1. Which of these is a conclusion rather than an observation?
   a. This bear lives in a cold climate.
   b. This bear has big teeth.
   c. This bear has black claws.
   d. This bear has small ears and eyes.

2. Which of these is needed to measure the mass of a rock?
   a. An anemometer
   b. A barometer
   c. A balance
   d. A metric ruler

3. The length of an adult human footprint would be closest to 20
   a. millimeters
   b. centimeters
   c. meters
   d. decameters

4. The capacity of an automobile gasoline tank would most likely be measured in -
   a. degrees Celsius (°C)
   b. grams (g)
   c. liters (l)
   d. meters (m)

5. Which of these units would be best to use to measure the amount of water in a test tube?
   a. Milliliters
   b. Meters
   c. Kilograms
   d. Seconds

6. The chart shows the number of flowers seen in a field. Which of these best shows these data?
7. Which of these should be used to accurately measure 250 mL of water?

8. Jack grew some very small organisms in a jar of pond water. Each day, he counted the number of organisms he saw on a slide. Then he estimated how many organisms were in the jar. On what day were almost all of the organisms dead?
   a. 5  
   b. 15  
   c. 20  
   d. 25

9. Using the picture and classification key, what is this animal?
   a. Swordfish  
   b. Hammerhead shark  
   c. Leopard shark  
   d. Nurse shark

10. Using the picture and classification key, what is this animal?
    a. Swordfish  
    b. Hammerhead shark  
    c. Leopard shark  
    d. Nurse shark

11. The capacity of an automobile gasoline tank would most likely be measured in -
    a. degrees Celsius (°C)  
    b. grams (g)  
    c. liters (l)  
    d. meters (m)
12. About how tall is this mushroom?
   a. 1 kilometer
   b. 4 centimeters
   c. 3 meters
   d. 10 millimeters

13. Students want to find out if an empty can rolls down a ramp faster than a can filled with sand. Which of these would be the fairest way to find out?

14. What is the difference between the water level in the cylinder before and after the rock was added?
   a. 3 mL
   b. 11 mL
   c. 14 mL
   d. 25 mL

15. The graph shows what happened when a candle was burned in different jars. The results of this experiment show that the bigger the jar, the
   a. faster the candle melted
   b. longer the candle burned
   c. brighter the candle's flame
   d. higher the candle's flame

16. How big would a jar have to be to keep the candle burning for 5 minutes?
   a. 1 liter
   b. 5 liters
   c. 10 liters
   d. 15 liters
17. The picture shows the development of a delta over a two-year period. According to this information, about how far did the delta reach into the ocean after 1997?
   a. 0.1 km
   b. 0.5 km
   c. 1 km
   d. 1.5 km

18. The picture shows a magnified view of a tick on a penny. About how long is the tick.
   a. millimeter
   b. 2 kilometers
   c. 4 meters
   d. 10 centimeters

19. Which of these is needed to measure the mass of a rock?
   a. An anemometer
   b. A barometer
   c. A balance
   d. A metric ruler

20. Amanda studied the mass gain in chickens for her science project. Which of these is the mass of this chicken?
   a. 2 kg
   b. 3 kg
   c. 5 kg
   d. 7 kg

21. Students conducted an experiment in which they rubbed their palms together to warm their hands, then measured the temperature of their hands. The experiment was conducted 4 times. According to the data in the table, which of these trials is most unusual?
   a. A
   b. B
   c. C
   d. D

<table>
<thead>
<tr>
<th>Trial</th>
<th>Temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>41</td>
</tr>
<tr>
<td>B</td>
<td>40</td>
</tr>
<tr>
<td>C</td>
<td>31</td>
</tr>
<tr>
<td>D</td>
<td>42</td>
</tr>
</tbody>
</table>
22. A student uses the equipment shown above to study which liquid is the thickest. What information is the most appropriate to record?
   a. The height of each of the graduated cylinders
   b. The time it takes for each marble to hit bottom
   c. The size and mass of each of the marbles
   d. The volume of each of the liquids in the cylinders

23. Which of these units would be best to use to measure the amount of water in a test tube?
   a. Milliliters
   b. Meters
   c. Kilograms
   d. Seconds

24. Students must conduct an experiment in which they find out how long a rubber ball bounces before it comes to a stop. Which unit would be best for recording this information?
   a. Gram
   b. Degrees Celsius
   c. Meter
   d. Second

25. According to the graph, which combination of food would probably bring the most birds to the feeder?
   a. Sunflower seeds and cracked corn
   b. Cracked corn and millet
   c. Millet and safflower seeds
   d. Sunflower and safflower seeds

26. Sandy grows roses along her walkway. The roses close to the street had more blooms than the roses close to the house. Which statement is a hypothesis Sandy could make about her roses?
   a. There were many blooms on the roses near the house and fewer blooms on the roses closest to the street.
   b. The roses closest to the street had more blooms because they received more sunlight.
   c. The roses near the house were taller but had fewer blooms.
   d. The roses close to the house had fewer blooms and leaves.
Three Basic Types of Rocks

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Igneous</td>
<td>Formed from cooled and hardened magma deep inside the Earth or from lava at the surface</td>
</tr>
<tr>
<td>Sedimentary</td>
<td>Formed when layers of sediments or rock pieces are cemented together; may contain fossils</td>
</tr>
<tr>
<td>Metamorphic</td>
<td>Formed when rocks are changed by heat, pressure or chemical action; may be banded</td>
</tr>
</tbody>
</table>

27. According to the information in the chart, which of the following rocks is a sedimentary rock?

28. Which of these is the fairest way to find out if sand or silt will settle faster when mixed with water?

29. Todd observes that his strawberry plant has grown little green strawberries. Which of these is a prediction Todd might make about his strawberry plant?
   a. The green berries will ripen into red berries.
   b. The strawberry plant is growing under an oak tree.
   c. The strawberry plant doesn't have enough water.
   d. The green berries are a new type of strawberry.

30. What is the length of the tadpole?
   a. 2.8 cm
   b. 3.1 cm
   c. .5 cm
31. Students in Mrs. Smith's class are trying to find the average mass of fifth-grade students' backpacks. The information is displayed on the chart above. The chart shows that fifth-grade students most frequently have backpacks with a mass of—

a. 2-3 kilograms
b. 4-5 kilograms
c. 6-7 kilograms
d. 8-9 kilograms

32. Based on the information in the chart, what would be the height of the plant on March 23?

a. 10 cm
b. 12 cm
c. 4 cm

d. 16 cm

33. Which of the following instruments is used to measure mass?

A

34. Dennis conducted an experiment to determine which of his classmates could throw a ball the farthest. He recorded his results in the above
table. Which student's measurement is an unusual result?

a. 1
b. 2
c. 3
d. 4

cylinder, what will be the total volume of the liquid?

a. 30 milliliters
b. 27 milliliters
c. 37 milliliters
d. 35 milliliters

35. From the chart shown above, you can predict that for the year 2000, Brazil's population will –

a. show a heavy drop
b. be a flat line even with 1995
c. have topped 250 million
d. continue its steady rise

36. Two students wanted to find out which of their toy race cars would go the farthest. They let each car roll down a ramp and then measured how far the cars rolled. Which of these should be held constant if they want a fair test of their cars?

a. The height of the ramp
b. The weight of the ramp
c. The length of the cars
d. The shape of the cars

37. If 5 milliliters of vinegar are added to the water in the
39. The chart shows the time it took for bean seeds to germinate at different temperatures. If the trend continues, at a temperature of 5°C the seeds probably will germinate in -

a. 5 days  
b. 8 days  
c. 13 days  
d. 16 days

40. Which of these can be observed in this picture?

a. The moon is circular.  
b. The moon spins around on its axis.  
c. The moon is solid rock.  
d. The moon has little air.

41. According to the identification key, what type of creature is creature Y?

a. Woznat  
b. Zapoom  
c. Nanner  
d. Ock

42. Which item below would have a mass closest to that of a thumbtack?

a. A  
b. B  
c. C  
d. D
43. This surveyor is measuring the distance of a road. The most appropriate units to measure this distance are -
   a. millimeters  
   b. centimeters  
   c. decimeters  
   d. meters

44. Which tools would be needed to measure the size and the mass of a block of wood?
   a. A watch with a second hand and a ruler  
   b. A graduated cylinder and a thermometer  
   c. A ruler and a balance  
   d. A thermometer and a meter stick

45. The picture shows a thermometer in a room. What is the temperature of this room?
   a. 19°C  
   b. 20°C  
   c. 21°C  
   d. 22°C

46. The larger the mass of a planet, the greater the pull of gravity on that planet's surface. According to the information in the chart, which of these planets has a mass closest to the Earth's mass?
   a. Mercury  
   b. Venus  
   c. Mars  
   d. Jupiter
47. Which is the **fairest** way to find out if salt water boils faster than fresh water?

![Diagram A](image1.png)

**A**

![Diagram B](image2.png)

**B**

![Diagram C](image3.png)

**C**

![Diagram D](image4.png)

**D**

48. During a study of the human body, students are asked to observe the back of their hands and record their observations. What units would be most appropriate for measuring the width of their hands?

a. Grams  

b. Centimeters  

c. Liters  

d. Meters

49. A science class went on a field trip and made a graph of the different kinds of insects that they saw. Which group of insects was seen the most?

![Pie Chart](image5.png)

**Relative Numbers of Insects Seen**

- Hymenoptera: Bees, Ants, Wasps
- Lepidoptera: Butterflies, Moths
- Diptera: Flies, Mosquitoes
- Hemiptera: The True Bugs
- Homoptera: Aphids, Cicadas, Leafhoppers
- Coleoptera: Beetles
- Other

A. Flies  
B. Butterflies/Moths  
C. Beetles  
D. Wasps
50. The pictures above show how one student tried to see how the heat from a light bulb affected the rate of evaporation of a liquid. What is the only variable being changed in this experiment?
   a. The size of the container
   b. The position of the thermometer
   c. The position of the light bulb
   d. The amount of water

51. The picture shows some insects Dana saw while she was out walking. Which graph best represents what Dana saw?
52. Based on the picture above, which of these is a conclusion rather than an observation?

a. This animal has hair.
b. This animal is standing.
c. This animal has four legs.
d. This animal is a mammal.

Answer Key
1. A
2. C
3. B
4. C
5. A
6. C
7. C
8. D
9. C
10. D
11. C
12. B
13. D
14. A
15. B
16. B
17. C
18. A
19. C
20. B
21. C
22. B
23. A
24. D
25. D
26. B
27. A
28. B
29. A
30. B
31. A
32. B
33. B
34. B
35. D
36. A
37. C
38. B
39. C
40. A
41. B
42. B
43. D
44. C
45. D
46. B
47. A
48. B
49. C
50. C
51. C
52. D