

Variables & Controls

Language of the Discipline: Use the R.A.C.E. writing strategy when **defining** each word in a complete sentence. Capitalize the first word and **follow** the sentence with a punctuation mark. Use **BLUE** font color when recording your responses.

Variable is **the**

Independent variable is

Dependent variable is what you will measure. These will be numbers you write.

The control in an experiment is used to compare changes that may occur in the experimental group. The control is something that does not change in an experiment and used to compare for changes that occur in the experimental group.

For each experiment below, **determine** the variables and controls. Remember, an independent variable is what you choose to test in your experiment. The dependent variable is what you will measure (these are the numbers you will write). A control is something that does not change in an experiment and is used to compare for changes that occur in the experimental group.

1. You go to the pet store to get **three different turtle species**. You are going to time them to see **how fast they can walk 10 meters**.

		Identify	
A.	Independent variable		What are you testing?
B.	Dependent variable		What are you measuring?
C.	Control		What does not change?

2. You are going to have the **same group** of students listen to **three types of music** as they take a test. You want to see if the type of music affects their **test scores**.

		Identify	
A.	Independent variable		What are you testing?
B.	Dependent variable		What are you measuring?
C.	Control		What does not change?

3. You are going to race **five derby car designs** to see which design makes the car **move the fastest**.

		Identify	
A.	Independent variable		What are you testing?
B.	Dependent variable		What are you measuring?
C.	Control		What does not change?

4. You pick ten different items from your house and drop them into water. You separate the items into two groups based on whether they sink or float (their density).

		Identify	
A.	Independent variable		What are you testing?
B.	Dependent variable		What are you measuring?
C.	Control		What does not change?

5. You want to see if changing the mass of a cube affects whether it sinks or floats. You choose ten cubes with the same volume (size), but different masses. You put each cube in water to test if it sinks or floats.

		Identify	
A.	Independent variable		What are you testing?
B.	Dependent variable		What are you measuring?
C.	Control		What does not change?

6. You drop a bouncy ball from three different heights to see if it changes the bounce of the ball.

		Identify	
A.	Independent variable		What are you testing?
B.	Dependent variable		What are you measuring?
C.	Control		What does not change?

7. You hop, skip, and walk 10 meters to see which activity you can complete the fastest.

		Identify	
A.	Independent variable		What are you testing?
B.	Dependent variable		What are you measuring?
C.	Control		What does not change?

8. You get a pig, cat, and dog from your friends. You want to see which animals can get through a maze the fastest.

		Identify	
A.	Independent variable		What are you testing?
B.	Dependent variable		What are you measuring?

C.	Control		What does not change?
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9. You think getting more sleep will help you concentrate better. You decide to get different amounts of sleep on four nights. You will use the time it takes you to complete a maze to determine if the sleep helps.

		Identify	
A.	Independent variable		What are you testing?
B.	Dependent variable		What are you measuring?
C.	Control		What does not change?

NUMBER 10 WILL BE COMPLETED LATER ONCE YOU HAVE DETERMINED THE EXPERIMENT/PROJECT YOU SELECT FOR YOUR SCIENCE PROJECT.

10. In your own words, describe an independent variable, a dependent variable, and a control of your Science Fair Project.

		Identify	
A.	Independent variable		What are you testing?
B.	Dependent variable		What are you measuring?
C.	Control		What does not change?