

Maryland School Assessment

**Science**

2008 Public Release

Grade 5

# Part 1



# Part 1

- 1** Chemical pesticides are sometimes sprayed on crops to kill insects that eat the crops. People have different viewpoints about the use of pesticides on crops.

What might be a concern about using pesticides on the crops?

- A** Will the food ripen?
- B** Will the food stay fresh?
- C** Will the food harm humans?
- D** Will the food harm bugs in the home?

- 2** Animals use resources in the environment to survive.

Which of the following resources does an animal use for energy?

- A** air
- B** food
- C** shelter
- D** water

# Part 1

## Directions

Use the passage below to answer Numbers 3 through 5.

### Hazy Summer Days and Air Pollution

Have you noticed that on some hot summer days the sky can look brownish instead of clear blue? Pollution causes poor air quality—and it can be bad for your health.

Scientists say that haze and smog are the problem.

“Smog comes from two words, smoke and fog,” said Alison Davis of the U.S. Environmental Protection Agency. Both haze and smog are caused largely by pollution from sources like power plants, factories, cars, and even wildfires.

Particle pollution is one type of pollution that affects air quality. The pollution is caused by tiny particles thrown into the air by factories and other sources. “If you took a grain of table salt. . . . That’s 40 times bigger than the biggest [tiny particle],” Davis said.

While something so small might seem harmless, Davis explained that the particles can get deep into your lungs and even affect your heart.

Air pollution from particles and other sources like ozone can also hurt trees and animals. Ozone is created when pollution from places like factories combines with sunlight.

The summer usually has the worst air quality, because there is more sunlight. Sunlight reacts with pollutants to create ozone. Ozone is helpful high in the atmosphere, because it helps block the sun’s harmful rays. But down closer to Earth, ozone can be harmful to people.

According to Davis, air quality in general has been improving in the United States. In 1970, the U.S. passed the Clean Air Act. “The act has helped make the air cleaner,” Davis said. In London, England, the air used to be so dark and polluted that cars would have to drive with their headlights on in the middle of the day!

# Part 1

- 3** Alison Davis states that air quality has been improving because of the Clean Air Act.

What evidence would help support her statement?

- A** a decrease in breathing disorders
- B** a decrease in the height of trees in forests
- C** an increase in the number of cars on the road
- D** an increase in the number of days with air that appears brown

- 4** Particle air pollution most likely increases when

- A** heavy rainfall occurs
- B** more factories are making products
- C** the number of green plants increases
- D** the number of small cars on roads decreases

# Part 1

- 5 The amount of harmful ozone in a city decreased during a year.

Explain why this decrease may have occurred. In your explanation, be sure to include

- how ozone pollution is produced
- specific reasons that may have caused a decrease in the ozone level



# Part 1

**6** Glaciers are slow-moving sheets of ice found on land.

What process occurs when glacial ice is heated to 5° Celsius?

- A** evaporation
- B** freezing
- C** melting
- D** precipitation



# Part 1

## Directions

Use the information below to answer Numbers 7 and 8.

Students placed 250 milliliters of water in three identical containers. Container 1 had a tightly sealed lid and was placed on a classroom counter. Container 2 had no lid and was placed on a classroom table. Container 3 had no lid and was placed on a table outside in the shade. The students measured the amount of water in each container at the end of each day for four days. Their results are shown in the data table below.

**VOLUME OF WATER IN THREE CONTAINERS**

Container	Starting Volume (mL)	End of Day 1 (mL)	End of Day 2 (mL)	End of Day 3 (mL)	End of Day 4 (mL)
1	250	250	250	250	248
2	250	242	219	203	188
3	250	219	172	125	63

# Part 1

**7** What question is this investigation designed to answer?

- A** How do water levels affect evaporation?
- B** Which container best holds evaporating water?
- C** Does evaporation of water affect the atmosphere?
- D** In which environment does water evaporate the fastest?

**8** Which process changes evaporated water into liquid water?

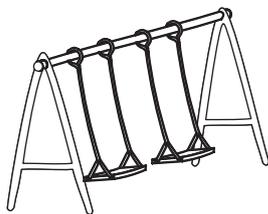
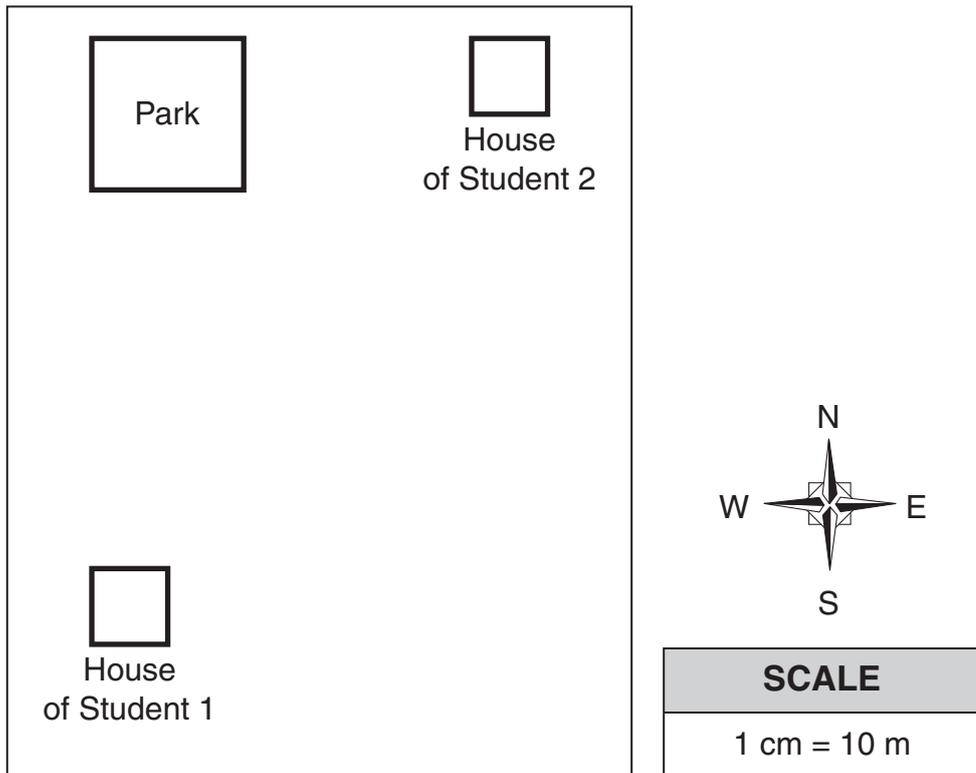
- A** competition
- B** condensation
- C** erosion
- D** precipitation

# Part 1

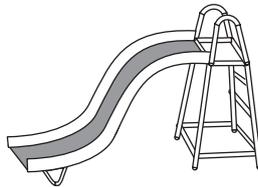
## Directions

Use the information below to answer Numbers 9 through 11.

Two students met at a local park. Student 1 lives farther from the park than does Student 2. Both students left their houses at 10:00 A.M. and arrived at the park at 10:20 A.M. While at the park, the students played on the swings, slide, and merry-go-round.



Swings



Slide



Merry-go-round

# Part 1

**9** Which of these statements best explains how the two students arrived at the park at the same time?

- A** Student 1 took a longer route.
- B** Student 1 walked faster than Student 2.
- C** Student 2 walked faster than Student 1.
- D** Student 2 took more short-cuts than Student 1.

**10** Each student has a different mass, yet they both reached the same height while swinging.

Which of these statements explains why the students reached the same height while swinging?

- A** The students had the same speed while on the swing.
- B** The students used different amounts of force while swinging.
- C** The students were on the swing for the same amount of time.
- D** The students used the same amounts of force while swinging.

**11** Both students played on the slide. Student 1 wore shorts, and Student 2 wore long pants.

Which of these explanations best identifies why Student 2 moved down the slide more smoothly than Student 1?

- A** less gravity
- B** less friction
- C** more weight
- D** more acceleration



## Acknowledgements

“Hazy Summer Days and Air Pollution” by Sarah Ives, National Geographic Kids News. July 27, 2004 ([http://news.nationalgeographic.com/kids/2004/07/Hazy summer.html](http://news.nationalgeographic.com/kids/2004/07/Hazy%20summer.html))

“Glaciers and People” by Spencer Christian and Antonia Felix. From WHAT MAKES THE GRAND CANYON GRAND? THE WORLD'S MOST AWE-INSPIRING NATURAL WONDERS by Spencer Christian and Antonia Felix. Copyright © 1998 by Spencer Christian and Antonia Felix. Reprinted with permission of John Wiley & Sons, Inc.