Scientific Processes Study Guide

1. To find out why bread left on the kitchen counter eventually molds is an example of _____.
2. Using one or more of your senses to gather information is called _____.
3. Give one quantitative characteristic about you and one qualitative characteristic._____

   _____
4. Facts, figures, and other evidence gathered through observations are called _____.
5. When scientists put things into categories or group together items that are alike, they are _____.
6. When scientists create a representation of a complex process, they are making _____.
7. Scientists have developed models for the structure of atoms because_____.
8. In science, a hypothesis must be _____.
9. Explaining or interpreting things you observe based on reasoning from what you already know is _____.
10. Making a statement or claim about what will happen in the future based on past experience is _____.
11. If you purposely change the temperature to test a hypothesis, the temperature is called the _____.
12. The factor that may change in response to the independent variable is called the _____.
13. A summary of what you have learned from a scientific experiment is called a _____.
14. Which stage of the scientific process enables a scientist to check the work of other scientists?_____
15. If you draw conclusions based on your beliefs rather than facts, you are using _____ reasoning.
16. Making decisions based on available evidence involves using which kind of thinking?_____
17. The metric system of measurement is based on the number _____.
18. The basic unit of length in the metric system is the _____.
19. In SI, the kilogram is the basic unit of _____.
20. How many meters are there in a kilometer?_____
21. What would be the appropriate unit of measure for the distance from Muskogee to Tulsa?_____
22. What would be the appropriate unit of measure for the length of an ant?_____
23. The amount of space an object takes up is its _____.
24. If a shoe box measures 5 cm high, 6 cm wide, and 15 cm long, what is its volume?_____
25. How could you measure the volume of a rock?_____

26. Mass and weight are different because _____.

27. What tool would you use to measure the weight of an orange?_____

28. What is measured using a balance?_____

29. What is measured using a graduated cylinder?_____

30. To calculate the density of an object, you would _____.

31. A metal washer has a mass of 0.27 g and a volume of 0.2 cm^3. What is its density?_____

32. If scientists cannot obtain exact numbers, they should rely on an _____.

33. The closeness of a measurement to its true value is its _____.

34. If you add a mass of 2.4 g to a mass of 7.265 g, the sum with the correct number of significant digits is _____.

35. To determine how close to the true value an experimental value is, you would use _____.

36. Which axis on a graph is the independent variable?_____

37. Which axis on a graph is the dependent variable?_____

38. What is the first thing you should do if an accident occurs in your classroom?_____

39. You want to test to see if Crest Whitening toothpaste whitens your teeth better than regular Crest toothpaste. Twenty people are separated into two groups, each with equal amounts of males and females. Group A receives the Crest Whitening toothpaste while group B receives the regular Crest toothpaste. The people in the groups use the toothpaste daily for one month. The scientist determines if the toothpaste works by recording how many shades whiter the subjects' teeth are.
    A. What is the independent variable?_____

    B. What is the dependent variable?_____

    C. List a controlled variable._____

40. Identify the following lab tools.