

## How to Write a Testable Question

What is a Testable Question? A testable question is one that can be answered by

designing and conducting an experiment

Testable questions have:

1. manipulated variable:
  - a. single condition that will be changed in an experiment
2. responding variable:
  - a. Condition that will be measured in an experiment
3. controlled variables:
  - a. The conditions that are kept the same in an experiment

Testable Question #1: Does changing the height of the ramp affect the speed of the car going down the ramp?

- Height of the ramp = manipulated variable
- The speed of the ramp = responding variable
- Same car, same ramp surface, surface the car roll onto = Controlled variables

Testable Question #2: Does changing the amount of light affect the growth rate of plants?

- Controlled variables: same type of light source, same plant

Testable Question #3: Does the temperature of water affect the time it takes a sugar cube to dissolve?

- Controlled variables: same sugar cube brand

### How to Turn a Non-testable Question into a Testable Question

1. Read the question carefully
  - Which brand of shoe makes you run faster Nike or New Balance?
2. Determine the cause and effect in the question
3. Plug the cause and the effect into the format: "What is the effect of \_\_\_\_\_ on \_\_\_\_\_?"
4. Correct testable question.... "What is the effect of a shoe brand on running speed?"

Non-Testable: Does carbon dioxide in the atmosphere cause the atmosphere to warm?

Cause: carbon dioxide

Effect: atmosphere temperature

Testable Question: "What is the effect of carbon dioxide on atmosphere temperature?"