Name _____ Date _____

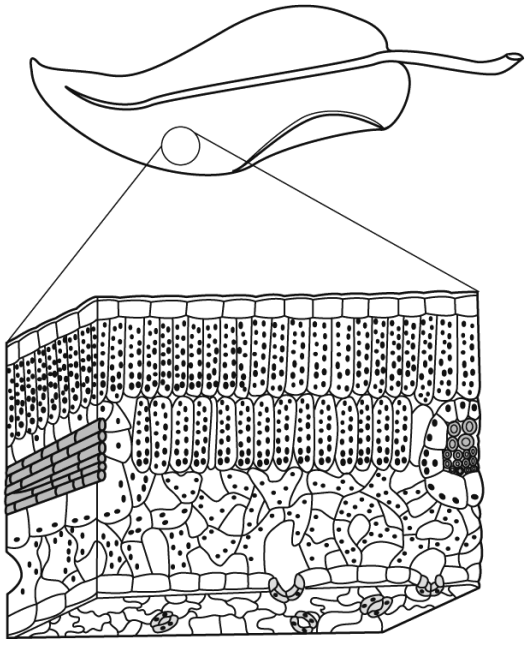
Cumulative Test

Test A

❶ Wendy folds four sheets of paper into airplanes. Each plane has a different shape. She throws each plane the same way, and then she measures how far each plane flies after she throws it. Which question is Wendy investigating?

Ⓐ How does a paper airplane fly?
Ⓑ How does airplane shape affect flight?
Ⓒ How does airplane weight affect flight?
Ⓓ How does throwing a plane in different ways affect flight?

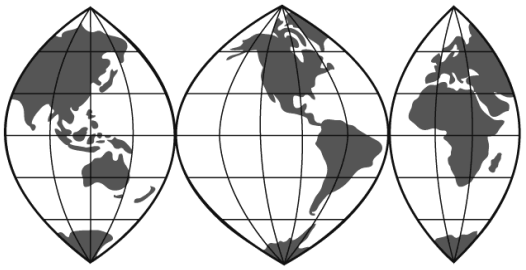
❷ Aba is studying parts of a plant. He finds a picture showing the inside structure of a leaf.



This picture most likely came from which source?

Ⓐ a dictionary
Ⓑ a short story
Ⓒ another fourth-grade student
Ⓓ an Internet article about leaf structure

❸ A map projection shows a three-dimensional object on a flat map. Below is a map projection of Earth.



What type of model is a map projection?

Ⓐ a mental model
Ⓑ a computer model
Ⓒ a two-dimensional model
Ⓓ a three-dimensional model

❹ Alex, Ricardo, and Atsuo want to practice their gymnastics routine at Atsuo's home. They need a mat to absorb the force of jumping or falling down. They brainstorm some possible ways to make a mat that would be both sturdy and soft. What should they do next?

Ⓐ design the mat
Ⓑ test a model mat
Ⓒ build a prototype
Ⓓ draw conclusions

5 Four students work as a team on a class project, using craft sticks to build a bridge that could hold a 5-kg weight without breaking. They have just tested their prototype, and it broke under the 5-kg weight. Now what should they do?

- (A) redesign the bridge and make a new model
- (B) lower the goal to 4 kg
- (C) conclude that they can't reach the goal
- (D) rebuild the same prototype and test it again

6 The bald cypress tree produces seeds that are protected within cones. This tree is found in Florida swamps, where heavy rains cause floods. The floodwaters spread the cones throughout the swamps. What role do the floodwaters play in the life cycle of the bald cypress?

- (A) pollination
- (B) fertilization
- (C) seed dispersal
- (D) removal of dead leaves

Name _____ Date _____

7 Maya is observing the growth of different bean seedlings. She places each seed on a wet paper towel and seals it in a plastic bag. She puts all the seeds in a warm place to germinate. After they germinate, she places a seed in the refrigerator, one in the middle of the room, and one on top of a hot radiator. Which factor is Maya investigating?

- (A) the effect of water on plant growth
- (B) the effect of lack of soil on plant growth
- (C) the effect of temperature on plant growth
- (D) the effect of lack of oxygen on plant growth

8 Where would an animal with large ears and thin fur **most likely** live?

- (A) in a desert
- (B) in a stream
- (C) underground
- (D) in a polar region

Name _____ Date _____

9 A cardinal is a bird that lives in North America and South America. There are many types of cardinals. Most have bright, colorful feathers that are red, orange, or blue. The following picture shows one type of cardinal.

What does a cardinal most likely eat?

Ⓐ insects
Ⓑ nectar
Ⓒ seeds
Ⓓ worms

10 Iguanas are lizards that eat plants and insects. What type of consumer is an iguana?

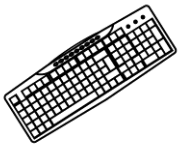
Ⓐ carnivore
Ⓑ herbivore
Ⓒ omnivore
Ⓓ producer

Name _____ Date _____

11 Many household items are made from renewable resources. Which of these objects is made from a renewable resource?

Ⓐ Plastic bag

Ⓑ Wooden spoon



Ⓒ Computer keyboard

Ⓓ Plastic container

12 The table below shows how long it takes for various paper products to decompose in salt water.

Item	Decomposition time
paper towel	2–4 weeks
newspaper	6 weeks
cardboard box	2 months
waxed milk carton	3 months

Which of the following would you expect to decompose the fastest?

Ⓐ shoebox
Ⓑ magazine
Ⓒ cereal box
Ⓓ paper napkin

Name _____ Date _____

13 In which of the following ways are mountain and valley breezes similar to land and sea breezes?

- (A) Both take place only in hilly areas.
- (B) Both take place only during rainy weather.
- (C) Both are stronger at night than during the day.
- (D) Both are caused by differences in temperature.

14 The weather report predicts fair weather for the next few days. Which weather observations best support this prediction?

- (A) cirrus clouds and a rising barometer
- (B) stratus clouds and a falling barometer
- (C) low temperature and winds from the north
- (D) high temperature and winds from the south

Name _____ Date _____

15 Sean looks at his calendar. He sees that tonight's phase of the moon will be a new moon. Which will be the next phase Sean sees after the new moon?

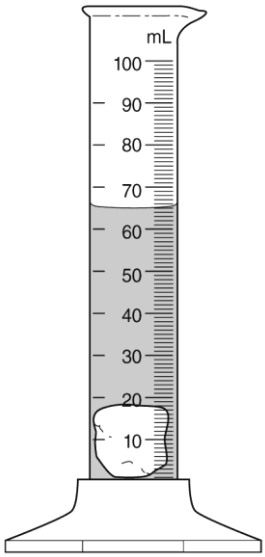
(A) full moon
(B) first quarter
(C) third quarter
(D) another new moon

16 The sun is at the center of the solar system. Which category of objects in the solar system does not revolve around the sun?

(A) moons
(B) comets
(C) asteroids
(D) dwarf planets

Name _____ Date _____

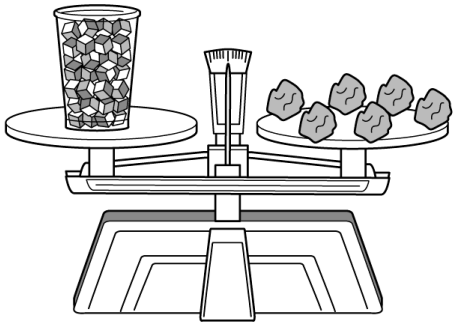
17 Natalia fills a graduated cylinder with 50 mL of water. She places a small rock inside the cylinder, as shown in the picture below.



What is the volume of the rock placed inside the graduated cylinder?

Ⓐ 15 mL
Ⓑ 50 mL
Ⓒ 65 mL
Ⓓ 100 mL

18 Peter places six balls of modeling clay on one side of a balance. He places a plastic cup on the other side and finds that it takes 41 plastic cubes to balance the modeling clay. He then removes the modeling clay, shapes it into a dinosaur, and puts it back on the balance.

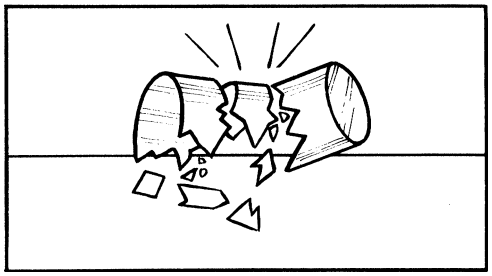


How many cubes will he **most likely** need to put into the cup to balance the dinosaur?

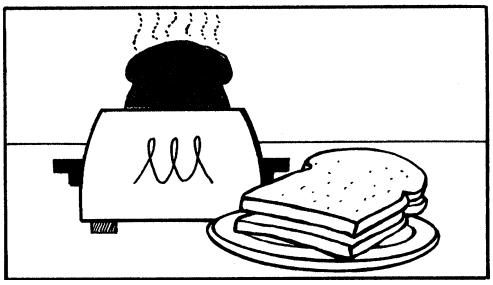
Ⓐ 35 cubes
Ⓑ 38 cubes
Ⓒ 41 cubes
Ⓓ 47 cubes

Name _____ Date _____

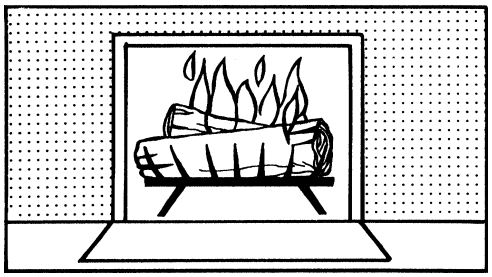
19 Look at the pictures below.



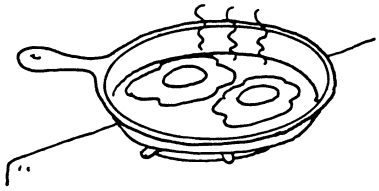
A



B



C

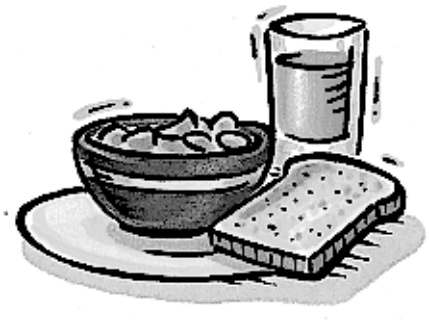


D

Which is an example of a physical change?

(A) Picture A
(B) Picture B
(C) Picture C
(D) Picture D

20 Marco made himself breakfast, which is shown in the picture below.

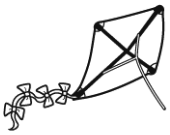


Which of Marco's activities produced a chemical change?

(A) toasting the bread
(B) adding raisins to the cereal
(C) putting the hot toast onto the plate
(D) stirring cocoa powder into the milk

Name _____ Date _____

21 The pictures below show different forms of energy. Which picture shows an object with **mostly** potential energy?

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

22 Seamus knows that heat energy can move between substances. For example, warm water can warm his hands. Which condition must be present for the transfer of energy between two substances to take place?

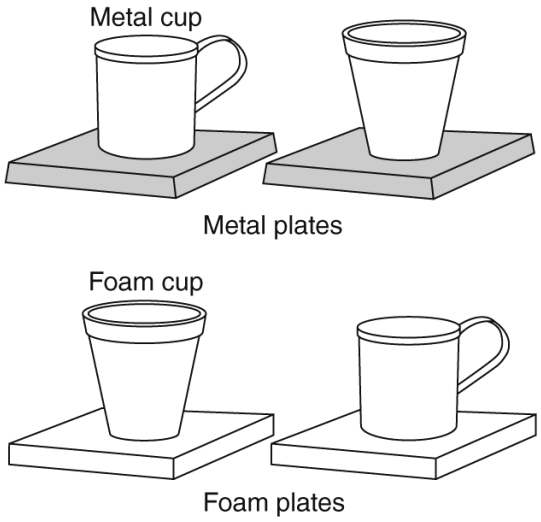
Ⓐ The objects must both be solids.

Ⓑ The objects must be the same temperature.

Ⓒ The objects must be different temperatures.

Ⓓ The objects must transfer energy without the use of matter.

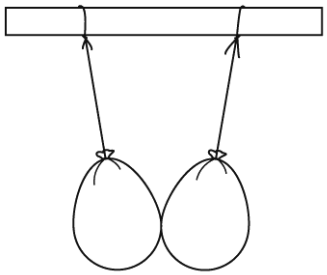
23 Cala has two metal cups and two foam cups. She places one of each type on a metal plate and one of each type on a foam plate. She then fills each cup with very hot water.



Which cup will lose heat most slowly?

(A) foam on foam
(B) foam on metal
(C) metal on foam
(D) metal on metal

24 Aisha wanted to know how positive and negative charges affect balloons. The balloons shown below are part of her investigation.



What are the charges on the balloons?

(A) They are both positive.
(B) They are both negative.
(C) They are both uncharged.
(D) One is positive and one is negative.

25 There are two main types of electric circuits: series circuits and parallel circuits. How are series circuits different from parallel circuits?

Ⓐ A series circuit provides power to one or two devices. A parallel circuit provides power to many devices.

Ⓑ In a series circuit, electrons flow in one direction. In a parallel circuit, electrons travel in both directions.

Ⓒ A series circuit uses electrical energy from a battery. A parallel circuit uses power from an outlet or generator.

Ⓓ In a series circuit, there is only one possible path that electrons can follow. In a parallel circuit, there are two or more possible paths.