



**NEW ENGLAND
COMMON ASSESSMENT PROGRAM**

**Released Items
2016**

**Grade 4
Science**

Science

- 1 A student wants to find out how adding salt affects the time it takes water to freeze. The table below gives the results of two trials.

Effects of Salt on Freezing

Container (50 mL water at 25°C)	Amount of Salt Added	Time (Trial 1)	Time (Trial 2)
Container X	0 g	45 min	43 min
Container Y	5 g	70 min	75 min
Container Z	10 g	120 min	118 min

How does adding salt affect how water freezes?

- A. Adding salt makes water form thick ice.
- B. Adding salt speeds up freezing.
- C. Adding salt slows down freezing.
- D. Adding salt makes water form small ice cubes.

- 2 A student has a ball of clay that weighs 3000 grams. She shapes the clay into three equal-sized cubes and weighs the clay again.

Which statement describes the three cubes of clay?

- A. Together, the cubes weigh 2000 grams.
 - B. Together, the cubes weigh 6000 grams.
 - C. Each cube of clay weighs 1000 grams.
 - D. Each cube of clay weighs 3000 grams.
- 3 A person makes pancakes in a frying pan. He slides the pancakes onto a plate and puts some butter on top of the pancakes. The butter soon melts.

In which direction does the heat flow so that the butter melts?

- A. from the butter to the pancakes
- B. from the pancakes to the butter
- C. from the plate to the butter
- D. from the butter to the frying pan

- 4 The table below shows the characteristics of four minerals.

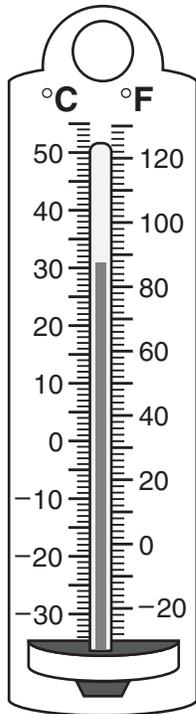
Characteristics of Minerals

Mineral	Hard or Soft	Shiny or Dull	Weight
W	Soft	Shiny	4 g
X	Hard	Shiny	6 g
Y	Hard	Dull	3 g
Z	Hard	Dull	8 g

Which minerals are **most likely** the same kind?

- A. Minerals W and X
- B. Minerals X and Y
- C. Minerals Y and Z
- D. Minerals W and Z

- 5 The thermometer shown below gives the temperature on Day X. The chart next to the thermometer describes the types of days to expect at different temperatures.



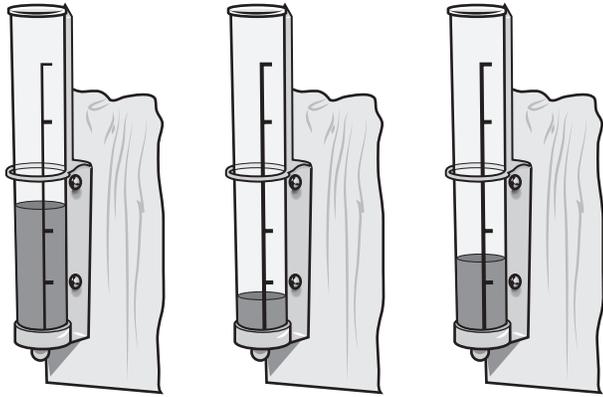
**Day X
Temperature**

Temperature	Description
40°C/104°F	Heat wave
30°C/86°F	Good day for a swim
20°C/68°F	Nice day
10°C/50°F	A bit chilly—wear a light jacket
0°C/32°F	Time for a coat (water freezes)

Based on the temperature shown on the thermometer, which phrase from the chart describes Day X?

- A. “Heat wave”
- B. “Good day for a swim”
- C. “Nice day”
- D. “Time for a coat”

- 6 Rain gauges are set up outside three schools during the month of April. At the end of the month, the data are collected, as shown in the diagram below.



Front Street School

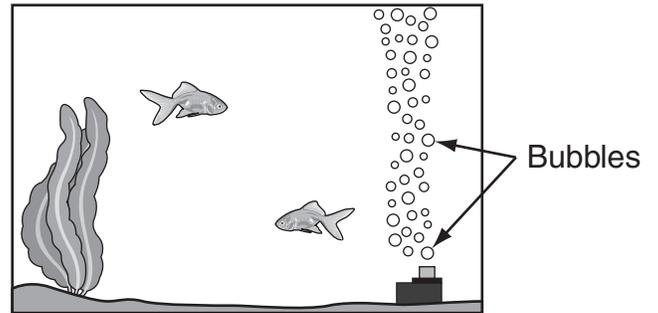
Bartlett School

Country Day School

The data collected from the rain gauges **best** supports which conclusion?

- A. More rain fell at Bartlett School than at Front Street School.
- B. Less rain fell at Country Day School than at Bartlett School.
- C. More rain fell at Country Day School than at Bartlett School.
- D. Less rain fell at Front Street School than at Bartlett School and Country Day School together.

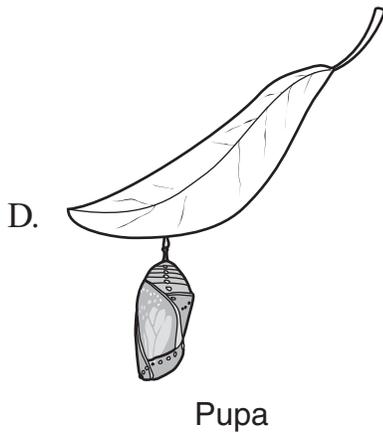
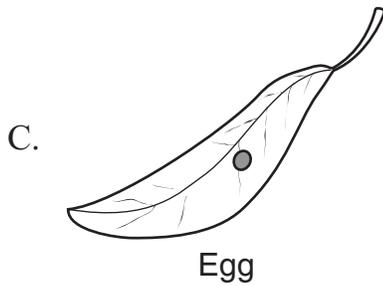
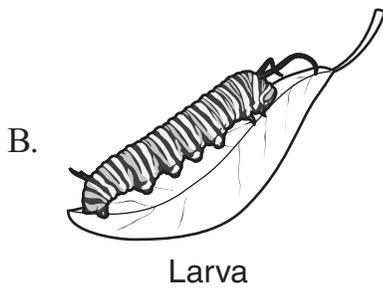
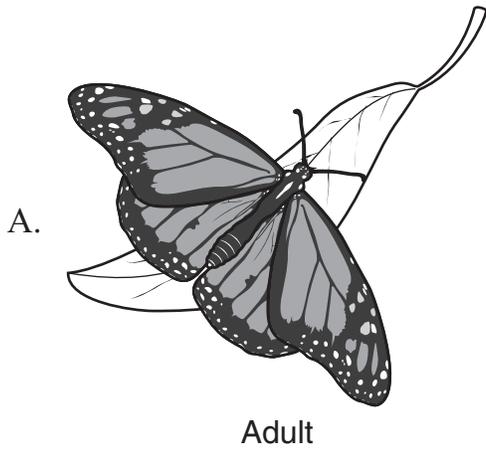
- 7 Many small fish tanks have a pump that blows bubbles into the water, as shown below.



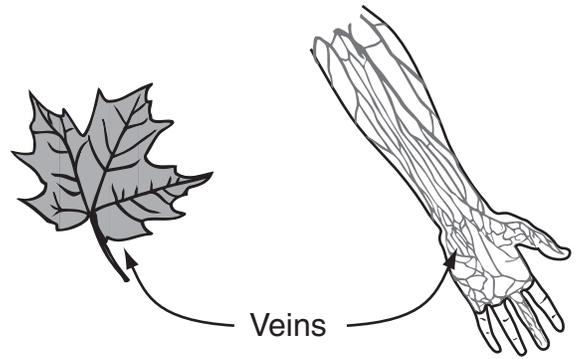
The bubbles help the fish survive. How do the bubbles help the fish survive?

- A. by adding food to the water
- B. by adding air to the water
- C. by keeping the water clean
- D. by keeping the water warm

8 During which stage in the life cycle of a butterfly does it eat plant leaves and grow the most?



9 Both plants and humans have veins, as shown in the diagram below.



Veins do almost the same job in plants and in humans. What job do veins do?

- A. give support
- B. break down food
- C. sense heat
- D. transport materials

- 10 Marc and John are alike in many ways. They are taller than anyone else in the class. They both enjoy playing soccer and reading. They both have curly black hair and blue eyes. They both play instruments in a band.
- a. Identify **three** characteristics that show that Marc and John might have the same birth parents. Explain your reasoning.

 - b. Identify **three** characteristics that Marc and John learned. Choose **one** and explain what a person has to do to learn this characteristic.