Ask a Testable Science Question Worksheet - Video 2

Understanding How to Develop a Testable Science Question

When scientists investigate the world, they start with ideas and observations. To conduct a successful investigation, they must develop a testable question—a question that can be answered by doing an experiment and collecting data. For example, if you see a plant growing in an unusual place, you might ask, “How much dirt does a plant need to grow?” Or, if you’re interested in engineering, you might ask, “How does the diameter of a mousetrap car’s wheels affect the distance it can travel?” A good testable question is specific, measurable, and focuses on one variable at a time. Scientists then design experiments to test these questions, changing one variable and measuring the results.

Fill in the Blank: Fill in the blank with the correct words.

1. To create a good science investigation, you must start with a _____ question.
2. Scientists usually change only _____ variable(s) at a time in an experiment.
3. When testing plant growth, you might measure the plant’s _____ or number of flowers.
4. In the mousetrap car example, the _____ of the wheels could be changed to see its effect on distance.
5. A testable question should always be _____ and measurable.

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. What is the most important part of a testable science question?
   a) It is long and complicated
   b) It can be answered by an experiment
   c) It uses many variables at once
   d) It is about something you can’t measure

2. If you want to find out how different types of fertilizer affect plant growth, what should you keep the same?
   a) The type of plant
   b) The amount of sunlight
   c) The amount of water
   d) All of the above

3. Which of the following is a good example of a testable question?
   a) Why are plants green?
   b) How does the amount of sunlight affect plant height?
   c) What do plants think about?
   d) Who likes plants the most?

4. In a mousetrap car experiment, what might you measure as the result?
   a) The color of the car
   b) The distance the car travels
   c) The name of the car
   d) The number of wheels

5. Why is it important to have more than one data point in your experiment?
   a) To make your results more reliable
   b) To make your experiment shorter
   c) To confuse people
   d) To avoid measuring anything

Open-Ended Questions: Answer the following questions in complete sentences.

1. Write your own testable question about plants or mousetrap cars. Make sure you include what you will change and what you will measure.

2. Explain why it is important to only change one variable at a time in an experiment.

3. Describe what kind of data you would collect if you were testing how different amounts of dirt affect plant growth.

ANSWER KEY

Teachers: If this worksheet includes math, please review AI-generated answers for accuracy.

Fill in the Blank Answers:

1. testable
2. one
3. height
4. diameter
5. specific

Multiple Choice Answers:

1. b) It can be answered by an experiment
2. d) All of the above
3. b) How does the amount of sunlight affect plant height?
4. b) The distance the car travels
5. a) To make your results more reliable

Open-Ended Example Responses:

1. Example: “How does the amount of water given to a plant affect its height after two weeks?”
2. Example: “It is important to only change one variable at a time so you can be sure that any changes in the results are because of that one variable.”
3. Example: “I would measure the height of the plants every few days and record how tall each plant grows in different amounts of dirt.”