

VIRGINIA STANDARDS OF LEARNING

Spring 2006 Released Test

GRADE 5 SCIENCE

CORE 1

Property of the Virginia Department of Education

©2007 by the Commonwealth of Virginia, Department of Education, P.O. Box 2120, Richmond, Virginia 23218-2120. All rights reserved. Except as permitted by law, this material may not be reproduced or used in any form or by any means, electronic or mechanical, including photocopying or recording, or by any information storage or retrieval system, without written permission from the copyright owner. Commonwealth of Virginia public school educators may reproduce any portion of these released tests for noncommercial educational purposes without requesting permission. All others should direct their written requests to the Virginia Department of Education, Division of Assessment and Reporting, at the above address or by e-mail to darfax@doe.virginia.gov.

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



Porcupine

A porcupine has sharp quills that protect it from predators. Which of these is a behavioral adaptation of porcupines that makes the quills more effective for protection?

- A Using sharp teeth to cut twigs and leaves
- B Climbing to the very tops of trees to eat
- C Making an underground nest for young
- D Curling up into a ball when threatened

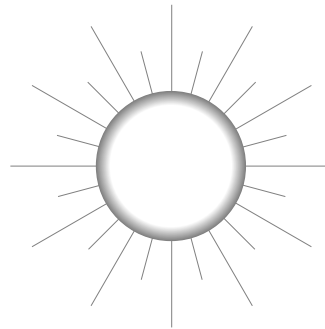
2 Which of these does *not* emit light waves?

F



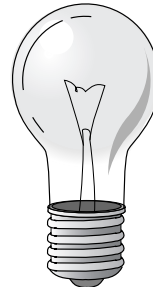
A campfire

G



The sun

H



A light bulb

J

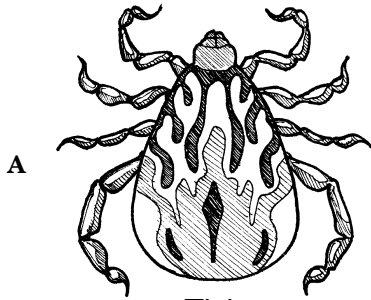


The moon

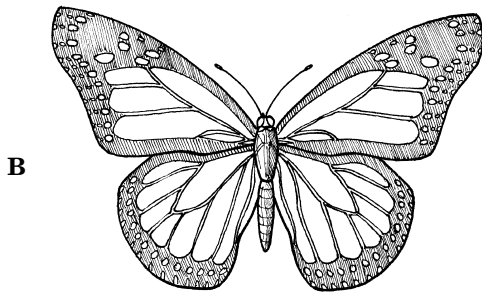
3 Insect and Arachnid Identification

Animal Type	Insect	Arachnid
Body parts	3	2
Pairs of legs	3	4
Antennae	Yes	No

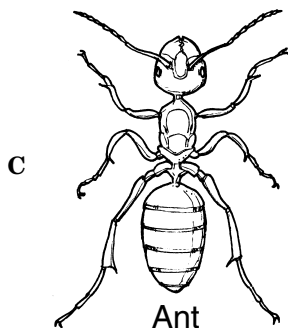
According to the table, which animal is an arachnid?



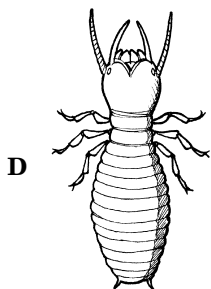
Tick



Butterfly

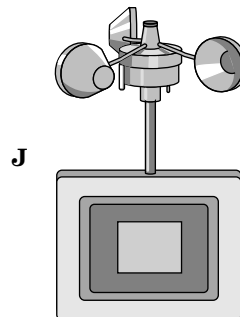
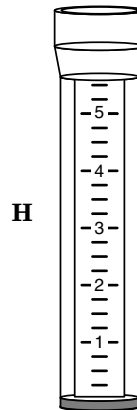
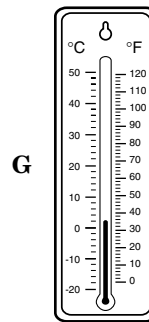
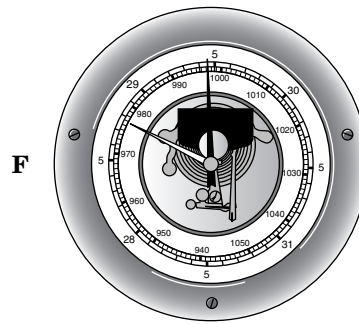


Ant

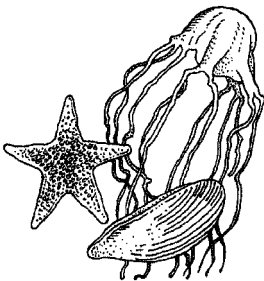
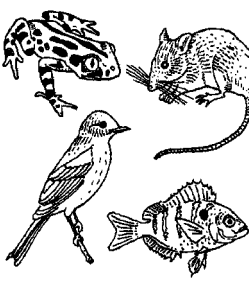


Termite

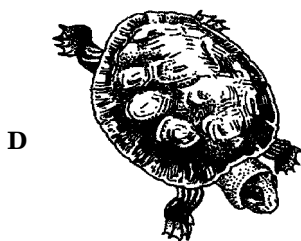
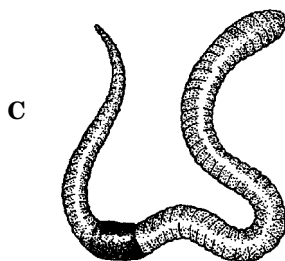
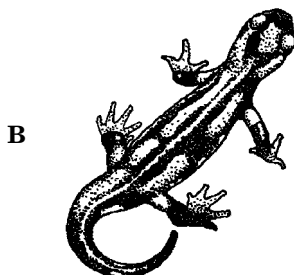
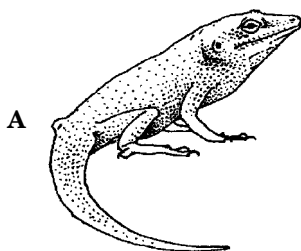
4 Which of these instruments would be used to measure wind speed?



5

Group 1	Group 2
	

Which animal belongs in group one?



6

Speed Of Sound

Material	Speed (meters per second)
Air	331
Fresh water	1,490
Salt water	1,531
Plastic	1,800
Silver	2,680
Wood	4,000
Glass	4,540

According to the table, sound travels fastest through matter that —

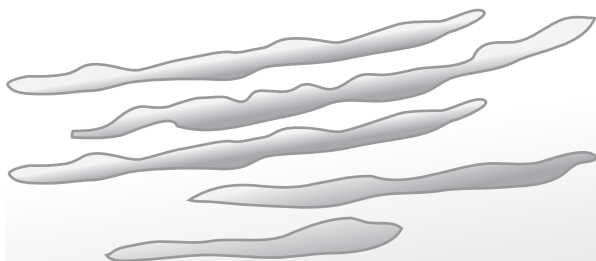
- F can evaporate easily
- G has no definite shape
- H has particles that are close together
- J has particles that move quickly

7 A kingdom is the largest classification of living things. What other organisms, besides plants and animals, make up the five kingdoms?

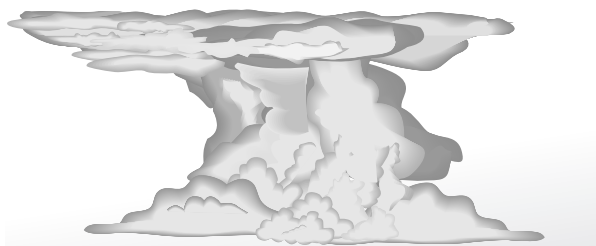
- A Fungi, protists, and monerans
- B Fungi, protists, and viruses
- C Monerans, protists, and viruses
- D Monerans, protists, and vertebrates

- 8 Different types of clouds are associated with different types of weather. Which of the following types of clouds would *most likely* be seen in the sky during a thunderstorm?

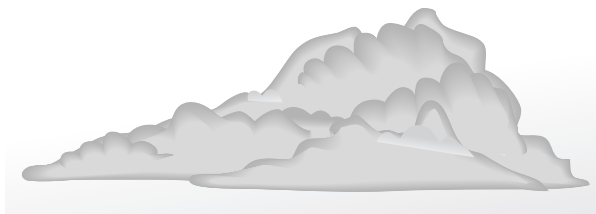
F



G



H



J



- 9 Sand dunes in the desert are caused by erosion from —

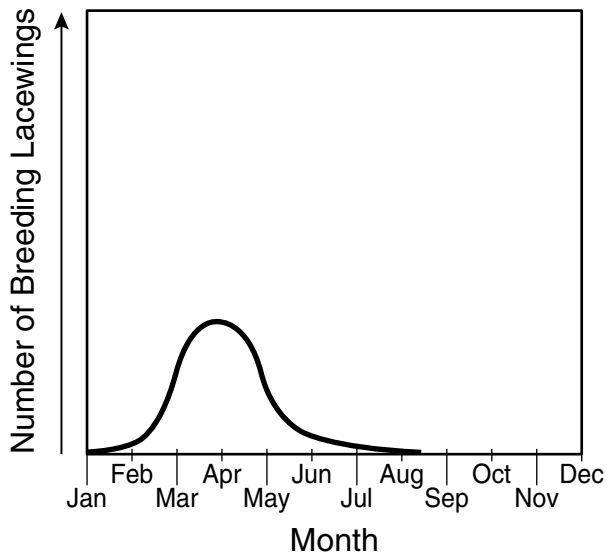
- A rain
- B glaciers
- C streams
- D wind

- 10 What do plants take in through their root systems?

- F Light
- G Water
- H Carbon dioxide
- J Oxygen

11

Lacewing Breeding Period



The lacewing is a common small insect. The graph shows the breeding period of one species of lacewing. During what season would most of these lacewings breed?

- A Winter
- B Summer
- C Spring
- D Fall

12 Who invented and patented the electric light bulb?

- F Benjamin Franklin
- G George Washington Carver
- H Orville and Wilbur Wright
- J Thomas Edison

13 Which of these is a mixture?

- A Salt
- B Water
- C Lemonade
- D Sugar

14

Characteristics of Types of Feeding

Carnivore	<ul style="list-style-type: none"> - Meat eaters - Live alone or in small groups - Preyed on only by other carnivores
Herbivore	<ul style="list-style-type: none"> - Strictly plant eaters - Can be large, hoofed mammals - Preyed on by carnivores
Omnivore	<ul style="list-style-type: none"> - Feed on both plants and animals - Can be both primary and secondary consumers in a food web

Based on the chart above, which of these animals would be considered a herbivore?

- F Grizzly bear
- G Deer
- H Lion
- J Human being

15 Which of these will change solid iron to a liquid?

- A Raising the air pressure
- B Increasing its temperature
- C Crushing the solid iron
- D Adding water to the iron

16 Lava cools to form —

- F igneous rock
- G sedimentary rock
- H metamorphic rock
- J sandstone

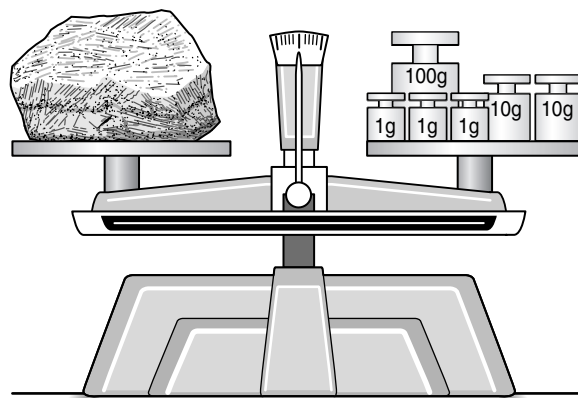
17 In a healthy ecosystem, many different species of animals may share the same habitat because they each have a different niche. An animal's niche is *best* described as —

- A the role it plays in its habitat
- B where it is located
- C its appearance
- D its ability to reproduce

18 Sound is a type of mechanical energy that is transmitted in the form of —

- F waves
- G light
- H heat
- J electrons

19



Which of these is the *most* accurate reading of the mass of the rock on the balance scale pictured?

- A 33 g
- B 120.3 g
- C 123 g
- D 303 g

20

Comparison of Venus and Earth

Planet	Diameter (km)	Mass Compared to Earth	Density	Highest Temperature at Surface
Venus	12,104	0.82	5.24	470°C
Earth	12,756	1.00	5.50	56°C

The table above compares some facts about Venus with some facts about the planet Earth. How are the two planets *most* different?

- F Diameter
- G Mass
- H Density
- J Surface temperature

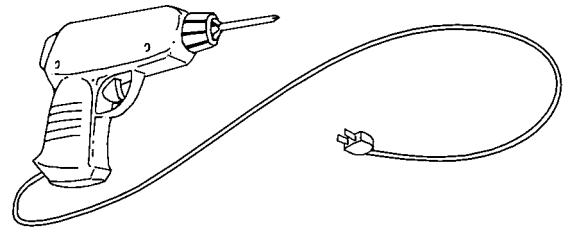
21 Barnacles and corals are two types of animals that live in the ocean. Both animals build a hard layer of calcium around their soft body parts. What is the *most likely* reason that they build these layers?

- A Prepare them for reproduction
- B Protect them from predators
- C Help them capture food
- D Keep them from drying out

22 A student set up an experiment to test how much bean plants will grow in soil with salt in it. The student grew 50 plants in one group and 50 plants in the other group. The only thing that can be different in the two groups is the amount of —

- F soil in each plant pot
- G water given to each plant
- H salt in the soil in each plant pot
- J fertilizer given to each plant

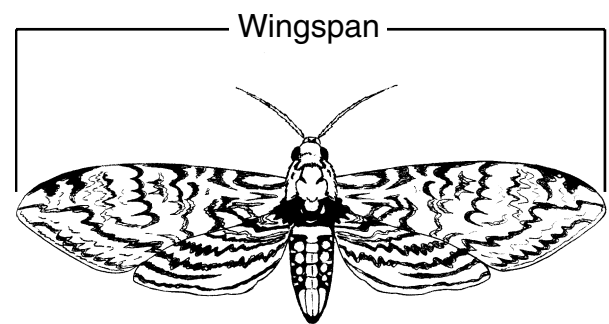
23



When in operation, this tool transforms electrical energy *mostly* into —

- A chemical energy
- B solar energy
- C sound energy
- D mechanical energy

24



The wingspan of this moth is *about* —

- F 7 mm
- G 8 mm
- H 7 cm
- J 8 cm

25 The main difference between ocean water and lake water is that ocean water contains —

- A** oxygen
- B** salt
- C** algae
- D** plants

26 Which of the following is a benefit that many flowering plants get from animals?

- F** Shelter from direct sunlight
- G** Seeds carried to new places
- H** Oxygen to use in photosynthesis
- J** Moisture to prevent wilting

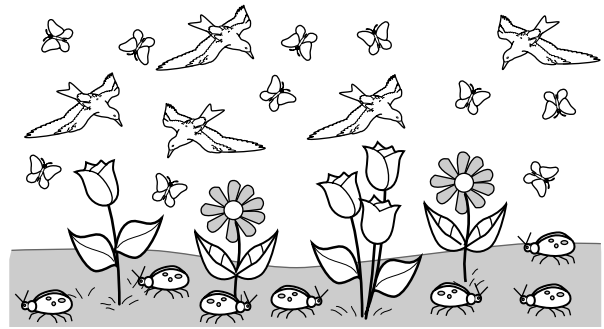
27 Which animal no longer lives on Earth?

- A Woolly mammoth
- B Buffalo
- C Sea walrus
- D Rhinoceros

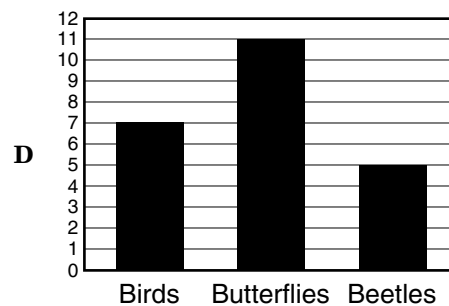
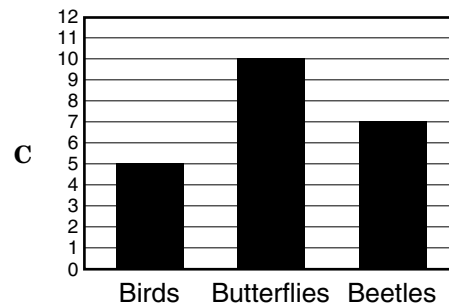
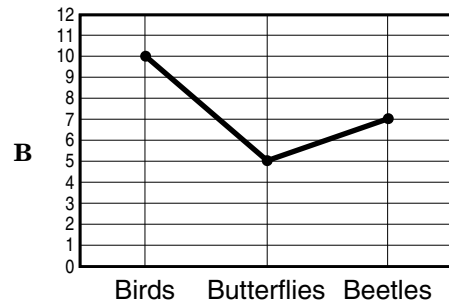
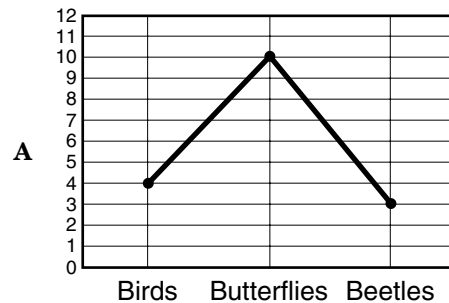
28 Water, ice, and steam are alike because they —

- F are the same compound
- G have the same shape
- H look the same
- J feel the same

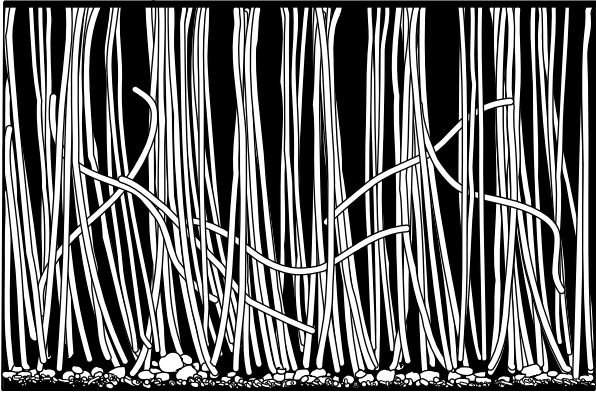
29



The picture shows some animals.
Which graph most accurately shows the number of animals in the picture?



30

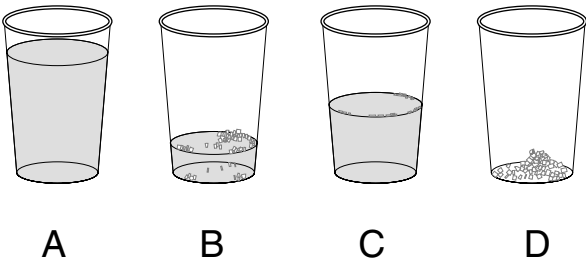


Baleen

Blue whales have no teeth. Instead, they have rows of bristled strands that look like a broom, called baleen, which filters their food. Which sea creatures are their *most* common food?

- F Seal and shark
- G Dolphin and porpoise
- H Turtle and penguin
- J Small fish and shrimp-sized krill

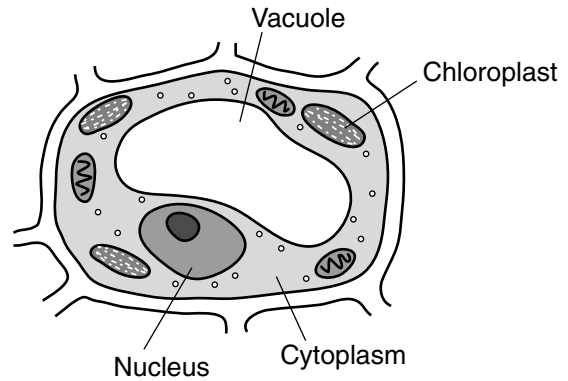
31



Which set of pictures shows what happens to a glass of salt water when it is left out on a counter for several weeks?

- A C → D → A → B
- B A → C → B → D
- C B → A → C → D
- D D → B → A → C

32



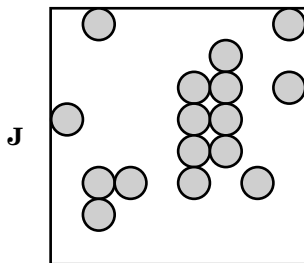
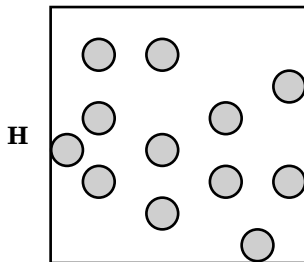
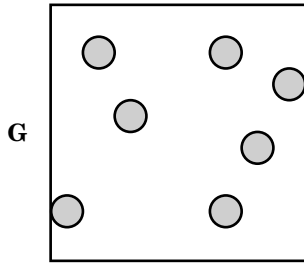
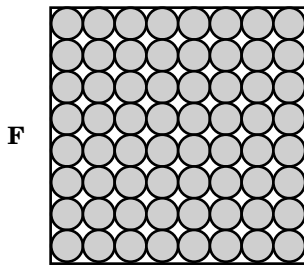
In which plant cell structure does photosynthesis occur?

- F Vacuole
- G Chloroplast
- H Cytoplasm
- J Nucleus

33 By August, a student noticed that the sunflowers outside his house were as tall as the back door of his house. About how tall were the sunflowers?

- A 0.2 meters
- B 2 meters
- C 20 meters
- D 200 meters

34 Which of the diagrams *best* shows the arrangement of molecules in a solid?



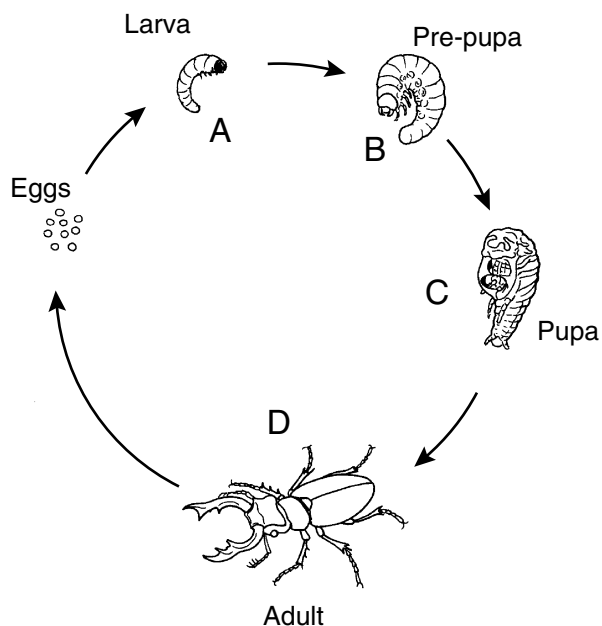
35 About 400 years ago, Galileo became the first person to record what the moon looked like through a telescope. He was able to tell that the moon had —

- A many craters
- B plants but no animals
- C active volcanoes
- D polar ice caps

36 Algae in the ocean provide much of Earth's —

- F oxygen
- G hydrogen
- H nitrogen
- J carbon dioxide

37

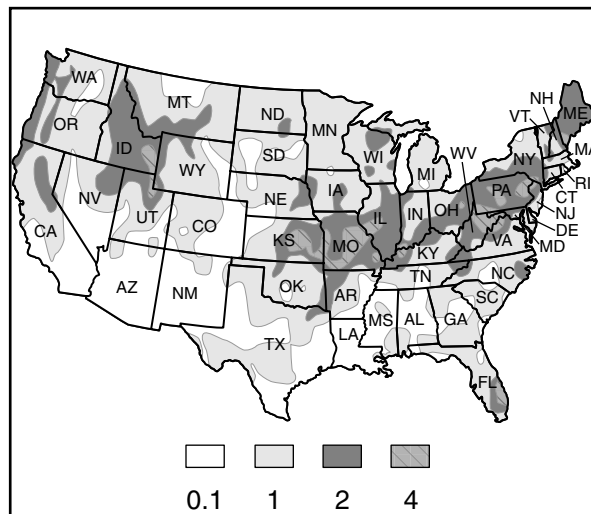


The picture shows the life cycle of a beetle. At which stage of the cycle are the eggs laid?

- A A
- B B
- C C
- D D

38

Total Precipitation (Inches) Apr 14 – 20, 2002



According to this precipitation map of the continental United States, which of the following states would be the *least likely* to have floods for this weather period?

- F Arizona (AZ)
- G Florida (FL)
- H Oregon (OR)
- J Virginia (VA)

39

Temperature Log

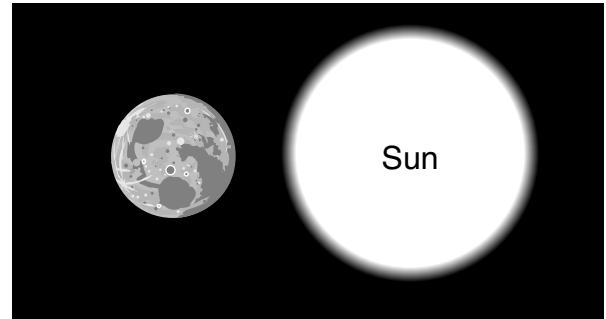
After Getting up in the Morning	After Reading a Book	After Math Class	After Playing Outside
36.8°C	37.1°C	32.2°C	37.7°C

A student used a thermometer to take his temperature at different times. He wrote down his measurements in a table. When did the student *most likely* record the temperature inaccurately?

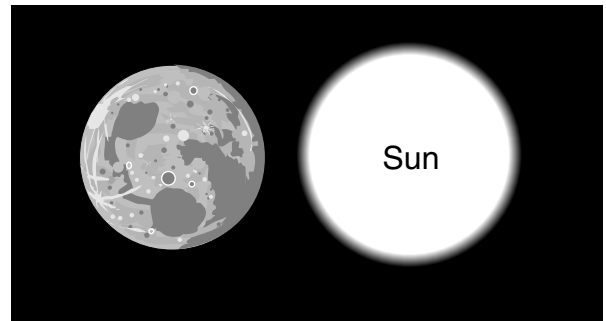
- A After getting up in the morning
- B After reading a book
- C After math class
- D After playing outside

- 40 Sometimes you can see the moon during the daytime. The moon looks the same size as the sun, but the moon is $\frac{1}{400}$ the size of the sun. Which of these best shows the size of the moon relative to the sun?

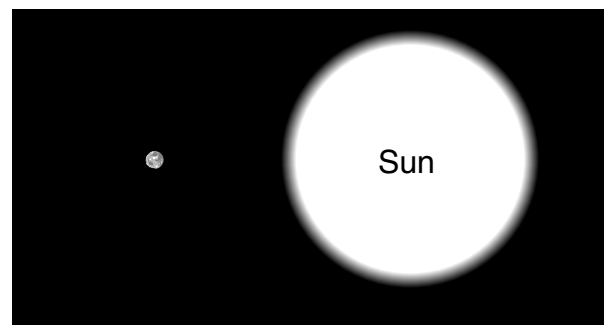
F



G



H



J

