**Scientific Method**

1. Name the steps in the scientific method

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. Scientists use their \_\_\_\_\_\_\_\_\_\_\_ to make observations.
9. Explain a scientist’s first step in the scientific method.
10. Give an example of an observation that a scientist might make.
11. What is a hypothesis?
12. A hypothesis must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and it must \_\_\_\_\_\_\_\_\_\_\_\_\_\_ an outcome.
13. Some hypotheses are written as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ statements.
14. Write a hypothesis for the observation you wrote in question 3.
15. What is an experiment?
16. In a scientific experiment, what is a variable?
17. What is the difference between a control variable and an experimental variable?
18. How many experimental variables should there be in a good experiment?
19. An experimenter changes \_\_\_\_\_\_\_\_ factor and then \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_what happens.
20. Other factors in an experiment must be kept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ so they won’t affect the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
21. What is the purpose of having a control in an experiment?
22. What is an independent variable?
23. What is a dependent variable?
24. In the experiment to find the fastest route to school, what serves as:
25. the independent variable?
26. the dependent variable?
27. the control variable?
28. Name the two groups needed to have a valid experiment.
    1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
29. When there is more than one experimental group, what must be done to maintain a valid experiment?
30. In order for an experiment to be valid, there must be several \_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in each group.
31. What is data?
32. What are the two types of data, and what is the difference between them?
33. To be useful, collected data must be \_\_\_\_\_\_\_\_\_\_.
34. Name 3 ways of organizing data.
    * + - 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
          2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
          3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
35. What is the conclusion of an experiment?
36. What must be done to verify the results of an experiment?