

VIRGINIA STANDARDS OF LEARNING

Spring 2007 Released Test

# GRADE 5 SCIENCE

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Form S0117, CORE 1

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**Directions**

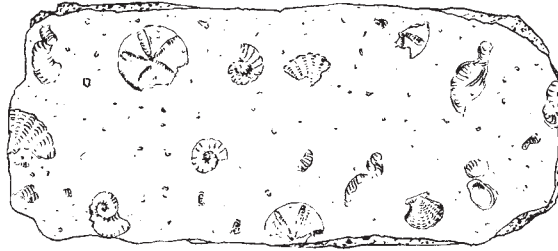
Read each question carefully and choose the best answer. Then mark the space on your answer document for the answer you have chosen.

**SAMPLE**

**When the Earth is seen from outer space, it looks mainly blue. This is because most of the Earth is covered with —**

- A** ice
- B** mountains
- C** oceans
- D** deserts

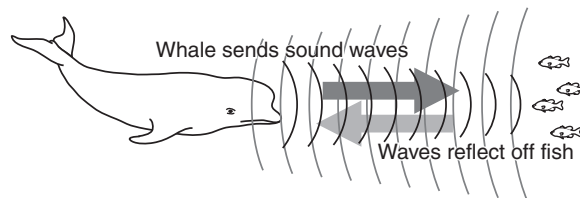
1



The picture shows a limestone building block. Which of these *best* shows that the limestone was formed from ocean sediments?

- A The position of the fossils
- B The number of fossils
- C The type of fossils
- D The size of the fossils

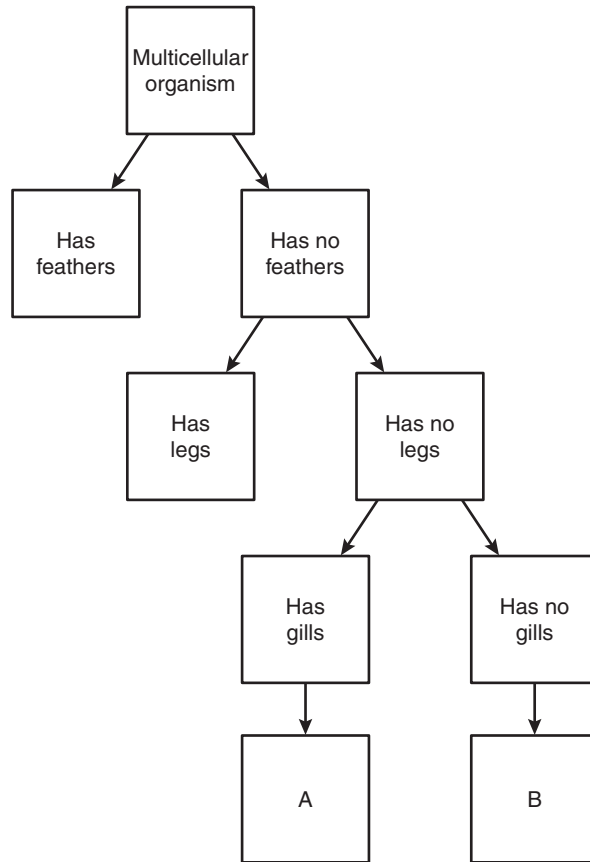
2



How is the use of sound waves helpful to this whale?

- F It helps the whale locate food.
- G It makes the water warmer.
- H It makes it easier to obtain oxygen.
- J It signals fish to move out of the whale's path.

3

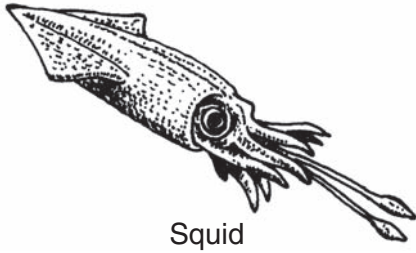


**Which of these belongs in square A of this flow chart?**

- A** Bird
- B** Toad
- C** Snake
- D** Fish

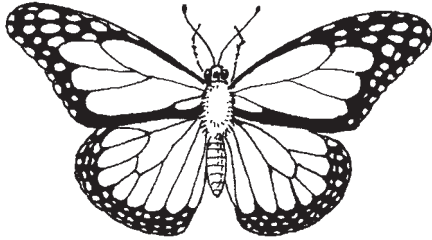
4 Which of these animals is *most* likely to form a fossil?

F



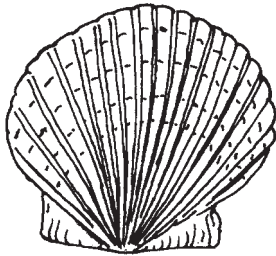
Squid

G



Butterfly

H



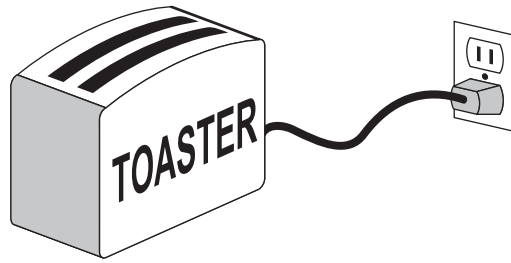
Scallop

J



Slug

5



**Which form of energy is being used by the toaster?**

- A** Chemical
- B** Electrical
- C** Solar
- D** Nuclear

**Student Examples  
of the Five Kingdoms**

1. Elephant
2. Worm
3. Mushroom
4. Sunflower
5. Amoeba

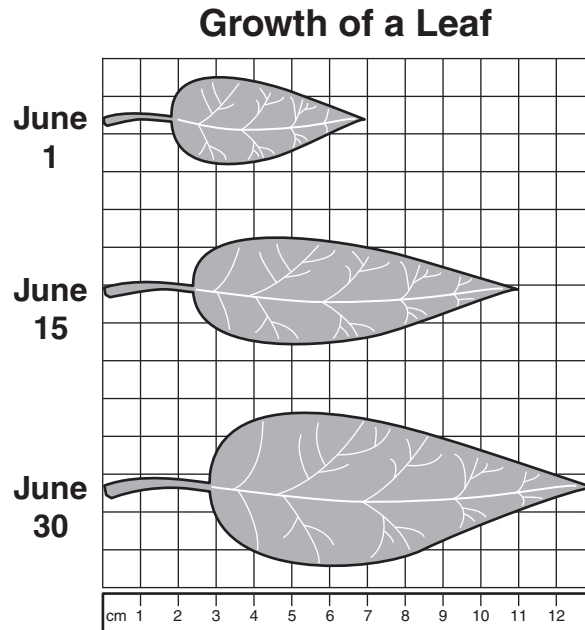
**A student made a list of examples of each of the five kingdoms. The list contains two examples from the same kingdom. Which one of these should be removed from the list?**

- F** Worm
- G** Mushroom
- H** Sunflower
- J** Amoeba

**7 Which of these animals is *most* likely to be found living and feeding on the forest floors of Virginia?**

- A** Bat
- B** Trout
- C** Deer mouse
- D** Golden eagle

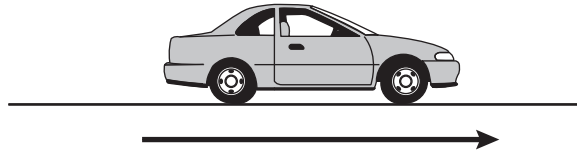




**Three measurements of the same leaf were taken during June. Based on the graph, how much did the leaf grow in length from June 1 to June 30?**

- F** 6 cm
- G** 7 cm
- H** 11 cm
- J** 13 cm

9

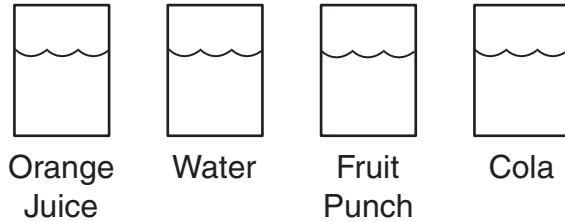


To describe this car's motion, a student should use its —

- A direction and speed
- B mass and volume
- C speed and color
- D volume and direction

10 Which object helps people understand what makes up white light?

- F Barometer
- G Prism
- H Microscope
- J Thermometer



**A student thinks that orange juice will freeze faster than any other substance. She fills identical containers with the same amount of different liquids, then places each in the freezer. She checks them every five minutes and discovers that the orange juice is the last one to freeze and the water is the first to freeze. Which should the student do next?**

- A** Change her results to match her original hypothesis.
- B** Repeat her investigation to see if her results are the same.
- C** Conclude that investigations can only be performed on water.
- D** Tell her friends that investigations at school work better than at home.

**12 Which of these *best* describes the relationship between Earth's layers?**

- F** The hottest layers are closest to the core.
- G** The more liquid layers are closest to the crust.
- H** The lightest layers are closest to the core.
- J** The more metallic layers are closest to the crust.

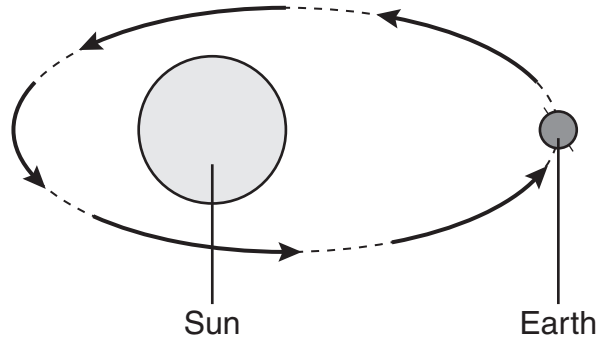
**Violet Plants**

<b>Parts</b>	<b>Function</b>
Roots	Anchor plant, absorb water
Stem	Support and transport
Leaves	Produce energy
Flowers	?

**The table lists the parts of a violet plant and their functions. What is the function of violet flowers?**

- A** Release oxygen
- B** Produce seeds
- C** Absorb sunlight
- D** Promote growth

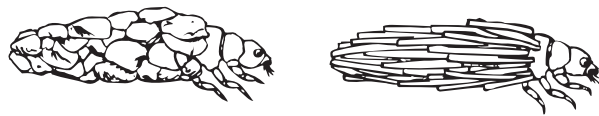
14



The motion of Earth around the Sun *most* affects the —

- F timing of tides
- G length of a month
- H cycle of the seasons
- J phases of the Moon

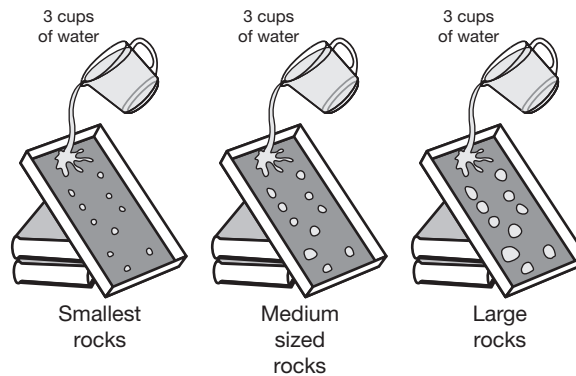
15



The picture shows some caddis fly larvae. These larvae cover themselves with small twigs and pebbles. What is the advantage of this behavior?

- A They can eat the twigs.
- B They are hidden from predators.
- C They can crawl on the bottom of creeks.
- D They are able to keep warm.

### Jackson's Experiment



**In an experiment, Jackson tested to see how the size of rocks affects the amount of dirt that washes away when water flows downhill. Which variable was manipulated?**

- F** Amount of water
- G** Slope of the hill
- H** Size of the rocks
- J** Type of dirt

**17 Which of these shows how frozen water changes as the temperature of the air increases?**

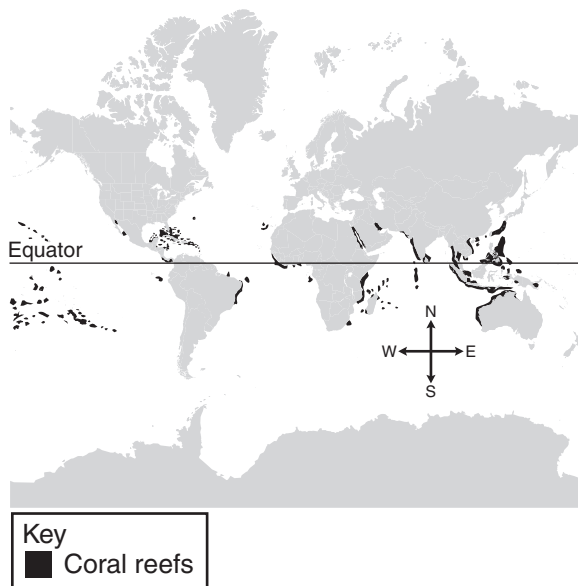
- A** Gas → liquid → solid
- B** Solid → gas → liquid
- C** Liquid → gas → solid
- D** Solid → liquid → gas

**18** A group of students was preparing an activity to determine whether certain materials will float or sink when placed on water. Before the experiment started, one student said, "I think the sponge will float." This statement was —

- F** a conclusion
- G** a fact
- H** an observation
- J** a prediction

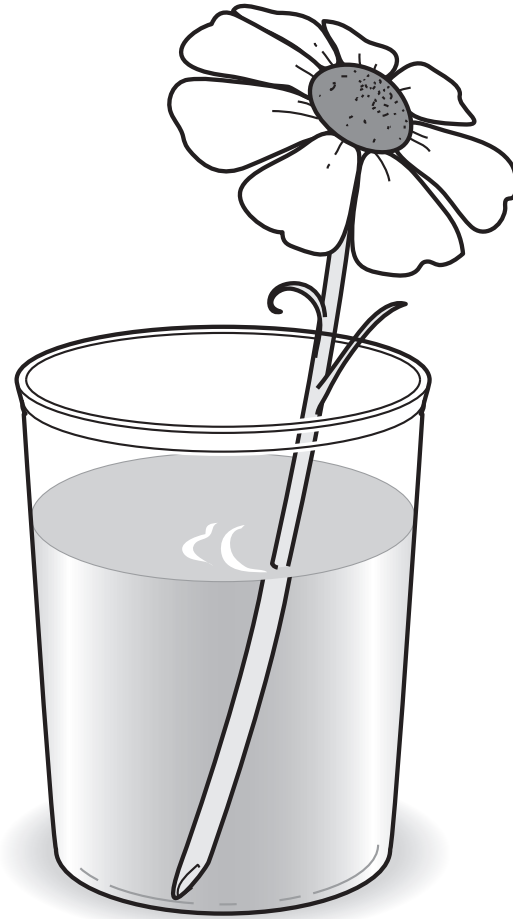
**19**

### Location of Coral Reefs



**Many species of ocean organisms live in coral reefs. The map shows that most coral reefs are found near the equator. What does the location of coral reefs suggest about coral organisms?**

- A** Corals need warm seawater to survive.
- B** Corals mostly live around volcanic islands.
- C** Ocean currents keep corals from migrating.
- D** Most ocean waters are too deep for corals.



**The flower's stem appears larger under water because the water —**

- F** absorbs light
- G** produces light
- H** repels light
- J** refracts light



**21 Which of the following animals is an invertebrate?**

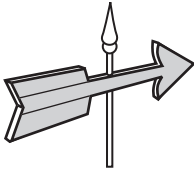
- A** Squirrel
- B** Sea gull
- C** Cricket
- D** Lizard

**22 Sandy is conducting an investigation to find out which food his dog likes best. Which is the manipulated variable in his investigation?**

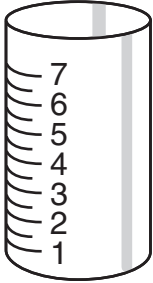
- F** The color of his dog's food dish
- G** The kind of food he gives his dog
- H** The amount of food he gives his dog
- J** The time of day he feeds his dog

23 Which of these instruments measures wind speed?

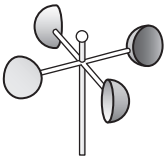
A



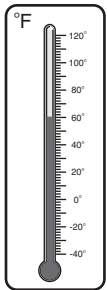
B

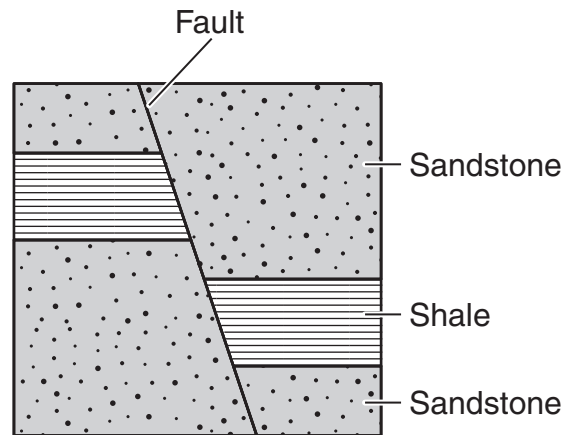


C



D

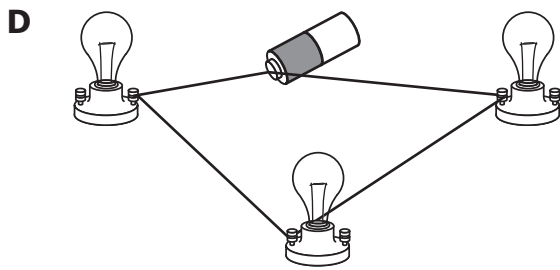
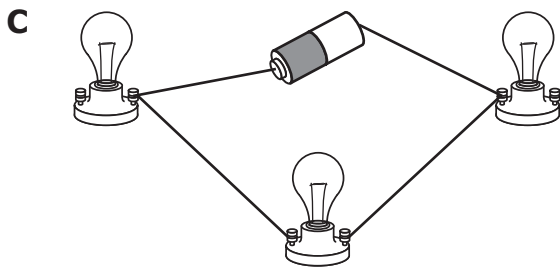
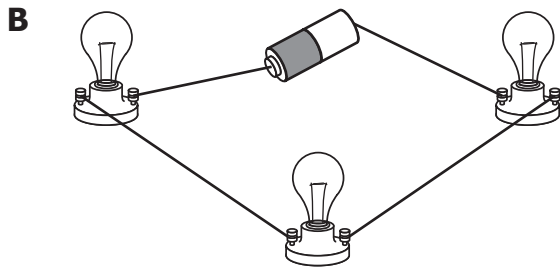
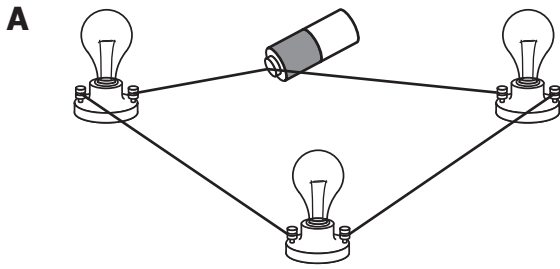




The shale layers in the drawing were broken and separated by movement along the fault. What also *most likely* occurred as these rock layers moved along the fault?

- F** Formation of deep caves
- G** Erosion of lower layers
- H** Volcanic eruption
- J** Earthquake

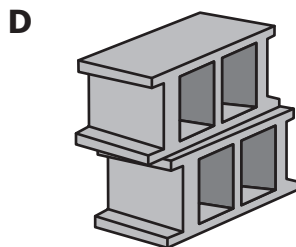
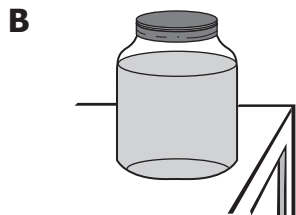
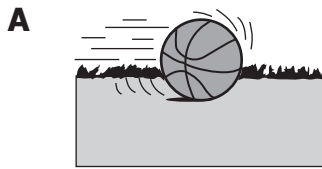
25 A class prepared some electric circuits using a battery, connecting wires, and three light bulbs. Which of these circuits can make the three bulbs light?



**26 What layer of Earth is located just below the crust?**

- F** Inner core
- G** Mantle
- H** Continental shelf
- J** Outer core

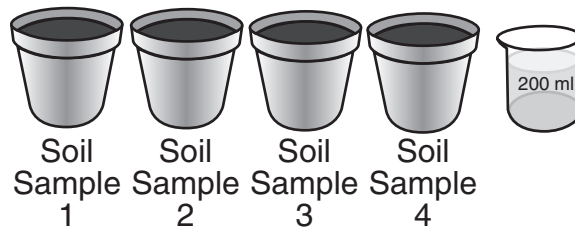
**27 Which of these has kinetic energy?**



**28 Which gas is given off by plants?**

- F** Hydrogen
- G** Nitrogen
- H** Oxygen
- J** Helium

**29**



**To find out which soil absorbs (holds) moisture *best*, each container shown must —**

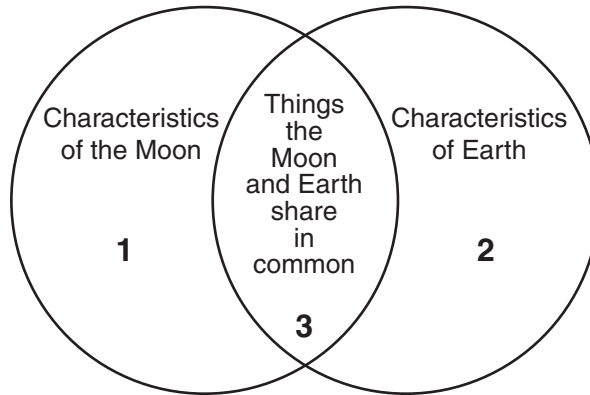
- A** be made of a different material
- B** have soil from the same place
- C** be tested by the same person
- D** contain the same amount of soil

**30 A student made observations of four rock samples. Which of these observations *most likely* describes a sedimentary rock?**

- F** Sample 1 has bands of light and dark crystals.
- G** Sample 2 has pink, gray, and white crystals grown together.
- H** Sample 3 is made up of one huge, pale pink crystal.
- J** Sample 4 is made up of layers of sand grains cemented together.

**31 The wind helps many plants reproduce by —**

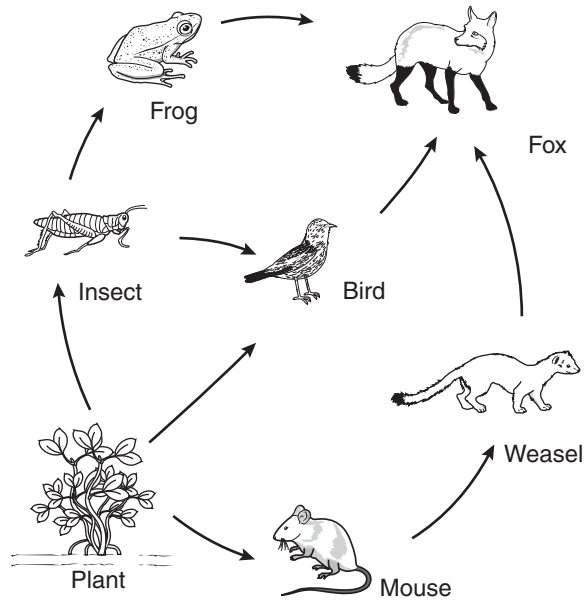
- A** cooling the plants
- B** giving the plants moisture
- C** spreading the plants' pollen
- D** strengthening the plants' root systems



Which of these would fit *best* in area 3 of this Venn diagram?

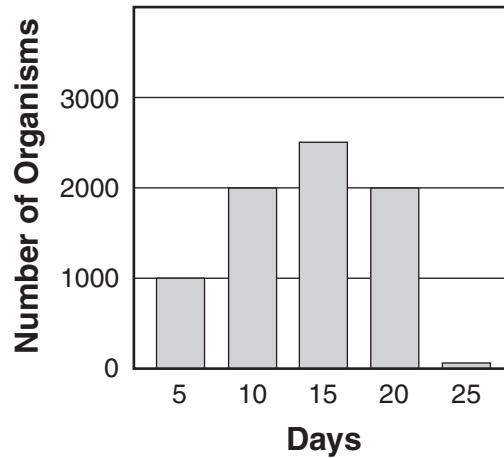
- F Rocky surface
- G Active volcanoes
- H Liquid water present
- J Oxygen in atmosphere





**Which of the following organisms provides energy for more than one organism in this food web?**

- A** Bird
- B** Plant
- C** Fox
- D** Mouse



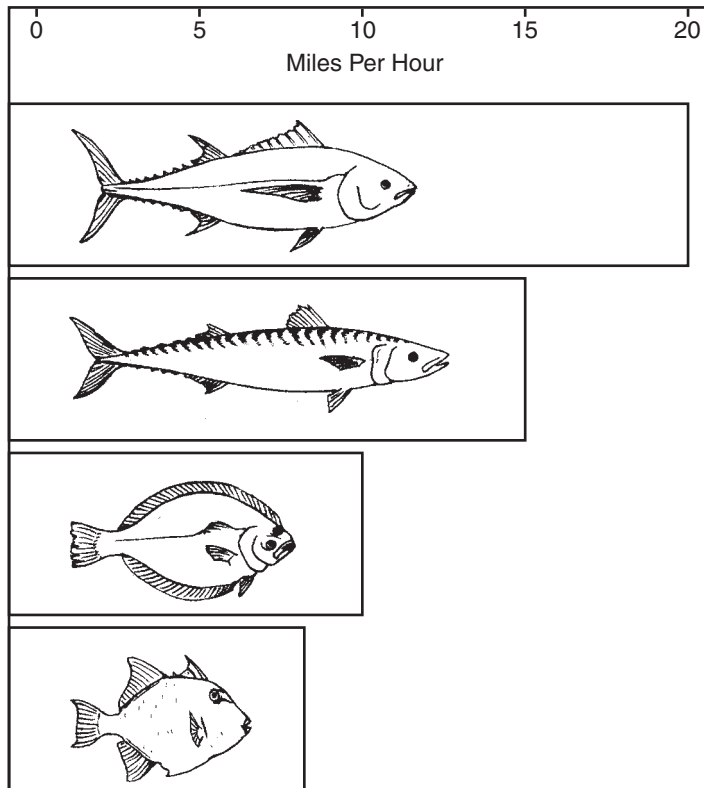
Jack grew some very small organisms in a jar of pond water. Each day, he counted the number of organisms he saw on a slide. Then he estimated how many organisms were in the jar. About how many organisms did he estimate were in the jar on day 15?

- F 1000
- G 1500
- H 2000
- J 2500

35 A shiny aluminum screen can be placed on the windshield of a parked car. This screen helps to keep the car cool because it —

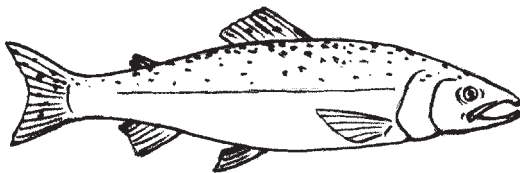
- A reflects the sunlight
- B absorbs heat
- C causes evaporation
- D conducts electricity

Relative Swimming Speed



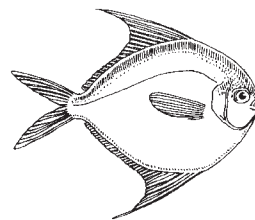
Which of these is probably the slowest fish?

F



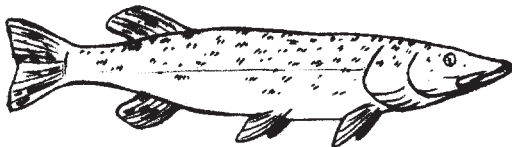
Salmon

H



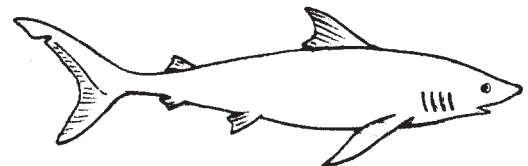
Butterfish

G



Pike

J



Shark

**37 Which of these substances conducts electricity the *best*?**

- A** Wood
- B** Brick
- C** Copper
- D** Plastic

**38 A student sees many plants around a pond. The student can determine which plants are nonvascular by —**

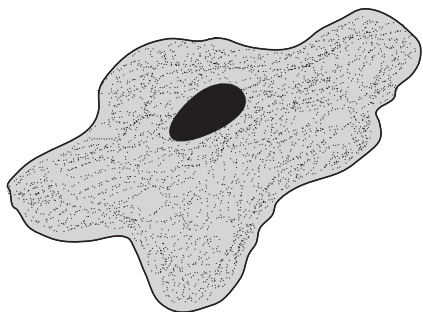
- F** observing if they lack true stems, roots, or leaves
- G** examining the plants for spores
- H** counting the number of leaves on each stalk
- J** noticing if the plants are near rocks

**39 Which of the following is an observation about grasshoppers that a science class could have made on their nature walk?**

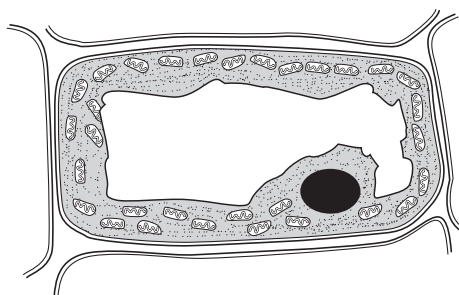
- A** The grasshoppers will live longest in a container filled with plants.
- B** The grasshoppers are green with long back legs and antennae.
- C** The grasshoppers will probably eat more grass than tree leaves.
- D** The grasshoppers all hatched from eggs laid the year before.

40 Which of these cells *most likely* came from a plant?

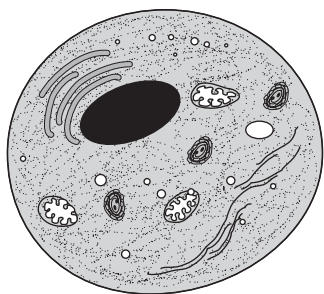
F



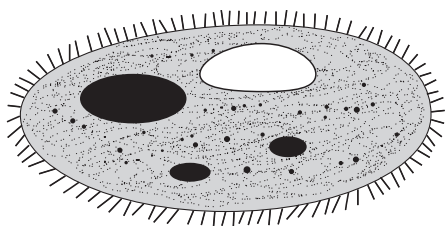
G



H



J



### Answer Key-5005-S0117

Test Sequence Number	Correct Answer	Reporting Category	Reporting Category Description
1	C	004	Earth/Space Systems and Cycles
2	F	002	Force, Motion, Energy, and Matter
3	D	001	Scientific Investigation
4	H	004	Earth/Space Systems and Cycles
5	B	002	Force, Motion, Energy, and Matter
6	F	003	Life Processes and Living Systems
7	C	003	Life Processes and Living Systems
8	F	001	Scientific Investigation
9	A	002	Force, Motion, Energy, and Matter
10	G	002	Force, Motion, Energy, and Matter
11	B	001	Scientific Investigation
12	F	004	Earth/Space Systems and Cycles
13	B	003	Life Processes and Living Systems
14	H	004	Earth/Space Systems and Cycles
15	B	003	Life Processes and Living Systems
16	H	001	Scientific Investigation
17	D	002	Force, Motion, Energy, and Matter
18	J	001	Scientific Investigation
19	A	004	Earth/Space Systems and Cycles
20	J	002	Force, Motion, Energy, and Matter
21	C	003	Life Processes and Living Systems
22	G	001	Scientific Investigation
23	C	004	Earth/Space Systems and Cycles
24	J	004	Earth/Space Systems and Cycles
25	B	002	Force, Motion, Energy, and Matter
26	G	004	Earth/Space Systems and Cycles
27	A	002	Force, Motion, Energy, and Matter
28	H	003	Life Processes and Living Systems
29	D	001	Scientific Investigation
30	J	004	Earth/Space Systems and Cycles
31	C	003	Life Processes and Living Systems
32	F	004	Earth/Space Systems and Cycles
33	B	003	Life Processes and Living Systems
34	J	001	Scientific Investigation
35	A	002	Force, Motion, Energy, and Matter
36	H	001	Scientific Investigation
37	C	002	Force, Motion, Energy, and Matter
38	F	003	Life Processes and Living Systems
39	B	001	Scientific Investigation
40	G	003	Life Processes and Living Systems

### Grade 5 Science, Core 1

If you get this many items correct:	Then your converted scale score is:
0	000
1	171
2	207
3	229
4	245
5	259
6	270
7	280
8	289
9	297
10	305
11	312
12	319
13	325
14	331
15	337
16	343
17	349
18	355
19	360
20	366
21	372
22	377
23	383
24	389
25	395
<b>26</b>	<b>401</b>
27	407
28	414
29	420
30	427
31	435
32	443
33	452
34	462
35	473
36	486
<b>37</b>	<b>503</b>
38	525
39	561
40	600