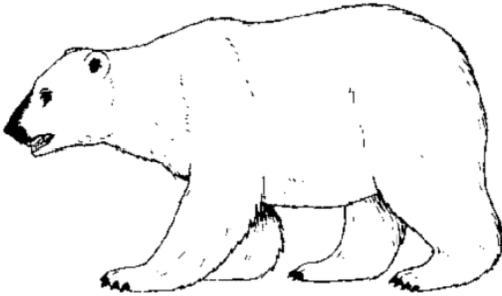


Name

Date

5th Grade Released Test
Questions on Scientific
Process and Measurement
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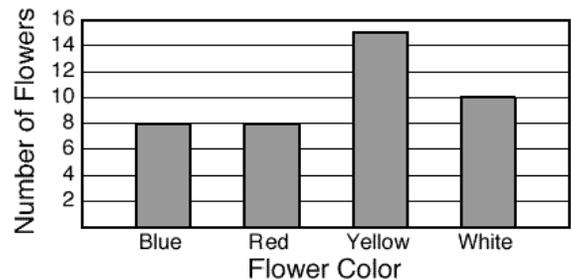
- Which of these is a conclusion rather than an observation?
 - This bear lives in a cold climate.
 - This bear has big teeth.
 - This bear has black claws.
 - This bear has small ears and eyes.
- Which of these is needed to measure the mass of a rock?
 - An anemometer
 - A barometer
 - A balance
 - A metric ruler
- The length of an adult human footprint would be closest to 20
 - millimeters
 - centimeters
 - meters
 - decameters
- The capacity of an automobile gasoline tank would most likely be measured in -
 - degrees Celsius (°C)
 - grams (g)
 - liters (l)
 - meters (m)
- Which of these units would be best to use to measure the amount of water in a test tube?
 - Milliliters
 - Meters
 - Kilograms
 - Seconds

Number of Flowers in a Field

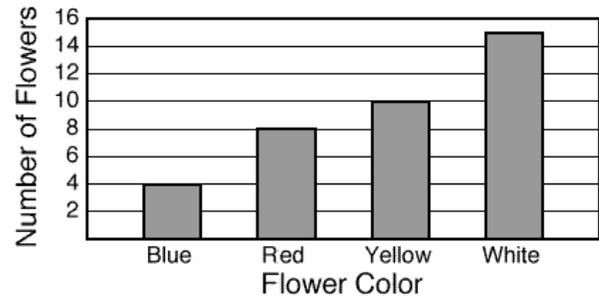
Flower Color	Number of Flowers
Blue	4
Red	8
Yellow	15
White	10

6. The chart shows the number of flowers seen in a field. Which of these best shows these data?

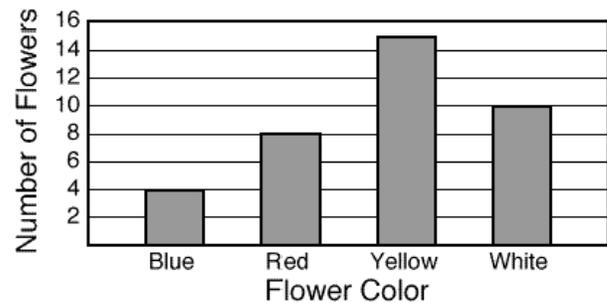
A



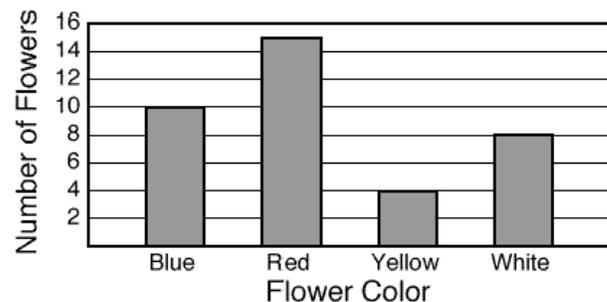
B



C

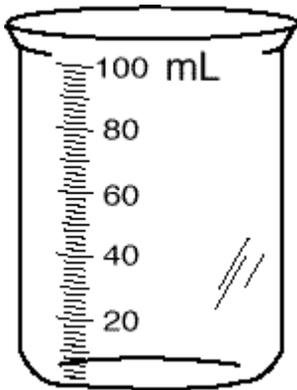


D

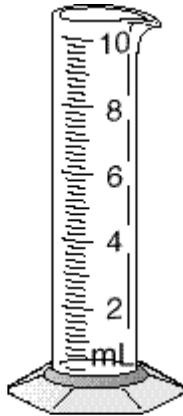


7. Which of these should be used to accurately measure 250 mL of water?

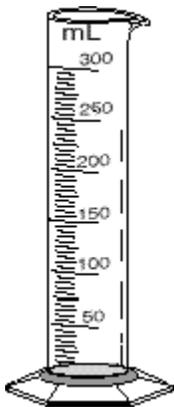
A



B



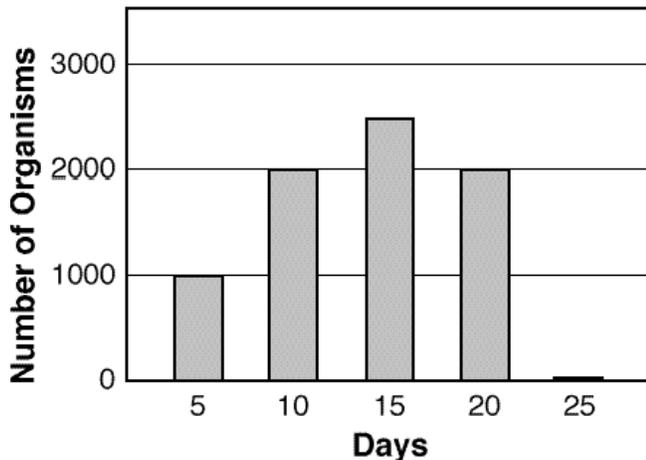
C



D



Organism Population



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

Classification Key

- | | | |
|----|---------------------------------|------------------|
| 1a | Body kite-like in shape | Ray |
| 1b | Body not kite-like in shape | Go to 2 |
| 2a | Nose saw-like in shape | Swordfish |
| 2b | Nose not saw-like in shape | Go to 3 |
| 3a | Head extended on both sides | Hammerhead shark |
| 3b | Head not extended on both sides | Go to 4 |
| 4a | Body has spots | Leopard shark |
| 4b | Body does not have spots | Nurse shark |



9. Using the picture and classification key, what is this animal?

- a. Swordfish
- b. Hammerhead shark
- c. Leopard shark
- d. Nurse shark

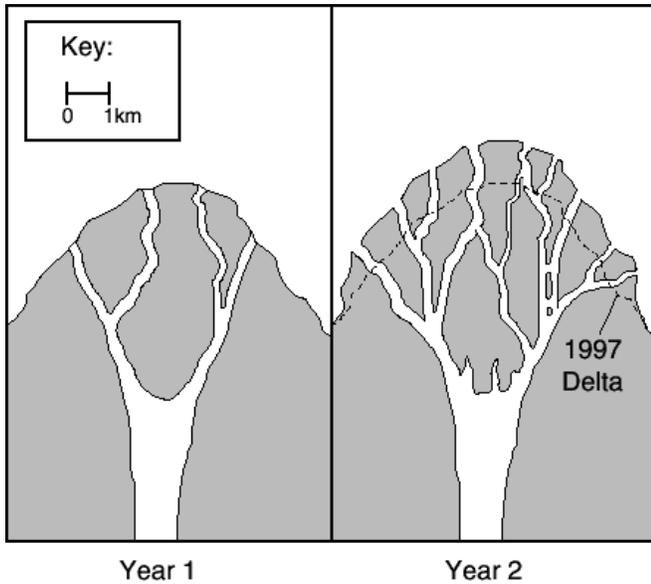


10. Using the picture and classification key, what is this animal?

- 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 -

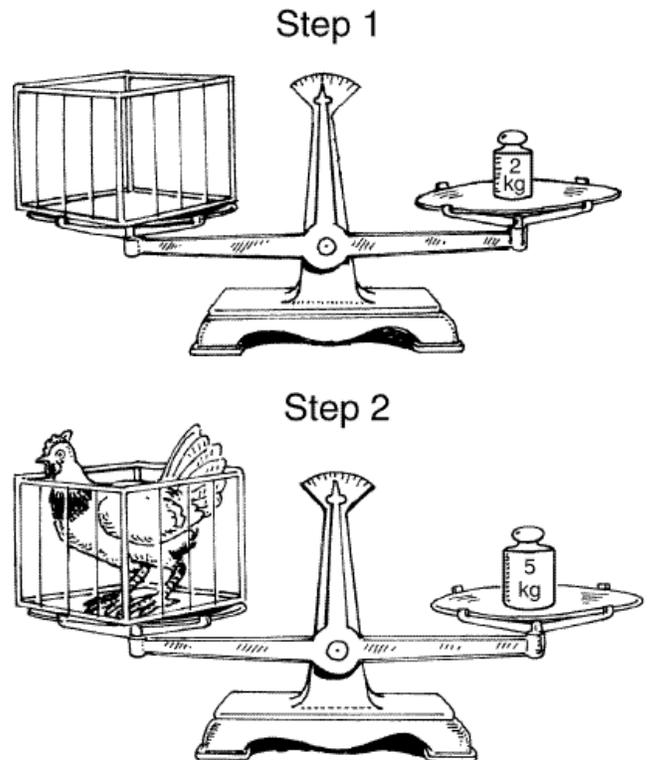
- a. degrees Celsius ($^{\circ}\text{C}$)
- b. grams (g)
- c. liters (l)
- d. meters (m)



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?
- 0.1 km
 - 0.5 km
 - 1 km
 - 1.5 km



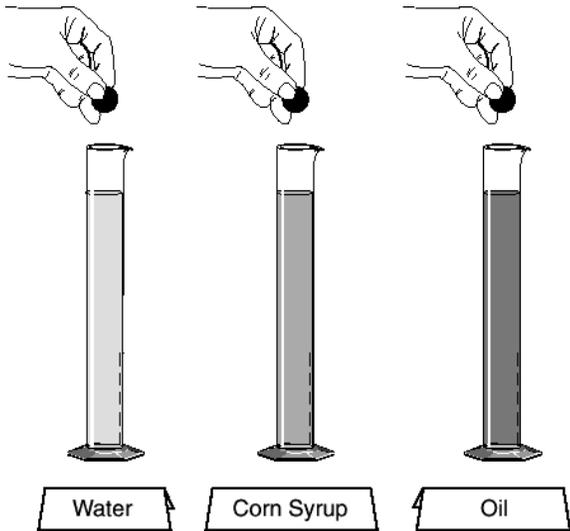
18. The picture shows a magnified view of a tick on a penny. About how long is the tick.
- millimeter
 - 2 kilometers
 - 4 meters
 - 10 centimeters
19. Which of these is needed to measure the mass of a rock?
- An anemometer
 - A barometer
 - A balance
 - A metric ruler



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

Trial	Temperature ($^{\circ}\text{C}$)
A	41
B	40
C	31
D	42

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
 - B
 - C
 - D



22. A student uses the equipment shown above to study which liquid is the thickest. What information is the most appropriate to record?

- The height of each of the graduated cylinders
- The time it takes for each marble to hit bottom
- The size and mass of each of the marbles
- The volume of each of the liquids in the cylinders

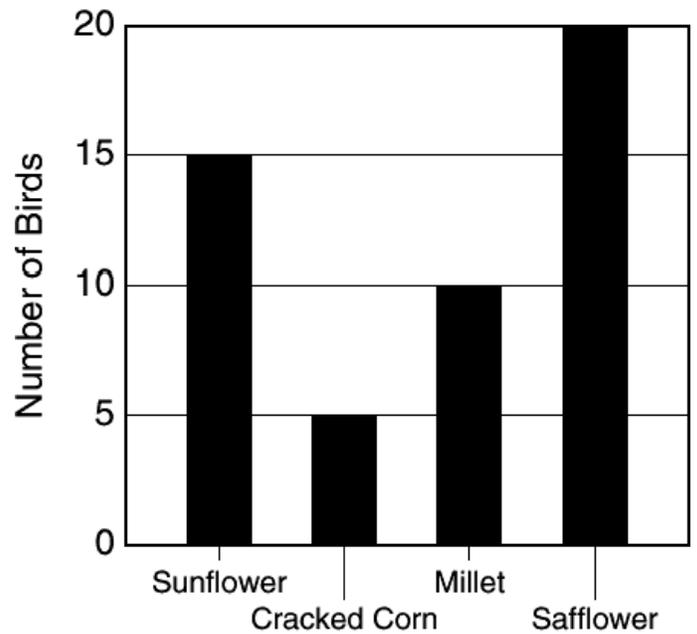
23. Which of these units would be best to use to measure the amount of water in a test tube?

- Milliliters
- Meters
- Kilograms
- 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?

- Gram
- Degrees Celsius
- Meter
- Second

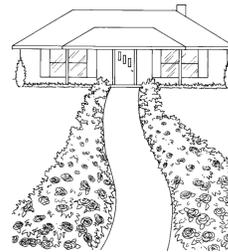
Bird Food Choices



Type of Food

25. According to the graph, which combination of food would probably bring the most birds to the feeder?

- Sunflower seeds and cracked corn
- Cracked corn and millet
- Millet and safflower seeds
- Sunflower and safflower seeds



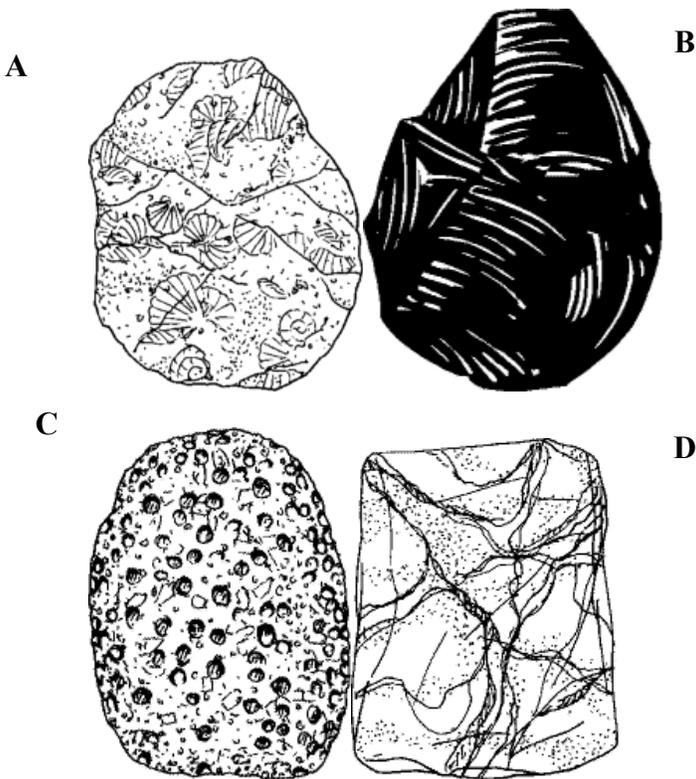
26. Sandy grows roses along her walkway. The roses close to the street had more blooms than the roses close to the house. Which statement is a hypothesis Sandy could make about her roses?

- There were many blooms on the roses near the house and fewer blooms on the roses closest to the street.
- The roses closest to the street had more blooms because they received more sunlight.
- The roses near the house were taller but had fewer blooms.
- The roses close to the house had fewer blooms and leaves.

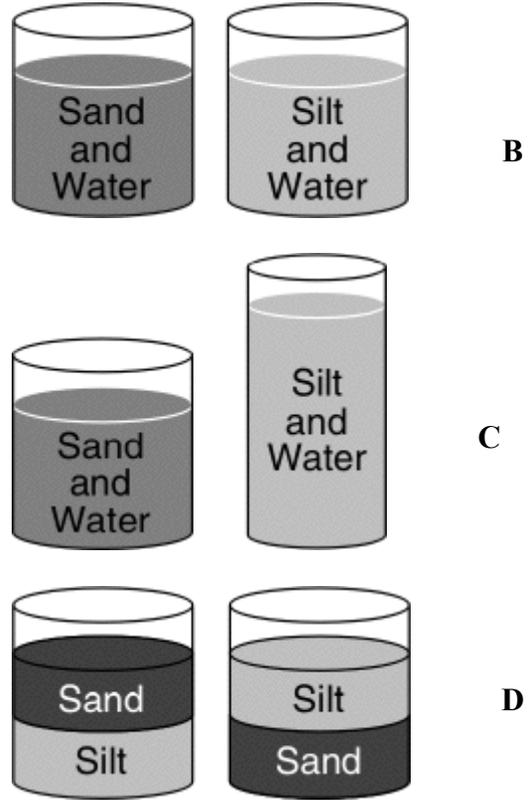
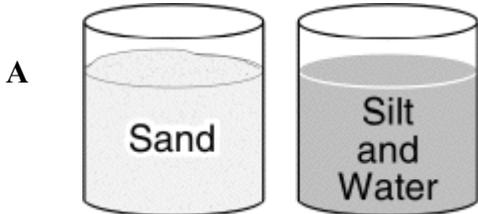
Three Basic Types of Rocks

Igneous	Formed from cooled and hardened magma deep inside the Earth or from lava at the surface
Sedimentary	Formed when layers of sediments or rock pieces are cemented together; may contain fossils
Metamorphic	Formed when rocks are changed by heat, pressure or chemical action; may be banded

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

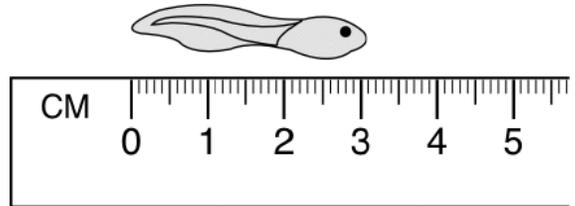


28. Which of these is the fairest way to find out if sand or silt will settle faster when mixed with water?



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?

- The green berries will ripen into red berries.
- The strawberry plant is growing under an oak tree.
- The strawberry plant doesn't have enough water.
- The green berries are a new type of strawberry.



30. What is the length of the tadpole?

- 2.8 cm
- 3.1 cm
- .5 cm

d. 0 cm

d. 16 cm

Frequency Distribution of Backpack Mass

Mass of Backpacks (kilograms)	Number of Students
0-1	1
2-3	10
4-5	8
6-7	1
8-9	2

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

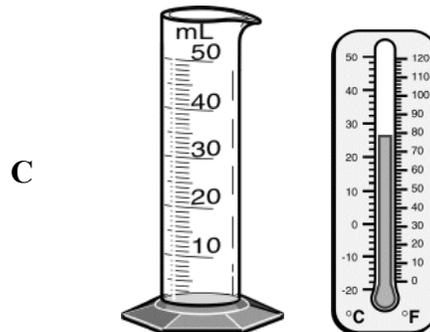
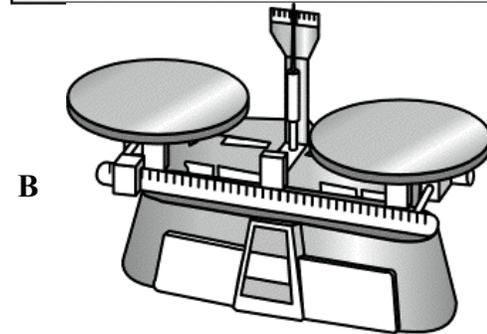
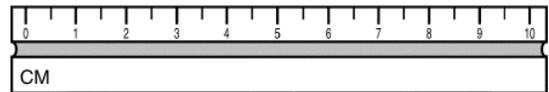
Growth of a Plant

Date	Height of Plant (cm)	Increase in Growth (cm)
March 3	2	0
March 7	4	2
March 11	6	2
March 15	8	2

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

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



C

D

Distance Thrown by Students

Student	Distance Thrown (m)
1	15
2	75
3	10
4	16
5	8

34. Dennis conducted an experiment to determine which of his classmates could throw a ball the farthest. He recorded his results in the above

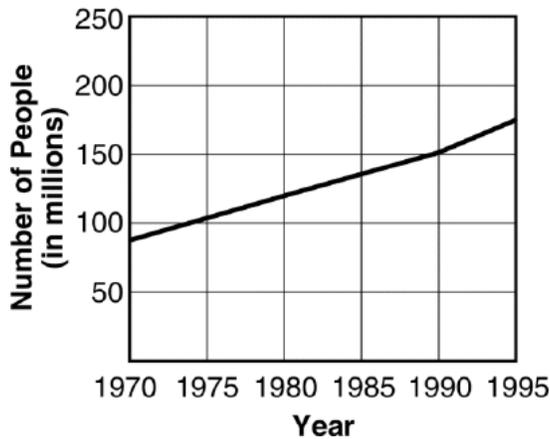
table. Which student's measurement is an **unusual** result?

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

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

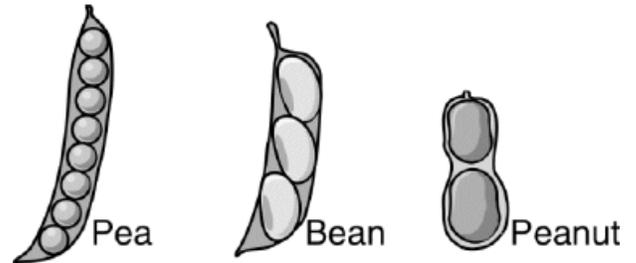
- a. 30 milliliters
- b. 27 milliliters
- c. 37 milliliters
- d. 35 milliliters

**Population of Brazil
1970-1995**

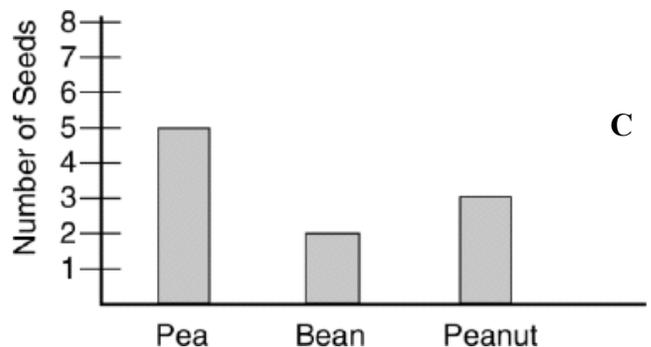
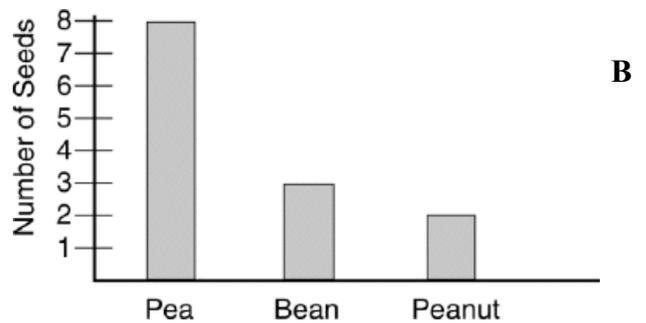
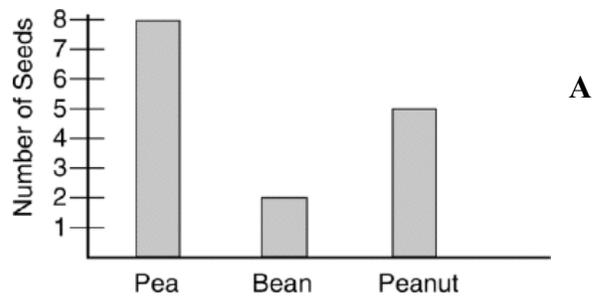


35. From the chart shown above, you can predict that for the year 2000, Brazil's population will –

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



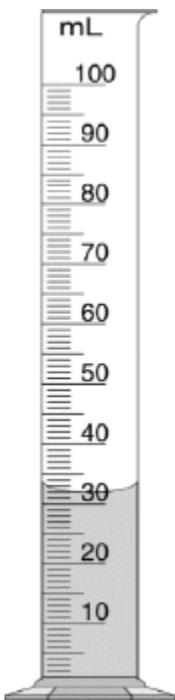
38. The picture above shows some different kinds of seed pods. Which graph correctly shows the number of seeds in each pod?

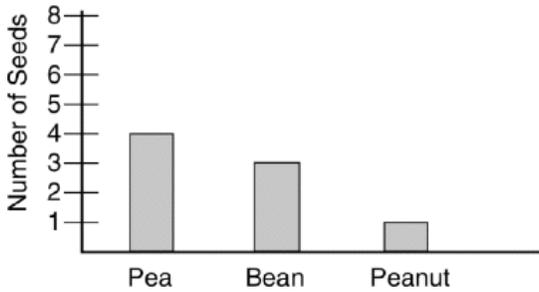


36. Two students wanted to find out which of their toy race cars would go the farthest. They let each car roll down a ramp and then measured how far the cars rolled. Which of these should be held constant if they want a fair test of their cars?

- 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





D

Bean Seed Growth

Temperature (°C)	Days to Germinate
25	5
20	7
15	9
10	11
5	?

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



A

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.

C

START HERE	1	3
Does the creature have a round head? (go to 1)	Does the creature have one big eye? (go to 3)	The creature is a Woznat.
	Does the creature have two eyes? (go to 4)	4 The creature is a Zapoom.
Does the creature have a square head? (go to 2)	2 Does the creature have horns? (go to 5)	5 The creature is a Nanner.
	Does the creature have no horns? (go to 6)	6 The creature is an Ock.



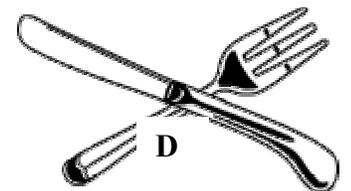
41. According to the identification key, what type of creature is creature Y?

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

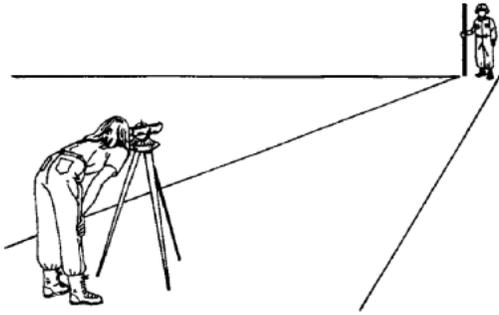
42. Which item below would have a mass closest to that of a thumbtack?



B

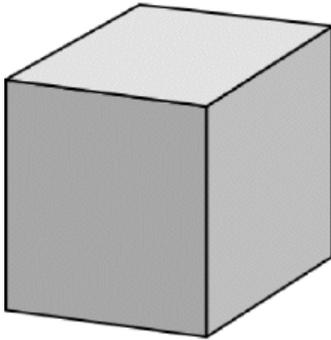


D



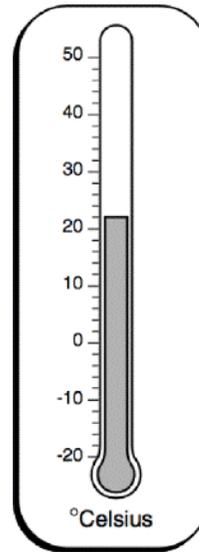
43. This surveyor is measuring the distance of a road. The most appropriate units to measure this distance are -

- 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

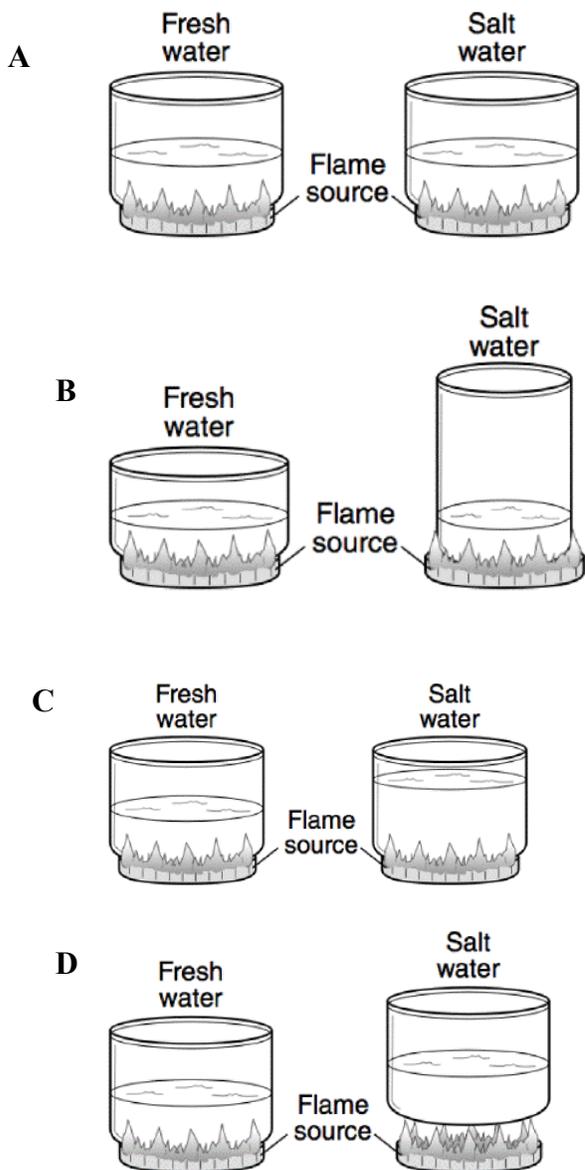
Approximate Surface Gravity of Some Planets Compared to the Earth

Planet	Surface Gravity
Mercury	0.38
Venus	0.90
Earth	1.00
Mars	0.38
Jupiter	2.53

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

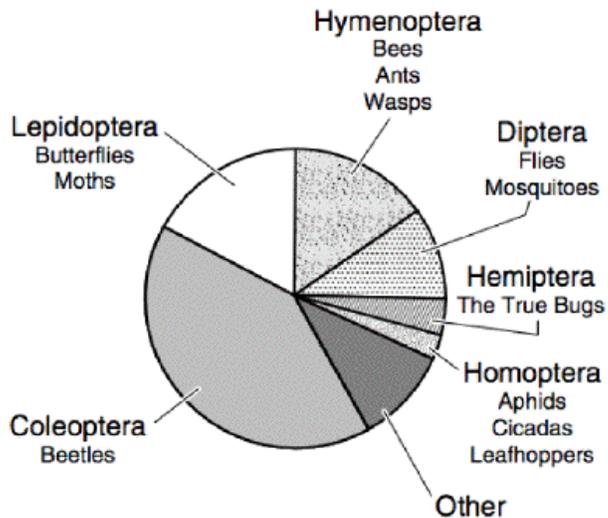
47. Which is the **fairest** way to find out if salt water boils faster than fresh water?



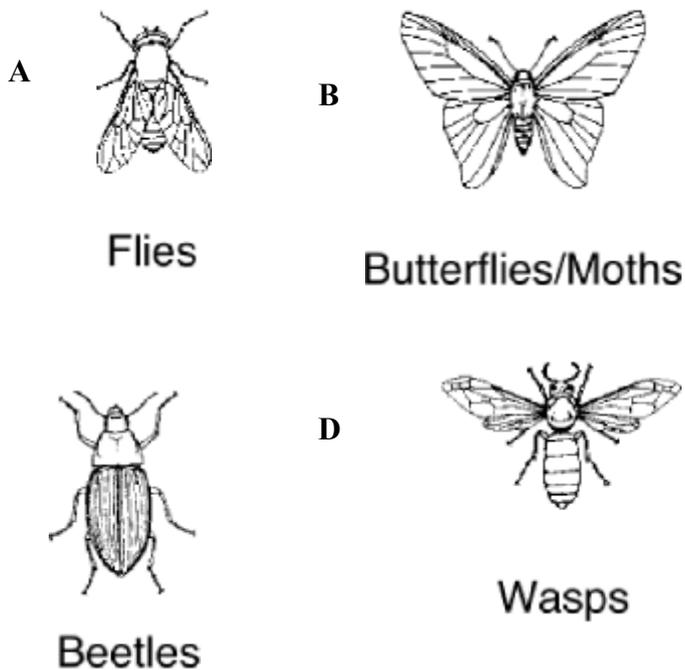
48. During a study of the human body, students are asked to observe the back of their hands and record their observations. What units would be most appropriate for measuring the width of their hands?

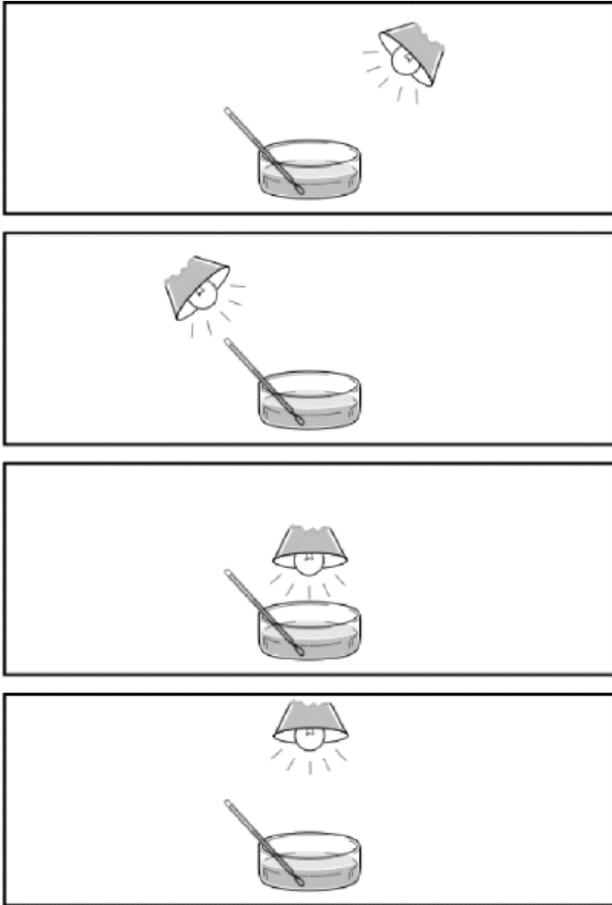
- a. Grams
- b. Centimeters
- c. Liters
- d. Meters

Relative Numbers of Insects Seen



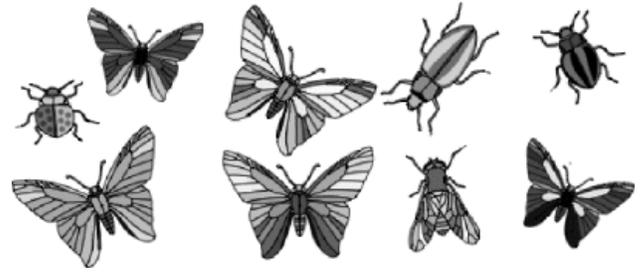
49. A science class went on a field trip and made a graph of the different kinds of insects that they saw. Which group of insects was seen the most?



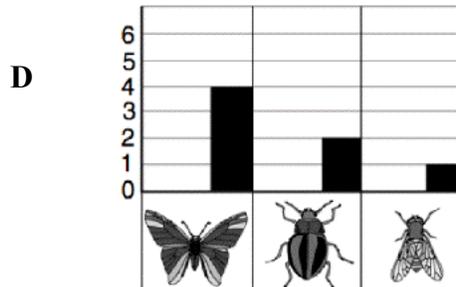
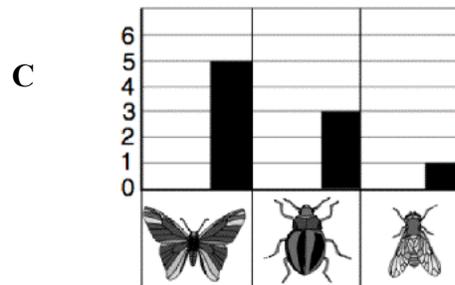
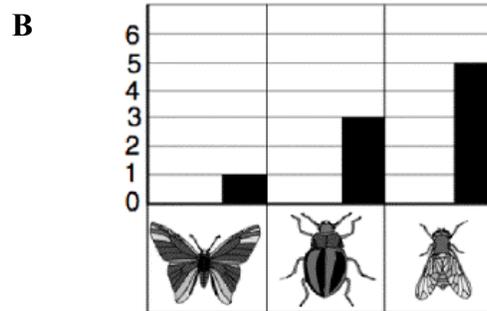
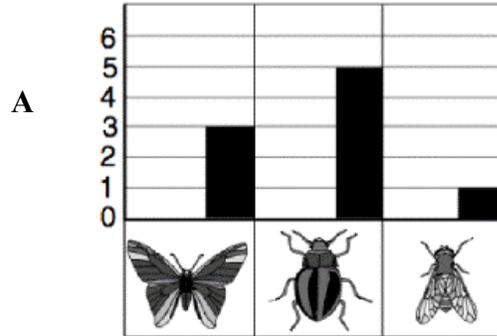


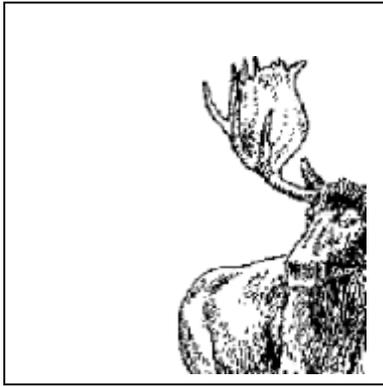
50. The pictures above show how one student tried to see how the heat from a light bulb affected the rate of evaporation of a liquid. What is the only variable being changed in this experiment?

- The size of the container
- The position of the thermometer
- The position of the light bulb
- 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