

Maryland School Assessment

Science

2007 Public Release

Grade 5

Acknowledgements:

Amusement Park Physics: Free Fall

“Free Fall” from *Amusement Park Physics* at www.learner.org, Annenberg Media, ©1997.

Greenhouse Effect

“The Greenhouse Effect.” Courtesy: United States Environmental Protection Agency.

This page was
intentionally
left blank.

Session 2

Directions

Use the information below to answer Numbers 17 through 19.

The drawing below shows a field habitat.



17 Which of these organisms is a producer in the field habitat?

- A bird
- B butterfly
- C grass
- D mouse

18 What is the main source of energy in the field habitat?

- A the sun
- B the plants
- C the butterfly
- D the soil

19 Which of these changes would be most harmful to the organisms in the field habitat?

- A more birds flying to the field habitat
- B increase of rainfall in the field habitat
- C students walking through the field habitat
- D construction of a building near the field habitat

20 The motion of Earth is responsible for several celestial events.

Which of the following events is caused by Earth revolving around the sun?

- A the days in a year
- B the hours in a day
- C the changes in the atmosphere of Earth
- D the position of the constellations in space

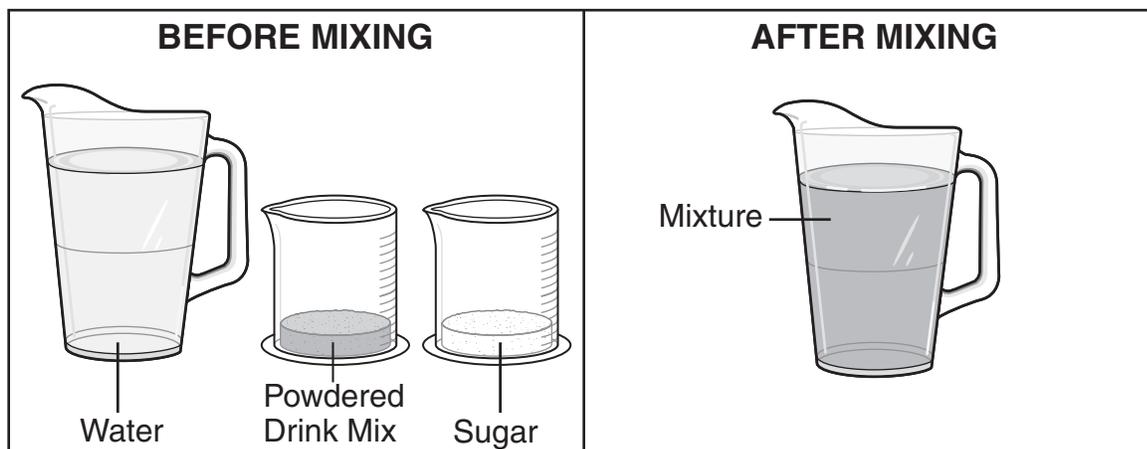
21 Scientists estimate that Maryland contains more than 850 million tons of coal.

Coal is most commonly used to produce

- A electricity
- B medicine
- C metals
- D water

This page was
intentionally
left blank.

- 22** A student mixes water, a powdered drink mix, and sugar to make a flavored drink.



Explain what happens when the materials are combined to make a mixture. In your explanation, be sure to include

- the properties before they are mixed
- how the properties were affected

Write your answer in the spaces provided.

Properties Before Mixing

Properties After Mixing

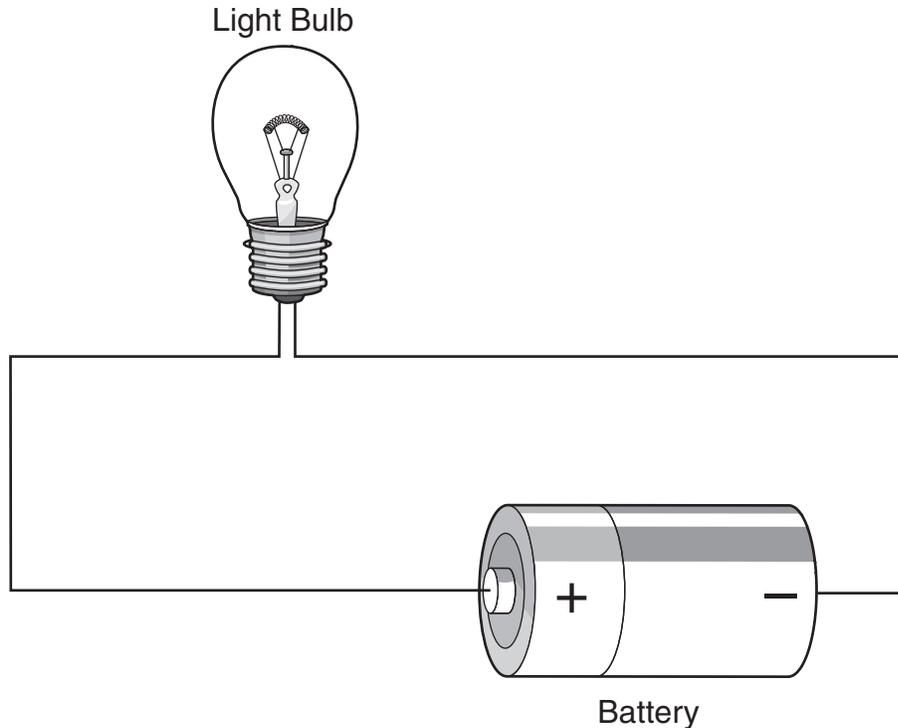
23

In 2004, Maryland recycled more than 35% of all of the waste the state produced.

Which of these benefits does recycling provide to Maryland?

- A** fewer wild animals
- B** decreased farm crops
- C** less trash sent to landfills
- D** decreased use of electricity

- 24 The diagram below shows a circuit made of a light bulb, a battery, and a wire.



Which statement best describes this circuit?

- A The circuit is closed because the battery is connected to two wires.
- B The circuit is closed because wires connect the light bulb to the battery.
- C The circuit is open because a wire is not correctly connected to the light bulb.
- D The circuit is open because there are not enough wires to connect all the parts.

Directions

Use the information below to answer Numbers 25 through 27.

The sun appears to rise in the east and set in the west each day. During the day, the sun is so bright that other objects in space are rarely visible. At night, other objects in space, such as planets and stars, are often visible.

The data table below contains information about the planets in our solar system.

PLANETS IN THE SOLAR SYSTEM

Planet	Distance from the Sun (millions of kilometers)	Time for Revolution (Earth units)	Diameter at Equator (kilometers)	Time for Rotation (Earth units)
Mercury	58	88 days	4,878	59 days
Venus	108	225 days	12,104	243 days
Earth	150	365 days	12,756	24 hours
Mars	228	687 days	6,794	25 hours
Jupiter	778	12 years	142,984	10 hours
Saturn	1,433	29 years	120,536	11 hours
Uranus	2,871	84 years	51,118	17 hours
Neptune	4,497	165 years	49,500	17 hours

25 Which of these changes on Earth would be likely if Earth were farther from the sun?

- A lower temperatures
- B higher temperatures
- C more hours in the day
- D fewer days in the year

26 Which of these actions is responsible for the sun appearing to rise and set?

- A Earth rotating on its axis
- B the sun rotating on its axis
- C Earth revolving around the sun
- D the sun revolving around Earth

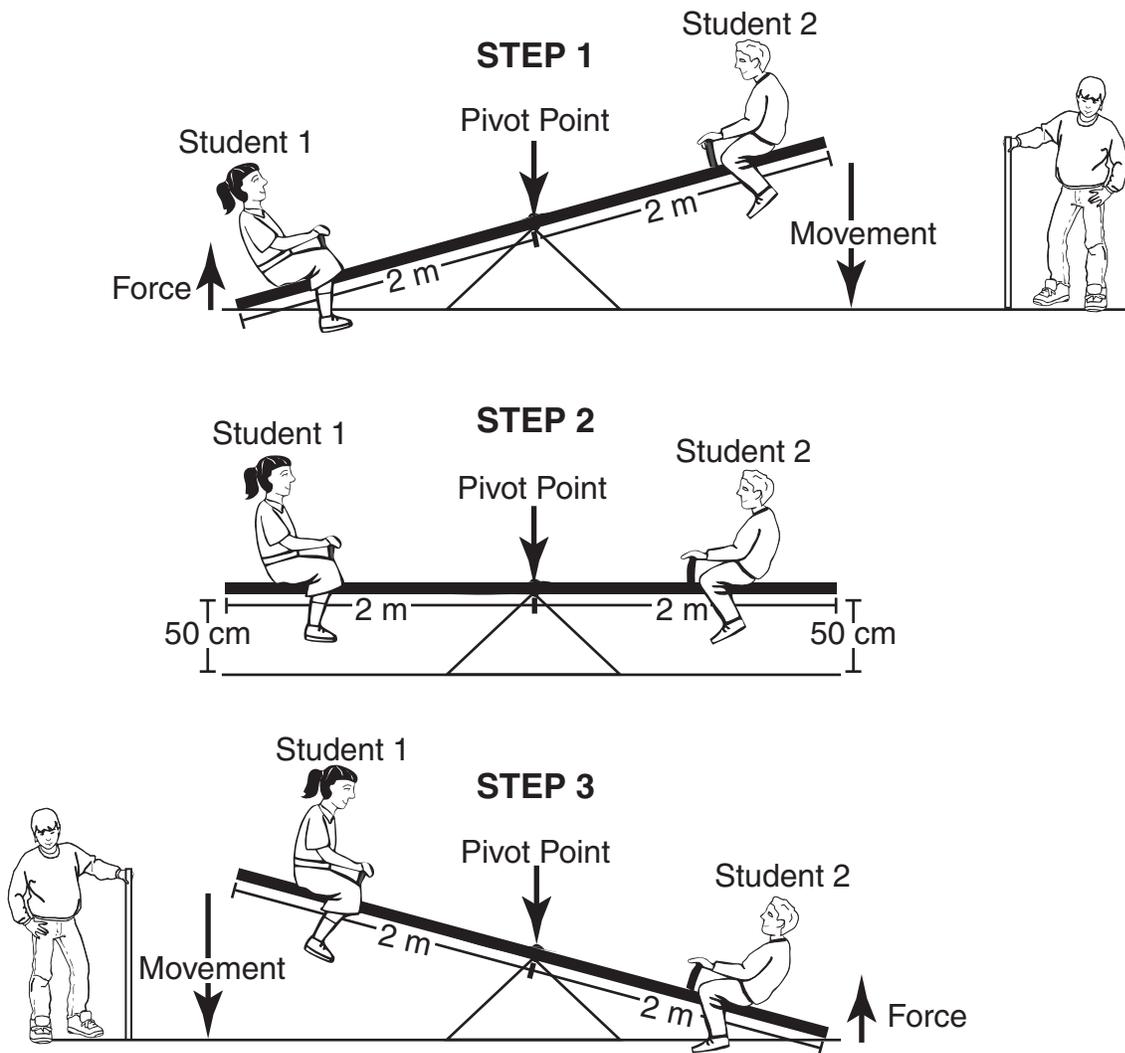
27 Why is one year on Earth 365 days and one year on Mercury 88 days?

- A Earth is larger than Mercury.
- B Earth is smaller than Mercury.
- C Earth is closer than Mercury to the sun.
- D Earth is farther than Mercury from the sun.

Directions

Use the information and pictures below to answer Numbers 28 through 30.

Two students with different masses investigated how their positions on a seesaw affected the movement of the seesaw. The students changed their horizontal positions on the seesaw and measured the highest point at the opposite end.



28 How might the students best show periodic motion using the seesaw?

- A by switching ends of the seesaw every 10 seconds
- B by balancing the ends of the seesaw for 10 seconds
- C by taking turns pushing off the ground every 10 seconds
- D by moving from the end to the center of the seesaw every 10 seconds

29 What is the primary force that Student 1 works against in order to lower Student 2?

- A friction
- B gravity
- C magnetism
- D pressure

30 How does friction affect the downward movement of Student 2 from Step 1 to Step 3?

- A Friction slows the movement.
- B Friction increases the downward force.
- C Friction changes the direction of gravity.
- D Friction increases the mass of the student.

- 31** A female dog is having puppies. She has black fur, brown eyes, and a curly tail. She can sit, bark, and roll over on command.

Which set of traits can the female dog's puppies inherit?

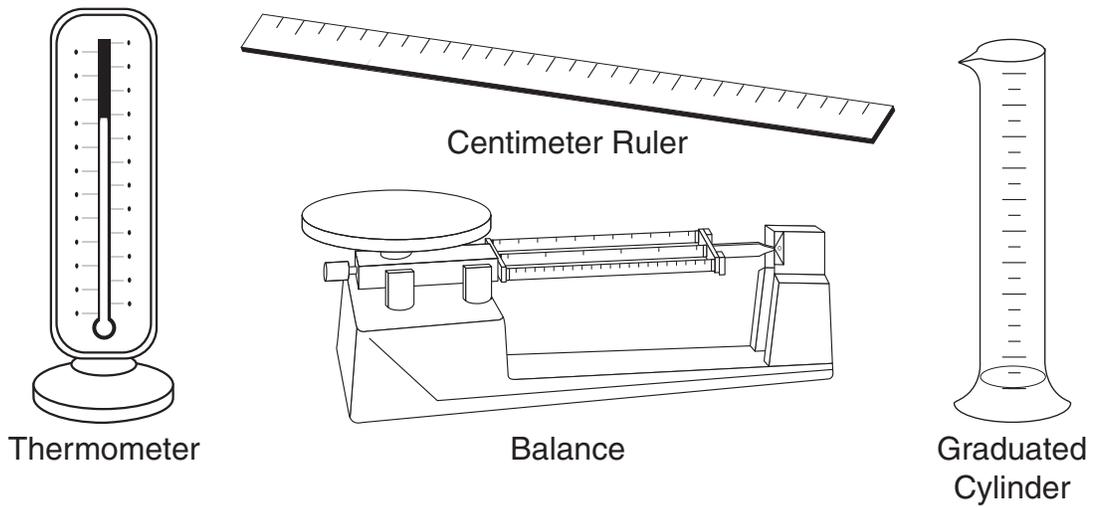
- A** brown eyes, black fur
- B** fur, roll over on command
- C** brown eyes, sit on command
- D** bark on command, curly tail

- 32** A container is filled with 250 milliliters of water. The total mass of the container and the water is 300 grams.

What is the total mass of the container and the water after being in a freezer for 2 hours?

- A** 50 grams
- B** 250 grams
- C** 300 grams
- D** 550 grams

33 A student is measuring the mass of a container of water.



Which of these tools should be used to measure the mass of the container of water?

- A** a balance
- B** a thermometer
- C** a centimeter ruler
- D** a graduated cylinder

34 The data table below shows the physical properties of four materials.

PROPERTIES OF MATERIALS

Materials	Hard	Flexible	Conducts Electricity	Attracted by Magnets
Copper	No	Yes	Yes	No
Glass	Yes	No	No	No
Iron	Yes	No	Yes	Yes
Wood	Yes	No	No	No

How are glass and copper similar?

- A** Neither is hard.
- B** Both are flexible.
- C** Both conduct electricity.
- D** Neither is attracted by magnets.