

Student Name _____

Teacher Name _____

School _____

System _____

ACH



TENNESSEE

LENNESSEE

Tennessee Comprehensive Assessment Program Achievement Test ~ Grade 5 Practice Test





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1 Which bird has a beak that is best adapted for cracking seeds?

A



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C



© Eric Isseké/Stockphoto #5036534

B



© Paul Tessier/Stockphoto #6292653

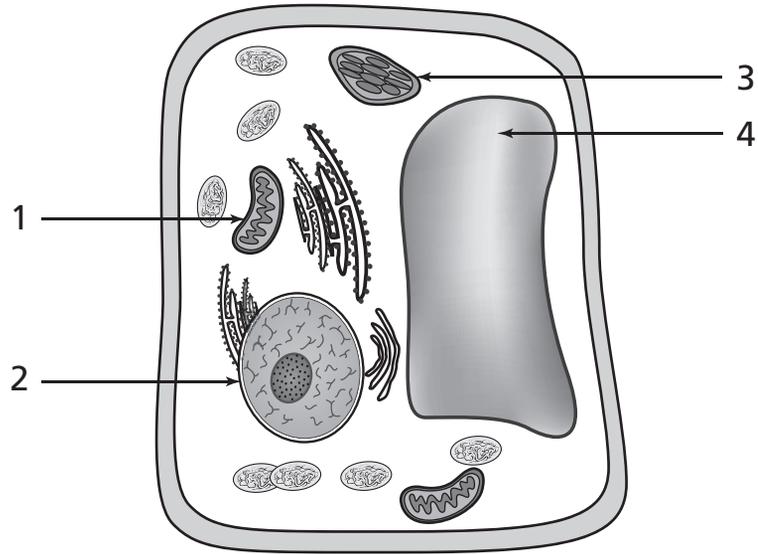
D



© Wan Enhua/Stockphoto #8427861

Go On ►

2 The diagram shows a cell.



Which structure should be labeled the nucleus?

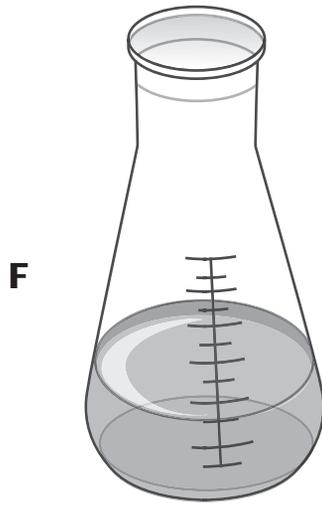
- F** 1
- G** 2
- H** 3
- J** 4

3 A dog has 6 puppies, 4 females and 2 males. Which statement best describes the characteristics of the puppies?

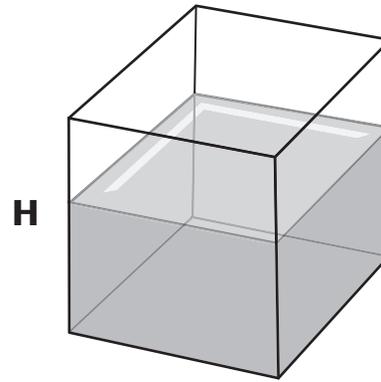
- A** All of the puppies will look exactly like the mother.
- B** All of the puppies will look exactly like the father.
- C** The male and female puppies will look like both the mother and the father.
- D** The male puppies will look like the father, and the female puppies will look like the mother.

Go On ►

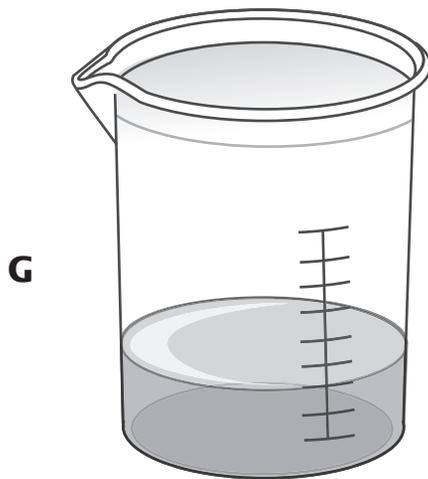
- 4** Students are testing how the shape of a container affects the rate of evaporation. They place four containers of water outside on a windy day. From which open container will the water most likely evaporate the fastest?



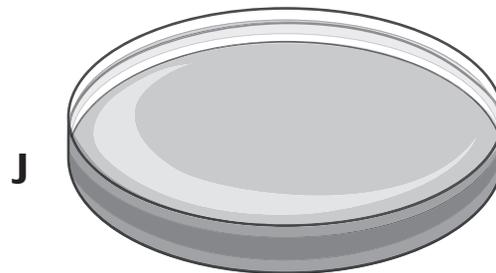
150 mL of Water



150 mL of Water



150 mL of Water



150 mL of Water

- 5** Four objects were dropped from a height of 10 meters. The order in which they reached the ground is shown in the table.

Falling Objects

Object	Order
Feather	3rd
Golf Ball	1st
Sheet of Notebook Paper	4th
Foam Ball	2nd

The sheet of paper took the longest time to reach the ground most likely because

- A** it has the most mass.
- B** it has the most surface area.
- C** it has the least weight.
- D** it is the smallest object.

6 Which force holds the atmosphere of Earth in place?

- F** electric
- G** magnetic
- H** gravity
- J** friction

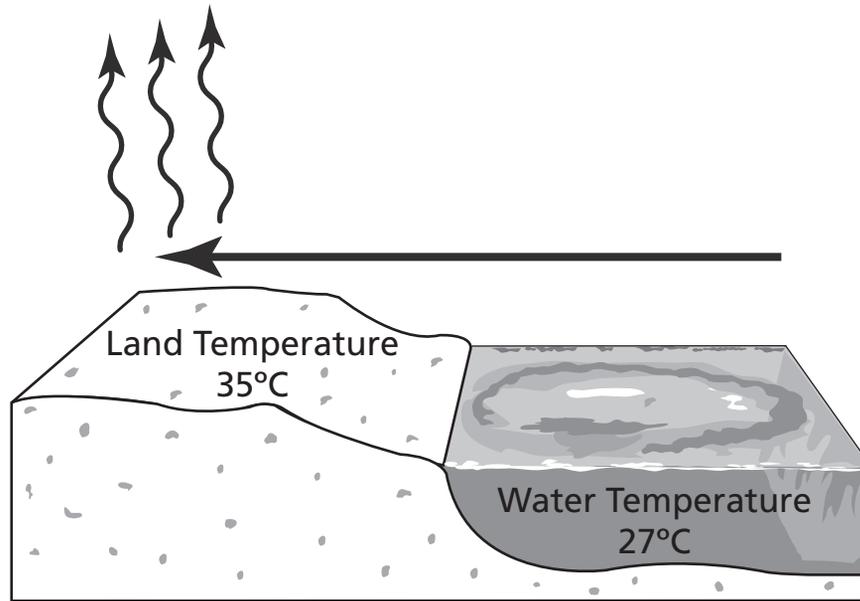
7 Which would most likely cause a substance to melt?

- A** addition of heat
- B** removal of heat
- C** increase in mass
- D** decrease in mass

8 As a city's population grows, wooded areas are replaced by housing developments. What effect will this most likely have on the species in the wooded areas?

- F** More natural predators will move to the wooded areas.
- G** New species will migrate to the wooded areas.
- H** A few species will adapt to become predators.
- J** The population of some species will become zero.

9 A diagram of land and ocean temperatures is shown.



This diagram illustrates the

- A** cause of sea breezes.
- B** effect of erosion on the shoreline.
- C** movement of crustal plates.
- D** formation of a hurricane.

Go On ►

10 An airplane is slowing down and flying lower as it prepares to land at an airport.

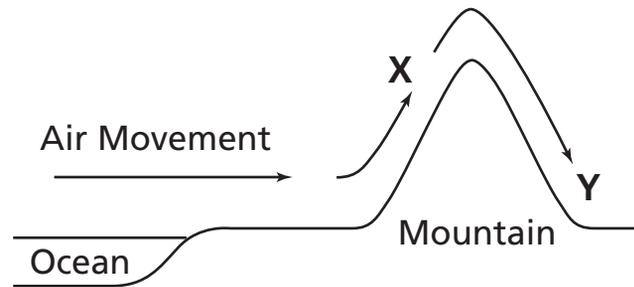
Which statement best describes the energy of the airplane?

- F** The kinetic energy decreases, and the potential energy decreases.
- G** The kinetic energy decreases, and the potential energy increases.
- H** The kinetic energy increases, and the potential energy decreases.
- J** The kinetic energy increases, and the potential energy increases.

11 A certain type of mite is a parasite of honeybees. Which statement best describes the relationship between the mites and the bees?

- A** The mites harm the bees by feeding on their blood.
- B** The mites get honey in return for helping the bees stay healthy.
- C** The mites help the bees find food but get nothing in return.
- D** The mites live in the hive of the bees but do not interact with the bees.

- 12** A diagram illustrating the movement of an air mass over a mountain is shown.

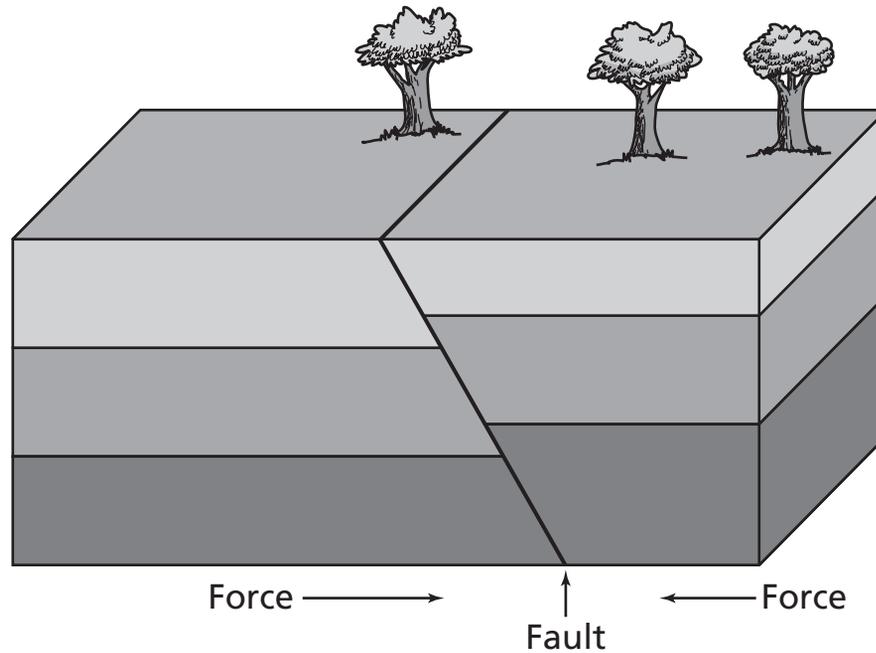


How is the air at Y most likely different from the air at X?

- F** The air at Y is colder than at X.
 - G** The air at Y is drier than at X.
 - H** The air at Y is moving faster than at X.
 - J** The air at Y is more polluted than at X.
- 13** Four objects were dropped at the same time from the same height. Which object will most likely have the longest drop time?
- A** an iron ball
 - B** a large book
 - C** an open umbrella
 - D** a horseshoe magnet
- 14** Newton's understanding of gravity was important for the development of which technology?
- F** a satellite that orbits Earth
 - G** a car powered with corn oil
 - H** robots that help with daily tasks
 - J** instruments that detect radio waves coming from space

Go On ►

15 The drawing shows forces causing a fault in the Earth's surface.



Which may result as movement occurs along this fault?

- A** fossil formation
- B** hot spring
- C** volcano
- D** earthquake

16 Which structures are found in both plant and animal cells?

- F** chloroplast and cytoplasm
- G** mitochondrion and chloroplast
- H** vacuole and cell wall
- J** nucleus and vacuole

- 17** A teacher placed a metal spoon in a container of water with a temperature of 37°C. Then the teacher measured the temperature of the spoon in the water for 5 minutes.

Temperature of the Spoon

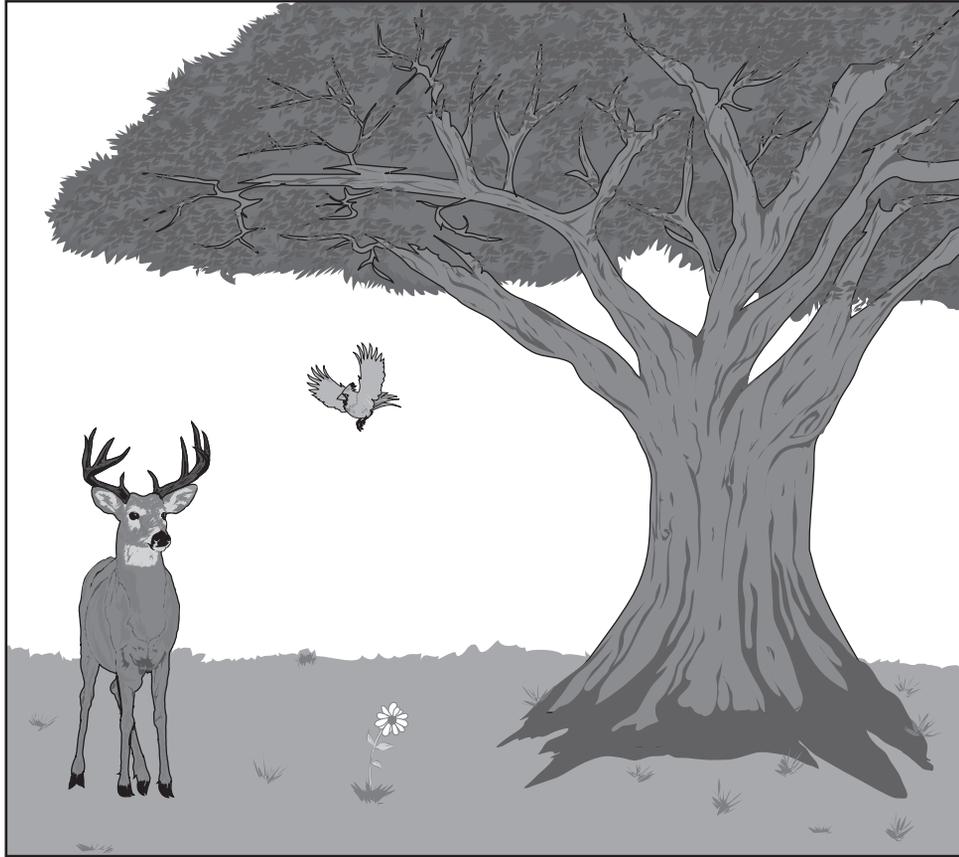
Time (min)	Temperature (°C)
0	23
1	25
2	26
3	28
4	29
5	31

Based on the data, which best explains how energy was transferred between the metal spoon and the water?

- A** Heat from the water transferred to the spoon by radiation.
- B** Heat from the water transferred to the spoon by conduction.
- C** Heat from the spoon transferred to the water by radiation.
- D** Heat from the spoon transferred to the water by conduction.

Go On ►

18 Some organisms are shown in the drawing below.



Which statement best compares how these organisms obtain energy?

- F** The tree, grass, and flower make food, and the deer and bird must eat food.
- G** The deer and bird make food, and the tree, grass, and flower must eat food.
- H** The deer, flower, bird, grass, and tree must make food.
- J** The deer, flower, bird, grass, and tree must eat food.

19 The picture shows the fossilized skull of an extinct animal.



© Mikelegray/Dreamstime #57679

What did this animal most likely eat?

- A** grasses
- B** insects
- C** other animals
- D** dead material

Go On ►

20 Which of these is most responsible for objects being pulled toward the ground?

- F** air pressure
- G** magnetic field
- H** gravity
- J** friction

21 A student often sees birds near his school, like the one shown below.

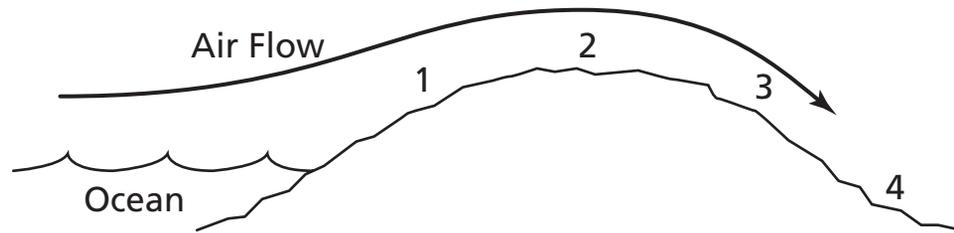


© Mr. Jamsey/iStockphoto #1447256

The student wants to find out how these birds get the energy they need to live. Which investigation would best help the student answer this question?

- A** using the Internet to learn where these birds live
- B** counting the number of these birds near his school
- C** asking the teacher if other animals eat these birds
- D** observing what these birds eat every day for a week

22 The picture shows air flow over a mountain.



Which numbered region most likely has the highest summer temperatures?

- F** 1
- G** 2
- H** 3
- J** 4

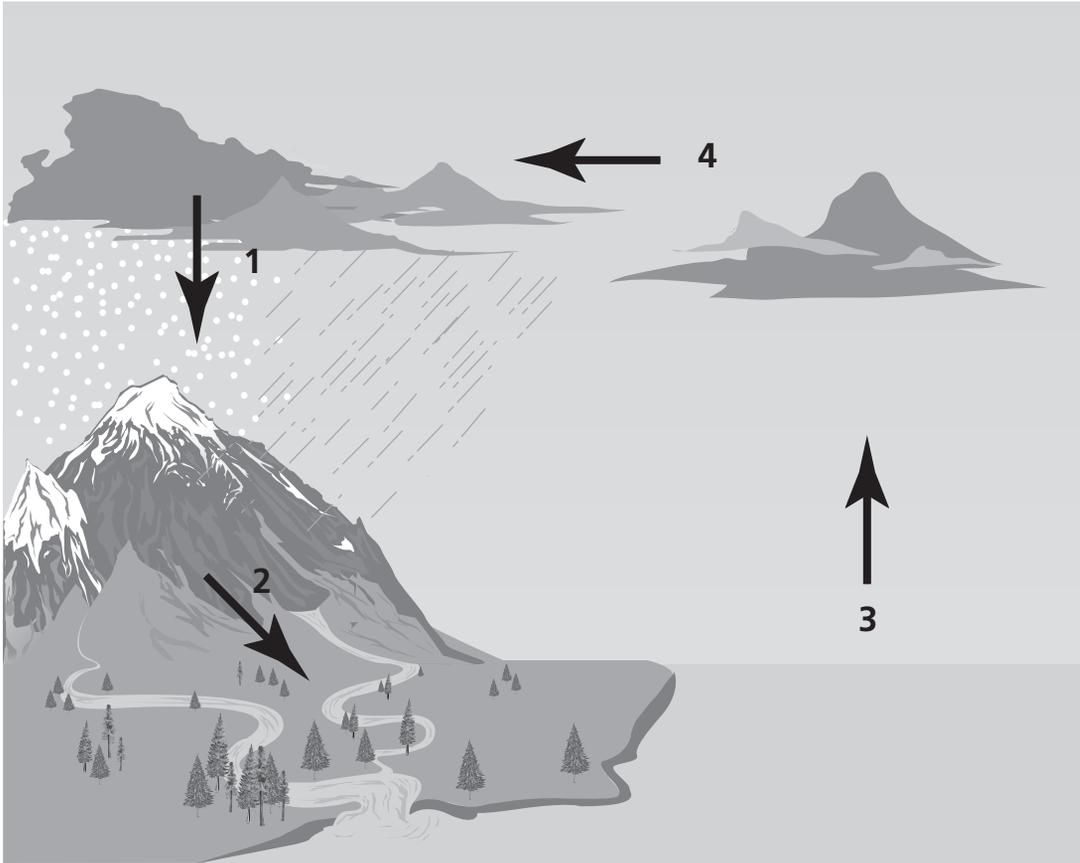
23 Which statement best describes photosynthesis?

- A** process of using sunlight to make food from carbon dioxide and water
- B** process of breaking down materials by wind, water, or temperature change
- C** process of changing from an immature form to an adult form
- D** process of forming clouds through evaporation and condensation

Go On ►

24 A diagram of the water cycle is shown.

Water Cycle



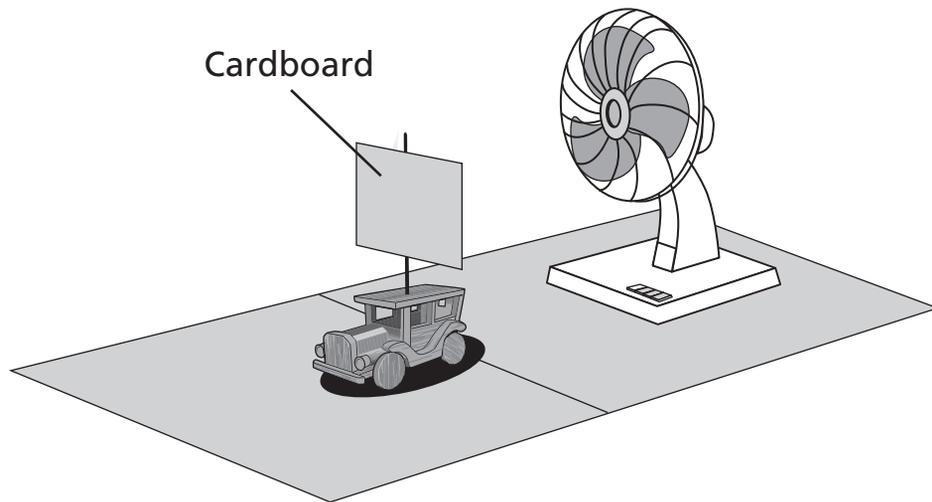
Which arrow on the diagram represents evaporation?

- F** 1
- G** 2
- H** 3
- J** 4

25 Which of these keeps a satellite in orbit around Earth?

- A** the shape of the satellite
- B** the mass of the satellite
- C** the magnetic force of Earth
- D** the gravitational pull of Earth

26 An investigation using a fan and a wooden car is shown.



Which of these will most likely increase the distance the car will travel?

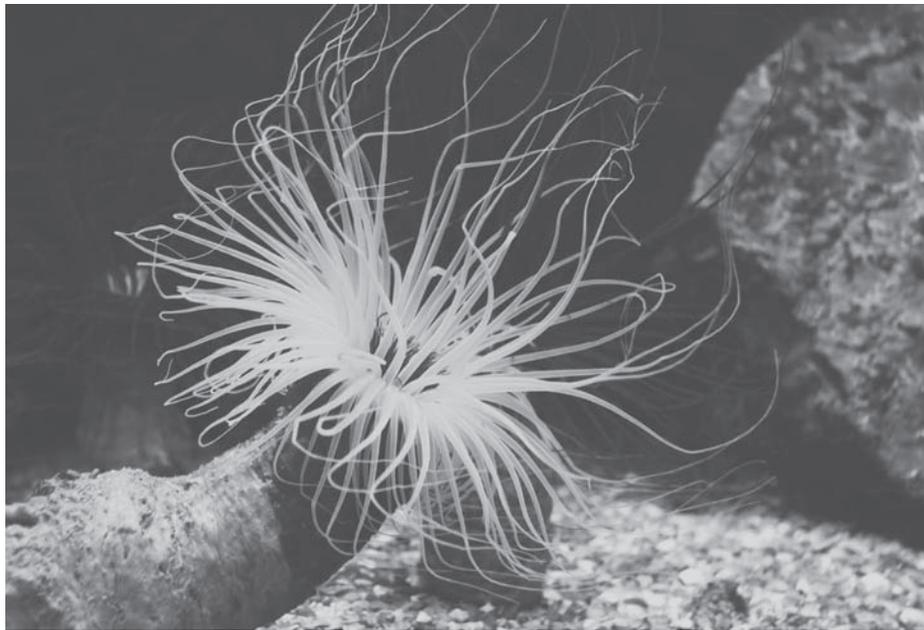
- F** change the direction the car is pointed
- G** make the size of the cardboard larger
- H** decrease the speed of the fan
- J** add mass to the car

Go On ►

27 A flea is a parasite that gets its energy from the blood of animals like dogs. How are the flea and dog affected in this relationship?

- A** Both organisms are helped.
- B** Both organisms are unaffected.
- C** The flea is helped, and the dog is harmed.
- D** The dog is helped, and the flea is not affected.

28 An animal called a sea anemone uses stinging cells to capture prey.



Although this animal looks like a flower, it must get energy from which source?

- F** soil
- G** sunlight
- H** ocean water
- J** other organisms

29 Which of these has the greatest effect on how tall a student will grow?

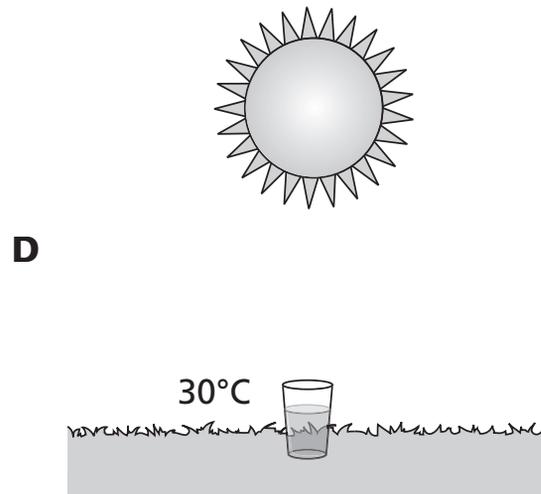
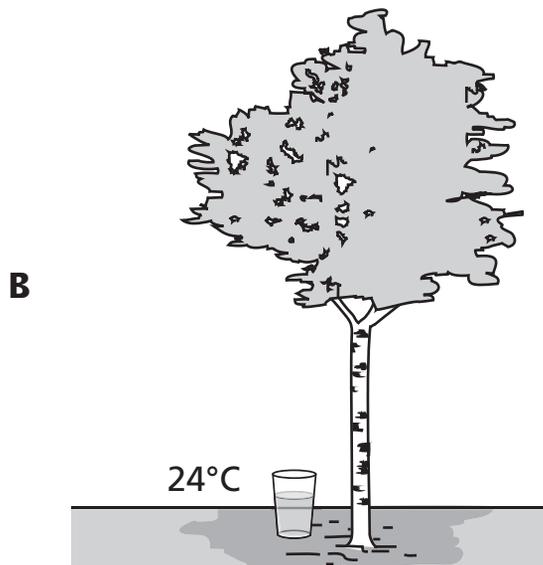
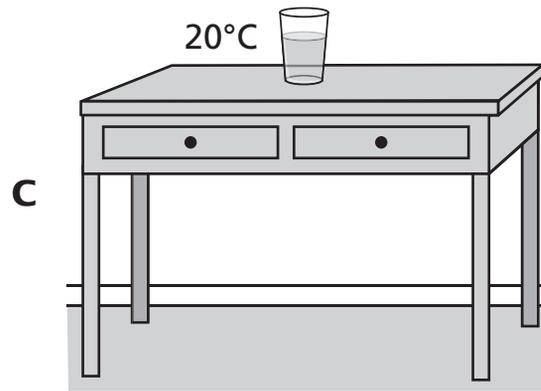
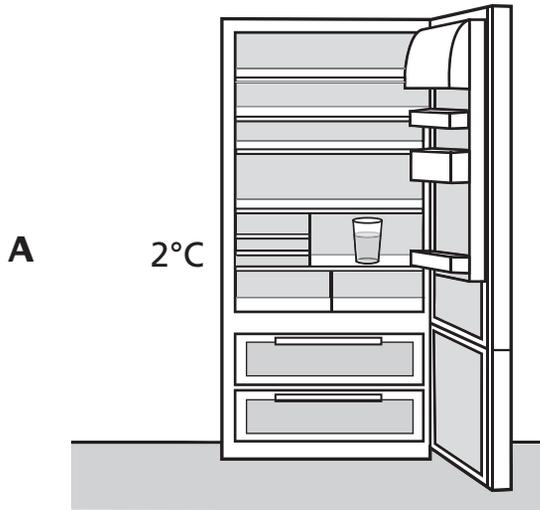
- A** genetic material from both parents
- B** genetic material from the shortest parent
- C** the height of the oldest sibling
- D** the average height of the other siblings

30 Which of these most likely results from plate movement?

- F** sandy beaches
- G** mountain ranges
- H** ocean currents
- J** global winds

Go On ►

31 In which location will the water in the glass evaporate most quickly?



32 Which of these is a physical property?

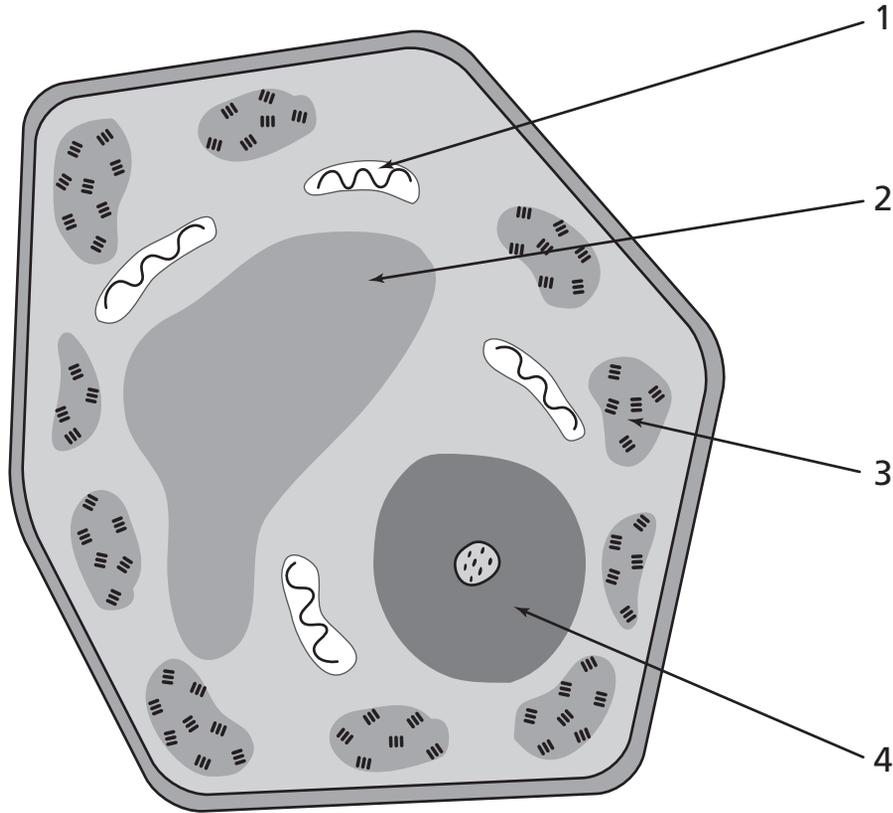
- F** ability to rust in water
- G** ability to react with acid
- H** ability to melt when heated
- J** ability to burn in oxygen

33 Which planet is farthest from the sun?

- A** Earth
- B** Mars
- C** Neptune
- D** Saturn

Go On ►

34 A cell is shown.



Which numbered structure is the vacuole?

- F** 1
- G** 2
- H** 3
- J** 4

35 Plants use energy from the sun to produce sugar through

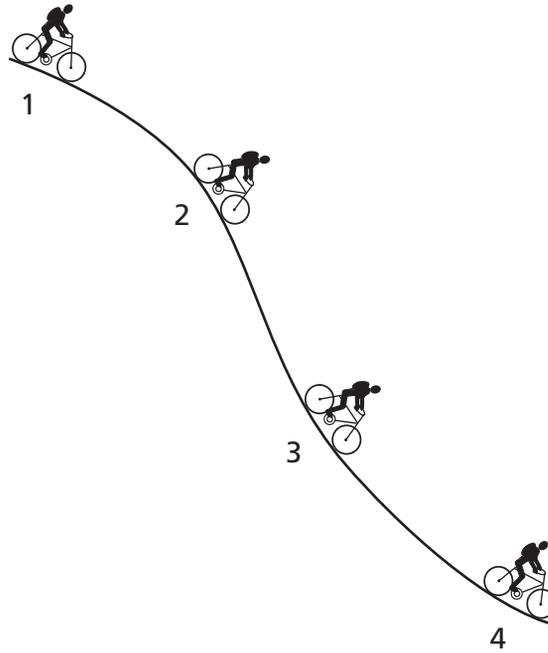
- A** germination.
- B** photosynthesis.
- C** pollination.
- D** respiration.

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Part 2

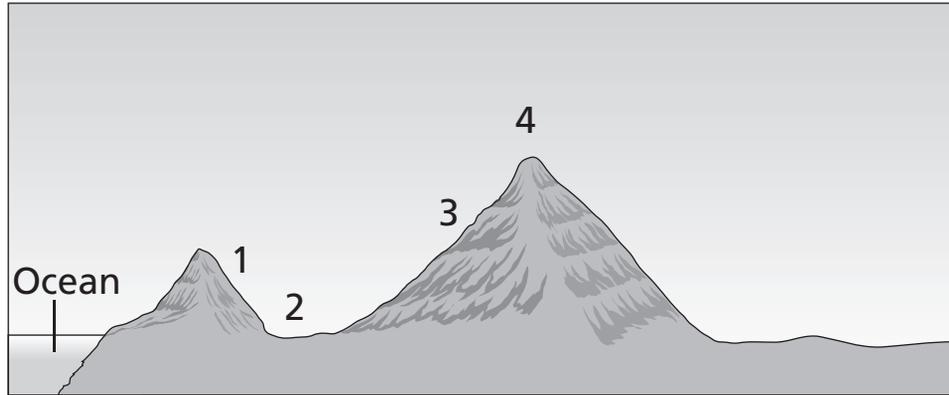
36 A student rides a bicycle down a hill.



At which point do the student and the bicycle have the most potential energy?

- F** 1
- G** 2
- H** 3
- J** 4

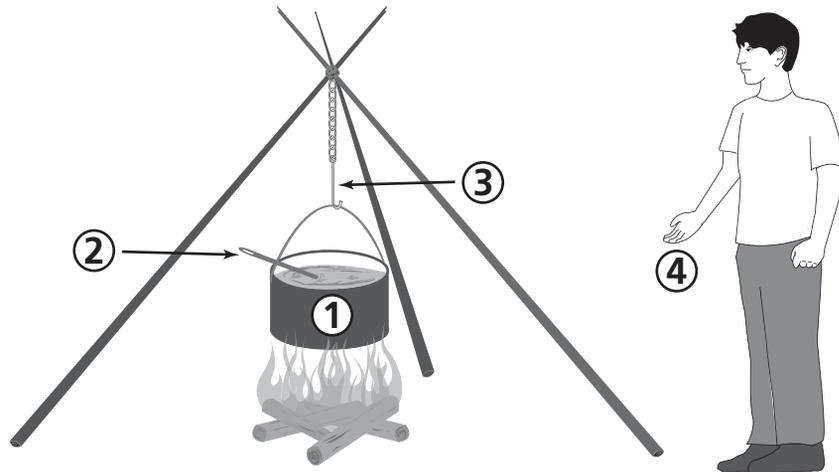
37 The diagram shows two mountains near an ocean.



Warm, moist air rises as it moves over a mountain. Which of the numbered areas will have the most precipitation?

- A** 1
- B** 2
- C** 3
- D** 4

38 A camper cooks a pot of stew over a fire as shown.



At which location is heat from the fire mainly transferred by radiation?

- F** 1
- G** 2
- H** 3
- J** 4

39 Which of these does a puppy inherit from its parents?

- A** dark fur
- B** cut paw
- C** barking to go out
- D** sitting upon request

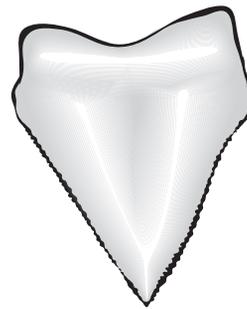
40 Which tool is best for astronomers to use when identifying constellation patterns?

- F** digital camera
- G** star chart
- H** microscope
- J** binoculars

41 The pictures below show a tooth from a shark that lived long ago and a tooth from a shark that lives today.



Shark Tooth Fossil



White Shark Tooth

Based on the teeth, which is the best conclusion?

- A** Sharks that live today are longer than sharks that lived long ago.
- B** Sharks that live today are smaller than sharks that lived long ago.
- C** Modern sharks eat more food than sharks that lived long ago.
- D** Modern sharks live in different habitats than sharks that lived long ago.

Go On ►

42 Which human activity would most threaten the survival of a species that lives in a river?

- F** planting native trees near the river
- G** collecting water samples from the river
- H** using pesticides on farmland near the river
- J** measuring the water temperature of the river

43 Space telescopes helped improve our understanding of outer space by advancing our ability to

- A** take samples from objects in space.
- B** travel farther into space.
- C** communicate into space.
- D** observe objects farther in space.

- 44** The table below contains information about the planets in the solar system.

Planet Information

Planet	Type	Approximate distance from the sun (million km)	Equatorial Diameter (compared to Earth)	Mass (x 10 ²¹ kg)
Mercury	Rocky	57.9	0.382	330.2
Mars	Rocky	227.9	0.532	641.9
Venus	Rocky	108.2	0.949	4,868.5
Earth	Rocky	149.6	1.00	5,974.2
Neptune	Gaseous	4,497.1	3.883	102,430
Uranus	Gaseous	2,871.0	4.007	86,832
Saturn	Gaseous	1,427.0	9.449	568,460
Jupiter	Gaseous	778.3	11.209	1,899,000

Which conclusion can best be made from this information?

- F** The gaseous planets have smaller diameters than the rocky planets.
- G** The closer planets are to the sun, the larger they are.
- H** The gaseous planets have more mass than the rocky planets.
- J** The rocky planets are farther from the sun than the gaseous planets.

- 45** Small pieces of ice are broken off a large block of ice. Compared to the block of ice, the pieces of ice will completely melt

- A** faster than the block of ice.
- B** slower than the block of ice.
- C** at a higher temperature than the block of ice.
- D** at the same rate as the block of ice.

Go On ►

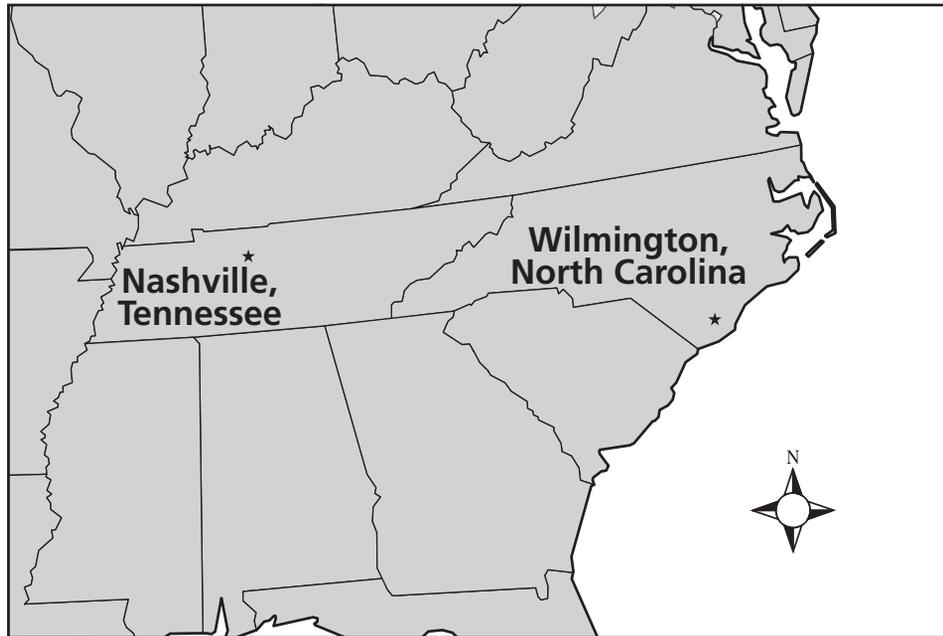
46 A girl is jumping rope.



No matter how high the girl jumps, she always lands back on the ground because

- F** air resistance pushes her down.
- G** the force of gravity pulls her down.
- H** inertia pushes her down.
- J** a magnetic force pulls her down.

- 47** The locations of Nashville, TN, and Wilmington, NC, are shown on the map.



How does the climate of Wilmington most likely compare to the climate of Nashville?

- A** Wilmington has hotter summers because it is farther east.
- B** Nashville has more rain because it is farther west.
- C** Wilmington has milder winters because it is closer to the ocean.
- D** Nashville has the same climate because it is the same distance from the equator.

48 The table gives some characteristics of some of the planets in our solar system.

Planet Characteristics

Planet	Approximate distance from the sun (kilometers)	Diameter (kilometers)	Average Temperature (°C)
Mercury	57 million	4,876	141
Venus	107 million	12,107	449
Earth	150 million	12,755	7.2
Mars	229 million	6,794	-44
Jupiter	777 million	142,983	-153

Which planet is closest in size to Earth?

- F** Mercury
- G** Venus
- H** Mars
- J** Jupiter

49 A student is trying to determine if the composition of ice cubes affects the melting point. Which will be the best investigation to use?

- A** Freeze pure water in 3 identical ice cube trays, and then place each tray on a table in different rooms.
- B** Freeze pure water, sugar water, and salt water in 3 identical ice cube trays, and then place the trays side by side on the same table.
- C** Freeze pure water in 3 different-sized ice cube trays, and then place each tray on a different table in the same room.
- D** Freeze pure water, sugar water, and salt water in 3 different-sized ice cube trays, and then place the trays side by side on the same table.

50 One difference between an animal cell and a plant cell is that

- F** only plant cells have a nucleus.
- G** only animal cells have a cell membrane.
- H** only animal cells have a chloroplast.
- J** only plant cells have a cell wall.

51 Three objects will be dropped from a height of 10 meters. The time it takes for each object to reach the ground will be recorded in the table below.

Data Table

Object	Drop Time (sec)
 Ball	
 Pencil	
 Handkerchief	

The handkerchief will most likely have the longest drop time because of its

- A** length.
- B** mass.
- C** shape.
- D** texture.

52 As a hippopotamus feeds on grass, a small bird feeds on parasites, such as ticks, living on the hippopotamus. Which of these organisms have a mutualistic relationship?

- F** the hippopotamus and the bird
- G** the bird and the tick
- H** the tick and the hippopotamus
- J** the grass and the hippopotamus

- 53** Some information about the planets is given.

Planetary Information

	Mercury	Earth	Mars	Jupiter	Saturn	Neptune
Approximate distance from the Sun (in millions of kilometers)	58	150	228	778	1,427	4,497
Mass of Planet (Earth = 1)	0.1	1	0.1	317.9	95.2	17.1
Number of Observed Moons	0	1	2	62	60	13

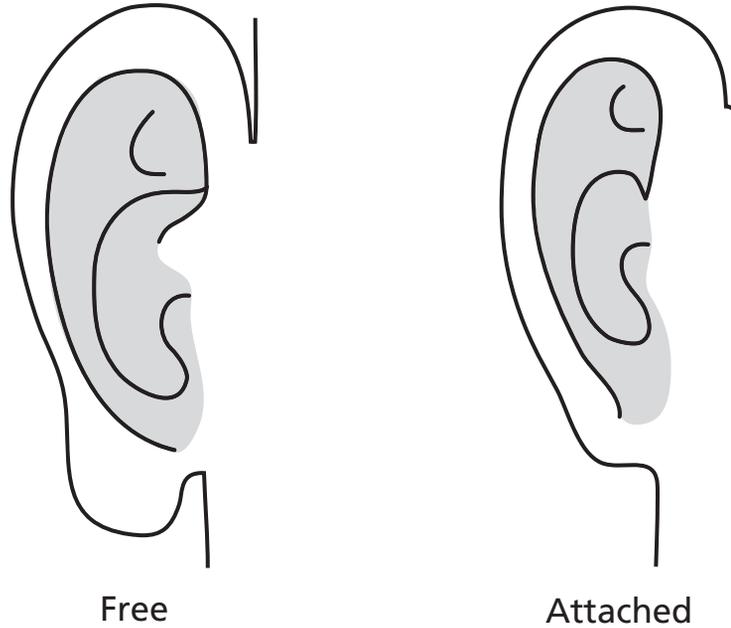
Which conclusion is best supported by the data in the table?

- A** The farther the planets are from the sun, the more moons they have.
- B** The mass of the three farthest planets increases with their distance from the sun.
- C** The greater the mass of the planets, the more moons they have.
- D** The three planets with the smallest mass have the fewest number of moons.

- 54** A student has four identical footballs. A different force is applied to each football as it is thrown. Which force will most likely cause the football to travel the least distance before hitting the ground?

- F** 10 newtons
- G** 12 newtons
- H** 15 newtons
- J** 18 newtons

55 The drawing shows two different types of earlobes in humans.



Which factor most affects whether a student has free or attached earlobes?

- A** the diet of the student
- B** the environment in which the student lives
- C** the genes inherited from the parents of the student
- D** the hearing ability of the student

56 A student is looking for a constellation in the night sky. Which tool should the student use to find the correct direction?

- F** binoculars
- G** compass
- H** star chart
- J** meter stick

57 Which invention slows the growth of bacteria in food?

- A** refrigerator
- B** microwave oven
- C** dishwasher
- D** can opener

58 The picture shows a land feature.

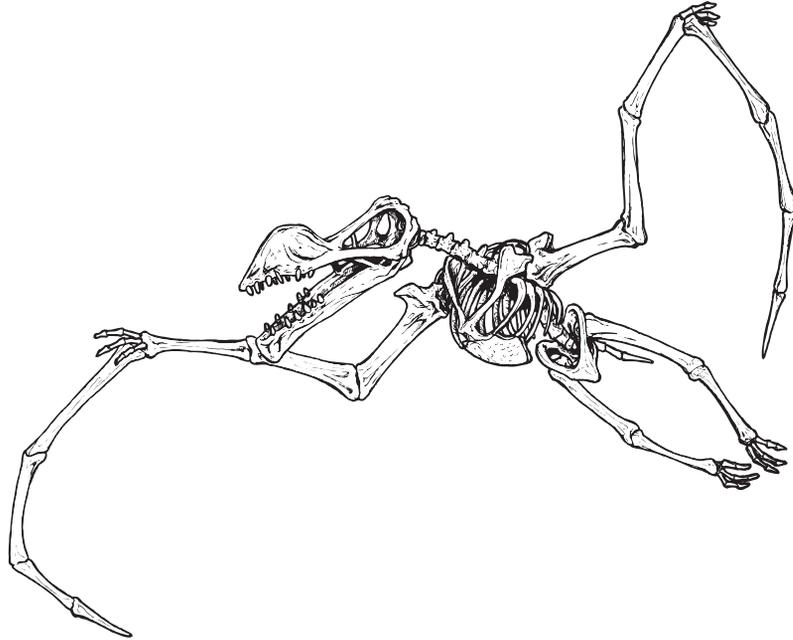


Which event most likely formed this feature?

- F** two crustal plates sliding past each other
- G** rivers depositing large amounts of sand
- H** hot liquid rock moving to the surface
- J** sediments being dropped by the wind

Go On ►

59 A fossil is shown.



Which of these can best be concluded about the animal that this fossil came from?

- A** It had the ability to fly.
- B** It was a plant eater.
- C** It hunted at night.
- D** It traveled in a pack.

60 Which best describes how a hawk obtains energy differently than an oak tree?

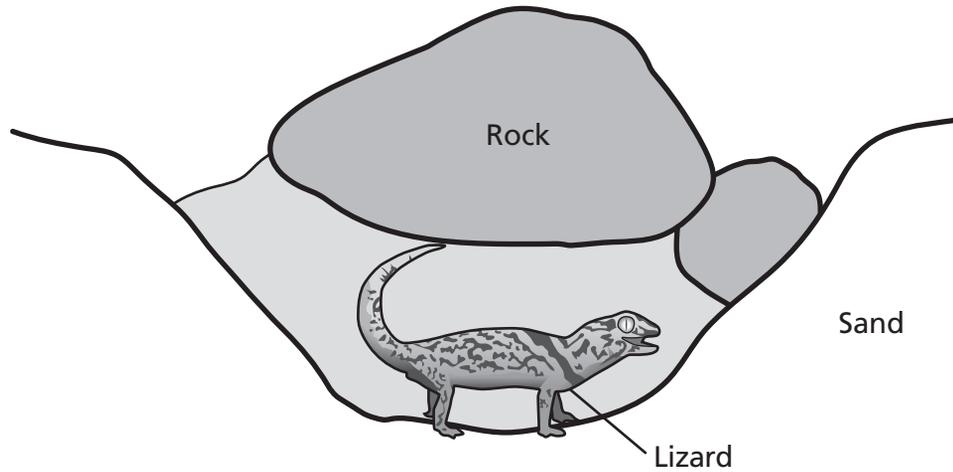
- F** The hawk absorbs energy from the sun.
- G** The hawk absorbs energy from the soil.
- H** The hawk breathes in carbon dioxide.
- J** The hawk consumes other organisms.

61 After a student throws a ball up in the air, the ball falls down to the ground. Which type of force always acts upon the ball to pull the ball to the ground?

- A** electrical
- B** frictional
- C** magnetic
- D** gravitational

Go On ►

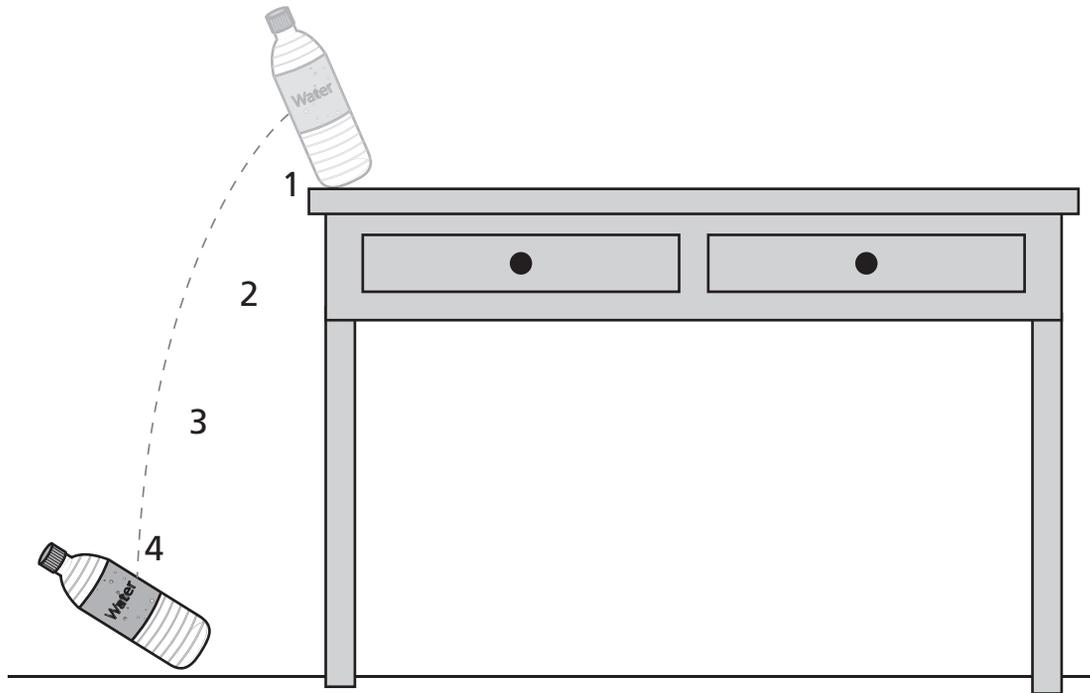
62 Many desert lizards spend daylight hours under rocks, as shown.



This behavior is mainly a response to which part of the environment?

- F** lack of rain
- G** high temperatures
- H** shifting sand
- J** high winds

63 A water bottle is knocked off a desk as shown.



At what position in its fall does the water bottle have the highest amount of kinetic energy?

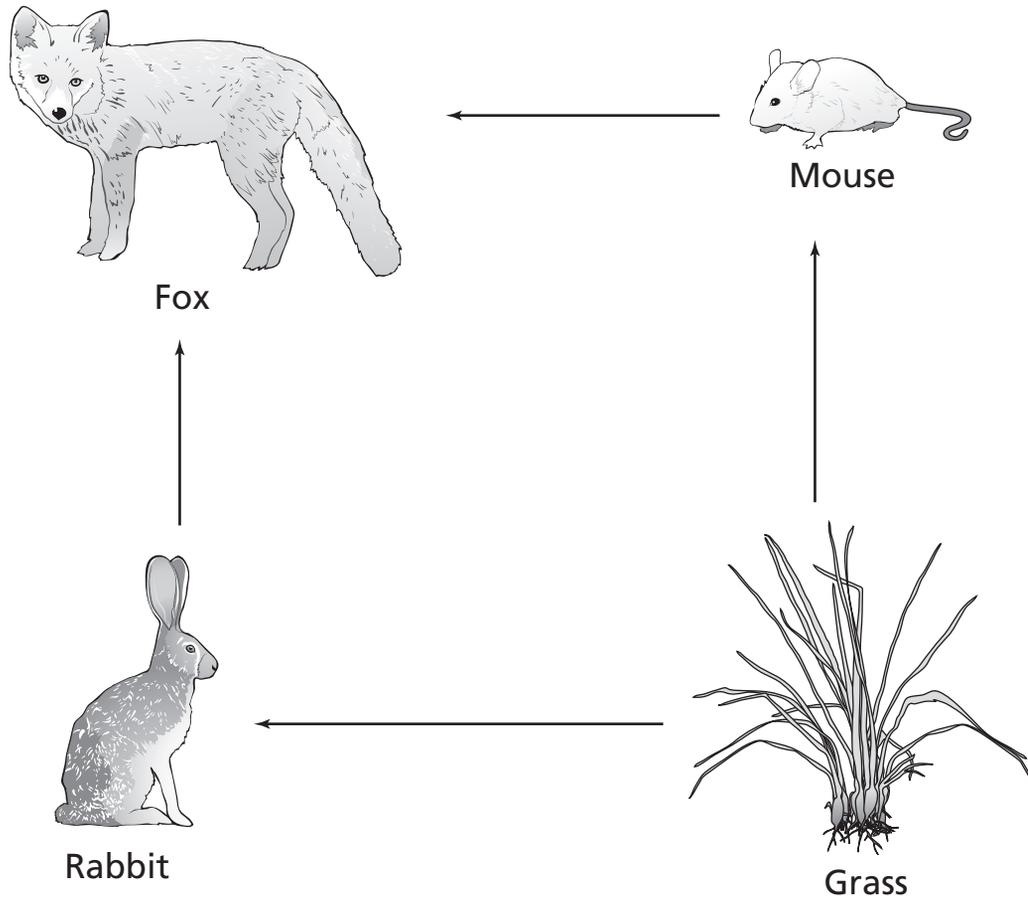
- A** 1
- B** 2
- C** 3
- D** 4

64 Which phase change takes place when heat energy is removed from water?

- F** liquid to gas
- G** liquid to solid
- H** solid to liquid
- J** solid to gas

Go On ►

65 A food web is shown.



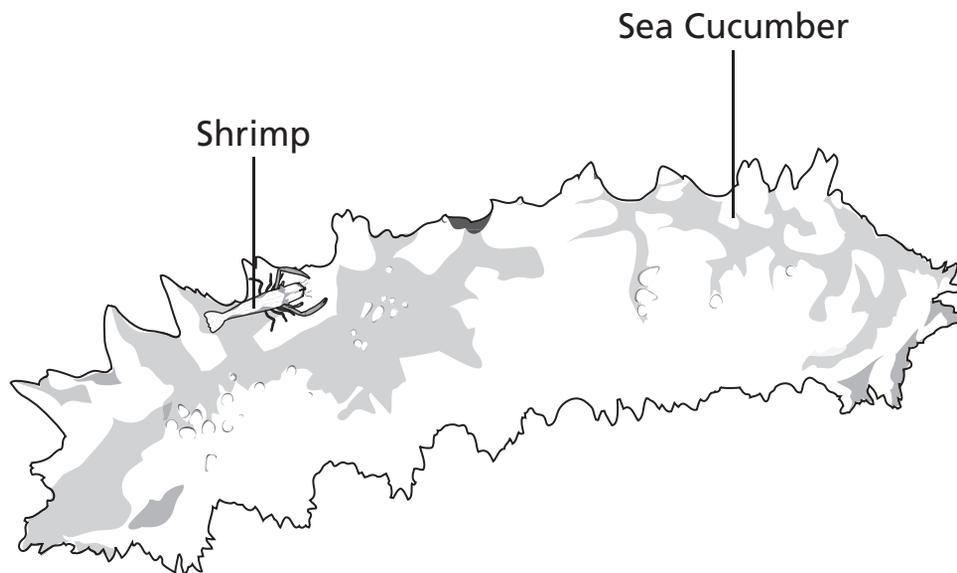
In this food web, which organism is a predator?

- A** Mouse
- B** Grass
- C** Rabbit
- D** Fox

66 Which trait does a child inherit from her parents?

- F** learning to swim
- G** favorite music
- H** style of clothing
- J** color of eyes

67 A certain species of shrimp can travel from one place to another by riding on a sea cucumber, as shown in the diagram below.



The sea cucumber is not harmed by the presence of the shrimp. Which term best describes this relationship?

- A** competitive
- B** mutualistic
- C** commensal
- D** parasitic

Go On ►

Science Answer Key

1	C
2	G
3	C
4	J
5	B
6	H
7	A
8	J
9	A
10	F
11	A
12	G
13	C
14	F
15	D
16	J
17	B
18	F

19	C
20	H
21	D
22	J
23	A
24	H
25	D
26	G
27	C
28	J
29	A
30	G
31	D
32	H
33	C
34	G
35	B
36	F

37	C
38	J
39	A
40	G
41	B
42	H
43	D
44	H
45	A
46	G
47	C
48	G
49	B
50	J
51	C
52	F
53	D
54	F

55	C
56	G
57	A
58	H
59	A
60	J
61	D
62	G
63	D
64	G
65	D
66	J
67	C
68	F
69	B



Tennessee Comprehensive Assessment Program

Achievement Test ~ Grade 5

Practice Test



TN00003388