

Name: _____ Class: _____ Date: _____

Quiz 2: Scientific Method

Section A: Multiple Choice Questions

Circle or shade the letter of the most appropriate response.

1. What is the scientific method?
 - A. A set of beliefs based on tradition
 - B. A step-by-step process used to solve problems and answer questions.
 - C. A list of random observations
 - D. A method used only by professional scientists.
2. Which stage of the Scientific Method involves forming a hypothesis?
 - A. Stage 1
 - B. Stage 2
 - C. Stage 3
 - D. Stage 5
3. Scientists do all of the following in Stage 1 of the Scientific Method except _____.
 - A. Make Observations
 - B. Ask Questions
 - C. Collect Information
 - D. Analyse data
4. A hypothesis must be:
 - A. Random guess
 - B. clearly stated, testable and based on observation
 - C. A fact
 - D. Proven before experiment
5. Which of the following variables is changed on purpose by the experimenter?
 - A. Dependent Variable
 - B. Independent Variable
 - C. Controlled Variable
 - D. Random Variable
6. Which group is used for comparison?
 - A. Experimental Group
 - B. Independent Group
 - C. Control Group
 - D. None of the above

B. Section B: True or False

Instructions: Circle True or False to indicate if the statement is True or False.

1. The dependent variable changes because of what the scientist does. **True / False**
2. Controlled variables stay the same because they will affect the outcome of the experiment if they are not kept the same. **True / False**
3. A Scientist can test more than one variable at a time. **True / False**
4. A hypothesis must have a cause(independent variable) and an effect (dependent variable). **True / False**
5. Having a large amount of test subjects and repeating an experiment are two ways in which scientists can ensure validity and reliability of results. **True / False**

Section C: Matching

Instructions: Place the letter of the correct response from column B on the line to match it with the correct answer from column A.

Column A

1. Independent Variable _____
2. Dependent Variable _____
3. Controlled Variables _____
4. Hypothesis _____
5. Control Group _____

Column B

- A. An educated guess that can be tested
- B. No change; comparison
- C. Variable that is changed by scientist
- D. The variable that is Measured
- E. These variables are kept the same

Section D: Fill in the Blanks Instructions: Fill in the blanks with the most appropriate word from the word bank

Word Bank: Communicate Results, Analyse, Define the Problem, measure, record data, cause, effect, make inferences, identify variables, educated guess, collect information, ask questions, hypothesis, make observations, Scientific Method

1. The process that Scientists use to gather evidence/ information that leads to understanding a particular topic is called the _____.
2. In stage one of the scientific method, Scientists _____.
3. In defining the problem, scientists _____, _____ and _____.
4. The information collected in stage one of the scientific method, helps the researcher to form a _____.
5. A hypothesis is an _____ that can be tested by an experiment, it must have a _____ and an _____.
6. In stage three of the Scientific method, scientists plan an experiment. In planning an experiment they _____, identify control and experimental groups, list materials, plan the steps of procedures, identify possible sources of errors and identify how they will ensure validity and reliability of results.
7. In stage 4 of the scientific method, Scientists carry out their experiments. In carrying out experiments, they observe, _____ and _____.
8. In stage 5 of the scientific method, scientists _____ their data. This means that they look for trends and patterns and identify cause and effect relationships.
9. In stage 6 of the Scientific method, Scientists _____ or draw conclusions. They state whether the data supports their hypothesis.
10. In the last stage of the Scientific Method, scientists _____. This is important so that other scientists can know what has been done already.

Answer Key

1. B
2. B
3. B
4. B
5. B
6. D
7. True
8. True
9. False
10. True
11. C
12. D
13. F
14. A
15. E
16. B
17. Scientific method
18. Testable; based on observation
19. Inference
20. Repeat
21. Measuring
22. Plan; design