



**NEW ENGLAND
COMMON ASSESSMENT PROGRAM**

**Released Items
2011**

**Grade 8
Science**

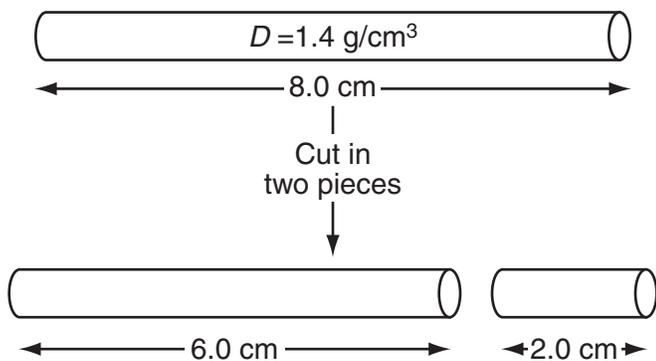
Science

- 1 The table below shows characteristics of a solid, cylindrical rod.

Characteristics of Cylindrical Rod

Mass (g)	Volume (cm ³)	Density (g/cm ³)
14.0	10.0	1.4

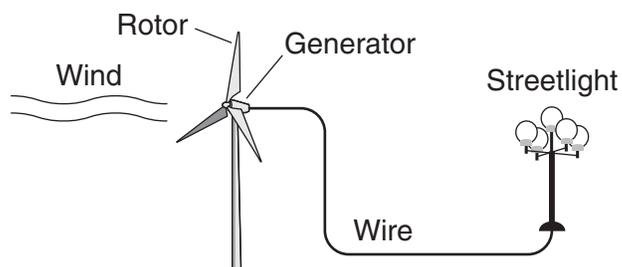
The rod is cut into two pieces, as shown in the diagram below.



What is the density of the piece of the rod that is 2.0 cm long?

- A. 0.7 g/cm^3
- B. 1.4 g/cm^3
- C. 2.0 g/cm^3
- D. 2.8 g/cm^3

- 2 The diagram below shows a windmill system.



Which part of the system directly changes mechanical energy to electrical energy?

- A. rotor
- B. generator
- C. wire
- D. streetlight

- 3 The table below shows the distances and times traveled by four cars moving at constant speeds.

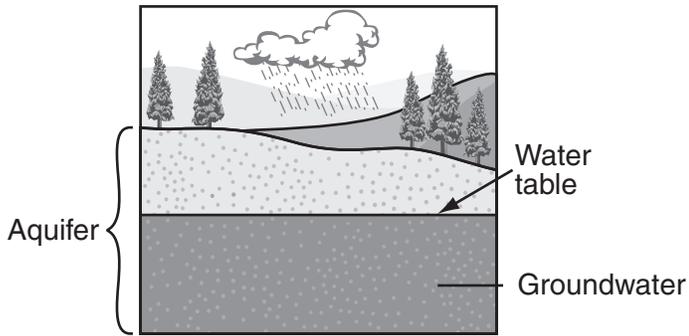
Distances and Times Traveled by Four Cars

Car	Distance (km)	Time (hr)
W	100	5
X	90	3
Y	80	2
Z	50	1

Which car has the greatest average speed?

- A. Car W
- B. Car X
- C. Car Y
- D. Car Z

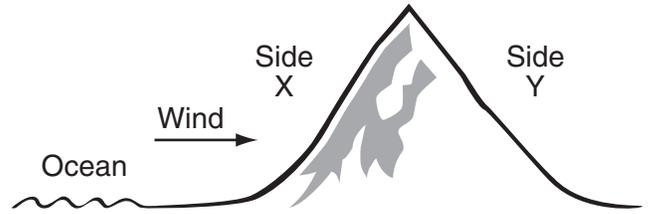
4 The diagram below shows an aquifer.



Which statement is **best** supported by the information shown in the diagram?

- A. The water table will rise if there is an increase in rain.
- B. The water table will fall if the slope of the land changes.
- C. The amount of groundwater in the aquifer will decrease if more trees grow.
- D. The amount of groundwater in the aquifer will remain constant if there is a decrease in rain.

5 The diagram below shows wind approaching a mountain from an ocean.



Which phrase describes the environment on Side Y of the mountain?

- A. very cold because the mountain has a high altitude
- B. very warm because the mountain absorbs the Sun's heat
- C. very dry because moisture is lost when rain falls on Side X
- D. very wet because clouds form on Side X and move to Side Y

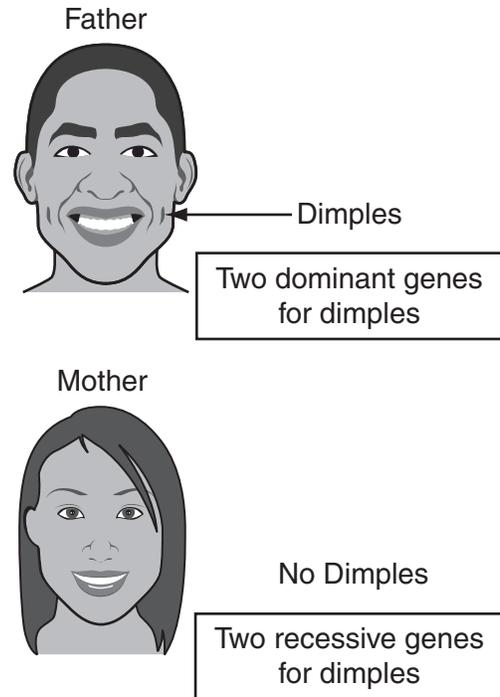
6 Why are different phases of the Moon visible from Earth?

- A. The Moon revolves around the Sun and absorbs the Sun's light.
- B. Earth revolves around the Sun and absorbs the Sun's light.
- C. The Moon revolves around Earth and reflects the Sun's light.
- D. Earth revolves around the Sun and reflects the Sun's light.

- 7 Which parts of the human body work together to defend it from harmful bacteria?
- A. skin cells, capillaries, ribs
 - B. red blood cells, skin cells, lungs
 - C. white blood cells, skin cells, nose
 - D. muscle cells, bone marrow, spleen

- 8 Caffeine is a stimulant. Which side effect is a person **most likely** to experience after consuming caffeine?
- A. increased heart rate
 - B. decreased breathing rate
 - C. decreased blood pressure
 - D. increased fine-motor coordination

- 9 The pictures below show a father with dimples and a mother without dimples.



The parents have two sons and two daughters. Based on the parents' genes, which children have dimples?

- A. only the sons
- B. only the daughters
- C. all of the children
- D. none of the children

- 10 An ecosystem in Yellowstone National Park includes populations of coyotes, elk, deer, foxes, gray wolves, hawks, rabbits, mice, and grasses. The table below lists these populations and their diets.

**Yellowstone National
Park Ecosystem**

Population	Diet
Coyotes	Deer, elk, foxes, mice, rabbits
Elk	Grasses
Deer	Grasses
Foxes	Mice, rabbits
Gray wolves	Deer, elk, foxes, mice, rabbits
Hawks	Mice, rabbits
Rabbits and mice	Grasses
Grasses	_____

- a. Draw a food web that includes all of the populations listed in the table.
- b. Suppose that gray wolves are eliminated from Yellowstone National Park. Predict how the change in the wolf population would initially affect **one** of the consumers in your food web. Use evidence to justify your prediction.