

**Science Practices Quiz 1**  
**Study Guide**

Name \_\_\_\_\_  
Date \_\_\_\_\_ Hour \_\_\_\_\_

You should study notes and handouts on:

1. *Scientific Questions & Models*
2. *Scientific Method / Investigation Steps*
3. *Observation/Inference*
4. *Control/Variable/Test Group/Control Group*
5. *Graph Analysis*

Read about this experiment:

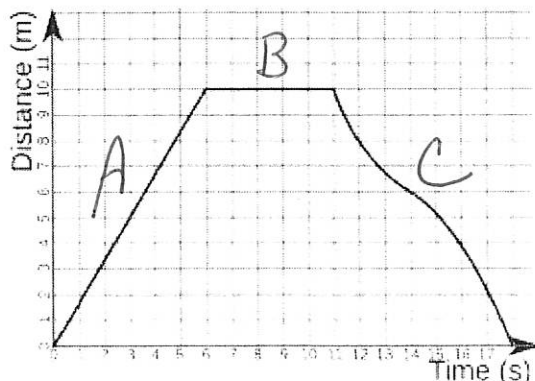
(A.) Mr. Z wanted to choose the best clumping kitty litter for his cats. He bought three brands of kitty litter (Brand X, Brand Y and Brand Z). (B) He guessed that Brand Z would be the best clumping litter. (C) He placed 6 cups of litter in each of 3 containers. He poured 1 cup of water into each container. He waited 3 minutes, and then used a scoop to scoop the clumps out of each container. (D) He recorded his observations of how hard the clumps were and how easy it was to scoop them out of the container. (E) He made a bar graph showing the results. (F) Based on his results, Mr. Z decided that Brand Y was the best clumping litter; his hypothesis was wrong.

1. Identify the letter that gives the:

- \_\_\_\_\_ hypothesis
- \_\_\_\_\_ materials and procedure
- \_\_\_\_\_ conclusion
- \_\_\_\_\_ question/problem
- \_\_\_\_\_ observations
- \_\_\_\_\_ analysis

2. Identify in which part of the graph below:

- \_\_\_\_\_ speed is constant (not changing)
- \_\_\_\_\_ speed is zero (not moving)
- \_\_\_\_\_ speed is changing (accelerating or decelerating)



3. Observation: Ms. Tonnos is using crutches.

Inference: \_\_\_\_\_

Inference: \_\_\_\_\_

4. Which of the following is a good scientific question? How do you know?

a. Does baking soda fizz more rapidly than baking powder when mixed with vinegar?

b. Does baking soda or baking powder make a better volcano?

4. Look at the picture. Write 2 observations and 1 inference.

Observation: \_\_\_\_\_

\_\_\_\_\_

Observation: \_\_\_\_\_

\_\_\_\_\_

Inference: \_\_\_\_\_

\_\_\_\_\_



5. Read the scenario below.

Meowzers Cat Company is testing a new formula for Cat Relief Hairball Remedy. They chose 100 long-haired cats. Group A (50 cats) were given the Hairball Remedy. Group B (50 cats) were given a placebo. Cat owners were instructed to record the number of hairballs produced by their cats for 2 weeks. After 2 weeks of treatment, Group A owners reported an average of 6 hairballs per cat, while Group B owners reported an average of 2 hairballs per cat.

Identify the:

a. independent variable: \_\_\_\_\_

b. dependent variable: \_\_\_\_\_

(over)

c. control group: \_\_\_\_\_

d. controlled variables:

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6. What limitations would a model of a plant cell have?

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