

# Scientific Method Practice QUIZ


Name: *Key*  
 Date:  
 Block:

*This practice test is designed to help you determine what concepts you DO know and more importantly what concepts you DO NOT know!*


**Go through the practice test THREE times:**

(1) *On your own*      (2) *With your notes*      (3) *With another student*


1



2



3



**Each time, if you cannot answer a question, draw a circle around it to identify that you should review this concept when preparing for the test.**

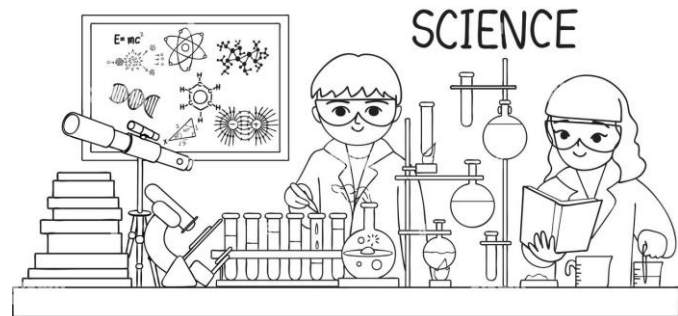
Determine whether the following are qualitative or quantitative observations by circling the appropriate answer:

1. The temperature outside is 5°C.      QUALitative or QUANTitative
2. The sun was shining.      QUALitative or QUANTitative
3. The dog wagged its tail.      QUALitative or QUANTitative
4. The student scored 49/50.      QUALitative or QUANTitative
5. The container warmed up to 60°C when we added the chemical.      QUALitative or QUANTitative

**Short Answer:**

1. Make two qualitative and two quantitative observations for the following picture:

- a. Qualitative Observations:
  - i. *The chemical is bubbling in the glassware*
  - ii. *The girl's hair is wavy*
- b. Quantitative Observations:
  - i. *There are 9 test tubes*
  - ii. *There are 10 books*



2. What are the steps of the scientific method?

*Purpose → Research → Hypothesis → Experiment → Analysis → Conclusion*

3. In which step of the scientific method would you indicate that the hypothesis is supported or not supported?

Conclusion

4. Which of the following is an appropriate hypothesis?
- A. The athlete will throw the ball higher.
  - B. If the experiment is successful, then the results will be good.
  - C. If the amount of sunlight increases, then the plant will grow taller.
  - D. To make the plant grow taller, we must add more water.
5. To test the effect of sleep deprivation on student test scores, a group of students with similar grades is used. Half of the group sleeps for a full 8 hours the night before the test and the other half of the group sleeps only 4 hours. Identify the independent, dependent, and control variable in the following experiment.

- Purpose: *to test the effect of sleep deprivation on test scores*
- Independent Variable: *amount of sleep*
- Dependent Variable: *test scores*
- Control Variable: *same test*

6. Two brands of paper towels are compared to see which one holds the most liquid. 50 mL of water is placed into two beakers. One paper towel from the brand, Cleans-a-Lot, is placed into Beaker 1 while one paper towel from another brand, Good-at-Cleaning, is placed into Beaker 2. When the paper towels are removed from the two beakers, it was discovered that Beaker 1 contained 15 mL of water while Beaker 2 contained 5 mL of water. Identify the independent, dependent, and control variable in the following experiment.

- Purpose: *to see which paper towel is able to hold the most water*
- Independent Variable: *brand of paper towel*
- Dependent Variable: *how much water is absorbed*
- Control Variable: *type of liquid ; amount of water to start.*