Name _____ **Date** _____ **period** ____
Physical Science   Unit 1 Introduction   Worksheet

Multiple Choice *Identify the choice that best completes the statement or answers the question.*

1. The prefix *kilo-* means ____.
    a. 1,000   b. 100   c. 0.01   d. 0.001

2. The prefix *milli-* means ____.
    a. 1,000   b. 100   c. 0.01   d. 0.001

3. The correct symbol for the SI unit of temperature is ____.
    a. ºC   b. ºF   c. K   d. s

4. The SI unit that is used to measure time is the ____.
    a. kelvin   b. kilogram   c. second   d. meter

5. The variable plotted on the horizontal or *x*-axis is called the ____.
    a. dependent variable   c. variable with the largest range
    b. independent variable   d. variable with the smallest range

6. How many meters are there in 1,865 cm?
    a. 0.1865   b. 1.865   c. 18.65   d. 186.5

9. A beaker contains 0.32 L of water. What is the volume of this water in milliliters?
    a. 320 mL   b. 3.2 mL   c. 32 mL   d. 0.32 mL

11. The process of gathering information through the senses is called ____.
    a. analysis   b. observation   c. hypothesis   d. inference

13. A rule or principle that describes what happens in nature is a ____.
    a. hypothesis   b. problem   c. scientific law   d. theory

14. An explanation of an event that is based on repeated observations and experiments is a ____.
    a. hypothesis   b. scientific law   c. problem   d. theory

15. In an experiment to determine whether the popping of popcorn is affected by the temperature at which it is stored, counting the popped kernels is an example of a(n) ____.
    a. conclusion   b. control   c. hypothesis   d. observation

16. A standard for comparison that helps to ensure that the experimental result is caused by the condition being tested is the ____.
    a. constant   b. control   c. dependent variable   d. hypothesis

17. A factor in an experiment that changes from the manipulation of the independent variable is the ____.
    a. constant   b. control   c. dependent variable   d. hypothesis

18. A factor that does NOT change in an experiment is the ____.
    a. constant   b. control   c. dependent variable   d. hypothesis

20. A factor that is manipulated in an experiment to change the dependent variable is the ____.
    a. constant   c. control
    b. dependent variable   d. independent variable

22. What is a scientific law?
    a. It is the same as a hypothesis.   c. It is an explanation of a scientific observation.
    b. It is a description of a natural event.   d. It is the conclusion of a scientific experiment.

23. Scientific theories can be changed or replaced when
    a. new technology is invented.   c. scientists decide to work on different problems.
    b. new discoveries are made.   d. scientists make models of events or objects.

24. A series of logical steps that is followed in order to solve a problem is called the
    a. experimental process.   c. scientific method.
    b. scientific theory.   d. model method.

25. The first step in the scientific method is usually
    a. making an observation.   c. collecting data.

b. forming a hypothesis.   d. testing a hypothesis.

26. What does it mean to say that "no experiment is a failure"?
    a. All experiments are observations of real events.   c. All experiments give scientists work to do.
    b. All experiments yield the desired results.   d. All experiments involve manipulating variables.

27. Which question cannot be answered by an experiment?
    a. Does penicillin kill Salmonella bacteria?   c. Did a comet impact kill the dinosaurs?
    b. Is rabies caused by a virus?   d. Can radiation cause cancer?

28. Maria is 123 centimeters tall. Her height in meters is
    a. 0123 m.   b. 0.123 m.   c. 1.23 m.   d. 12.3 m.

29. A loaf of bread weighs 1362 g. The weight in kilograms is
    a. 1.362 kg.   b. 1362 kg.   c. 01362 kg.   d. 001362 kg.

Temperature Measured Over Time

30. At which time of day was the temperature approximately 4ºC?
    a. 9:00 A.M.   b. 10:00 A.M.   c. 11:00 A.M.   d. 12:00 P.M.

31. At which two times of day was the temperature the same?
    a. 7:00 A.M. and 7:00 P.M.   c. 10:00 A.M. and 7:00 P.M.
    b. 7:00 A.M. and 10:00 P.M.   d. 10:00 A.M. and 10:00 P.M.

Number of Pennies by Year

32. The sample contained the same number of pennies for which two years?
    a. 1988 and 1992   b. 1988 and 1991   c. 1994 and 1997   d. 1994 and 1998

33. For which year was the smallest number of pennies found?
   a. 1988   b. 1989   c. 1990   d. 1991
34. The decimal equivalent of 10^{-2} is
   a. 100.   b. 10.   c. 0.1.   d. 0.01.
35. What is 78,900,000,000 expressed in scientific notation?
   a. 789×10^9 b. 7.89×10^9 c. 7.89×10^{10} d. 7.89×10^{11}
36. The speed of light is approximately 3×10^8 m/s. How would this be written in conventional notation?
   a. 300,000 m/s   b. 3,000,000 m/s   c. 30,000,000 m/s   d. 300,000,000 m/s

Matching   *Read the paragraph and then match each item with the correct statement below.*

   An experiment was designed to investigate the effect of caffeine on the heartbeat of water fleas. Two populations of water fleas were cultured. Both populations had water with the same mineral content, were supplied with identical amounts of bacteria as food, received the same amount of light, and had their temperature maintained at 20ºC. Every two hours, water fleas from both populations were selected and their heartbeats were monitored. The fleas of population one had caffeine administered five minutes before their heartbeat was checked. The fleas of population two were given nothing.
   a. independent variable   c. constant
   b. dependent variable   d. control

37. What part of the experiment was the food?
38. What part of the experiment was the heartbeat?
39. What part of the experiment was the water temperature?
40. What part of the experiment was population two?
41. What part of the experiment was the caffeine?

Physical ScienceUnit 1 Introduction   Worksheet
Answer Section

MULTIPLE CHOICE

1. A
2. D
3. C
4. C
5. B
6. C
7. A
8. C
9. A
10. A
11. B
12. D
13. C
14. D
15. D
16. B
17. C
18. A
19. B
20. D
21. C
22. B
23. B
24. C
25. A
26. A
27. C
28. C
29. A
30. B
31. D
32. C
33. D
34. D
35. C
36. D

MATCHING

37. C
38. B
39. C
40. D
41. A

COMPLETION

42. explanation
43. law
44. quantitative
45. variable
46. 3.75
47. 5.675
48. nitrogen
49. 20
50. change continuously
51. bar graph
52. 10^{-3}
53. 46.5×10^6
54. 9.234×10^{-4}
55. 5.678×10^{10}