a series circuit affected the current. Use this information to answer questions three and four.

3. What is the independent variable in the investigation?			4. What is the dependent variable in the investigation?		
number of bulbs yellow	amount of current light blue	equipment used in the investigation red	number of bulbs yellow	amount of current light blue	equipment used in the investigation red

A student investigated how the temperature in a greenhouse is affected by the material it is made from. Use this information to answer questions five and six.

5. What is the independent variable in the investigation?			6. What is the dependent variable in the investigation?		
thermo-meter blue	temperature purple	material used orange	thermo-meter blue	temperature purple	material used orange
7. We will use the following quantities of water: 50mL, 100mL and 200mL when testing the effect that different amounts of water have on plant growth. In this experiment water is the _____ variable.			8. In order to measure the growth of the plant, we can measure the height or number of leaves. In this experiment, the height of the plant is the _____ variable.		
dependent blue	independent red	controlled green	dependent green	independent red	controlled blue



9. There are other factors that can affect the experiment in question eight. For example, the type of plant used, the amount of sunlight received, the type and amount of soil, the temperature that the plants are exposed to and even the type of pots used. These factors are known as the _____ variables.			10. A student investigated how the <u>speed</u> of a ball is affected by its mass. The underlined variable is the _____.		
dependent brown	independent red	controlled pink	independent variable pink	dependent variable brown	controlled variable red
11. A student investigated how the speed of a ball is affected by its <u>mass</u> . The underlined variable is the _____.			12. A student investigated whether the time it takes for a chemical reaction to finish is affected by the volume of a reactant. What is the independent variable here?		
independent variable purple	dependent variable pink	controlled variable red	stopwatch pink	volume brown	rate of reaction red

Jake and Zeynab wanted to find out which pen performs best. They decided to conduct a test by examining various pens to determine which type writes the longest before running out of ink. Zeynab selected a ballpoint pen while Jake chose a fountain pen. They utilised their respective pens for writing at school starting Monday morning and by Thursday, Jake’s pen had run out of ink. Their assessment led them to the conclusion that ballpoint pens perform better.

Use this information to answer questions thirteen to fifteen.

13. What was the independent variable in the experiment?			14. What was the dependent variable in the experiment?		
the type of pen brown	the time it takes to run out of ink pink	the people red	the type of pen red	the time it takes to run out of ink green	the people pink
15. Can Jake and Zeynab say with certainty that ballpoint pens are always going to last longer than fountain pens?					
yes red	no brown	somewhat blue			



10	13	12	15	13	10	10	13	15	10	15	12	13	10	12
13	10	13	7	15	15	10	15	13	15	1	2	2	15	10
15	10	7	7	7	13	15	10	13	10	1	3	1	10	13
13	7	7	5	7	7	10	13	15	13	2	1	2	13	15
10	15	7	7	7	10	12	13	10	15	13	14	10	15	10
13	10	13	7	15	13	15	12	13	15	10	8	15	8	13
15	8	15	8	10	12	15	10	13	8	13	14	14	10	15
10	13	14	8	13	4	2	4	15	13	14	8	13	15	10
10	15	13	8	15	1	3	2	10	15	10	8	5	13	5
13	15	10	14	10	4	1	4	6	13	15	8	5	7	5
7	9	7	8	13	10	14	15	11	6	11	6	5	5	5
9	5	9	14	15	10	8	15	6	3	11	8	10	14	13
7	9	7	14	10	15	8	6	11	6	11	14	13	8	8
8	14	10	8	13	8	14	10	13	8	11	8	15	8	15
13	14	15	8	15	13	8	10	8	8	13	8	10	8	10
14	8	8	14	8	14	14	8	14	14	14	8	14	14	14