New England Common Assessment Program

Released Items 2011

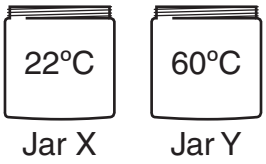
Grade 4 Science

Science

1 A student wants to stay cool on a sunny summer day. What should the student wear?

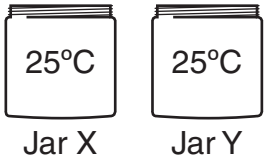
A. a black shirt to absorb the sunlight
B. a black shirt to reflect the sunlight
C. a white shirt to absorb the sunlight
D. a white shirt to reflect the sunlight

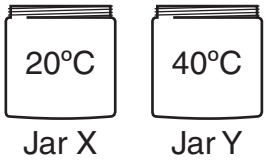
2 A student has two jars holding the same amount of water. The temperature of the water in each jar is shown in the pictures below.

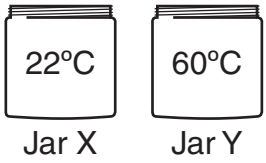


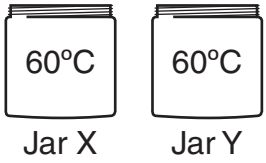
The jars of water sit in a room overnight. The temperature in the room is 25°C. The next day, the student measures the temperature of the water in each jar.

What are the **most likely** water temperatures?

A.


B.


C.


D.


❸ A student measures how far a toy car travels down a ramp. The student changes the height of the ramp for each trial. The table below shows the results.

Toy Car Data

Trial	Height of Ramp	Distance
1	10 cm	2 m
2	15 cm	5 m
3	20 cm	9 m
4	25 cm	14 m
5	30 cm	?

The pattern in the data helps the student predict the distance the car will travel. Based on the pattern, what distance will the car travel during Trial 5?

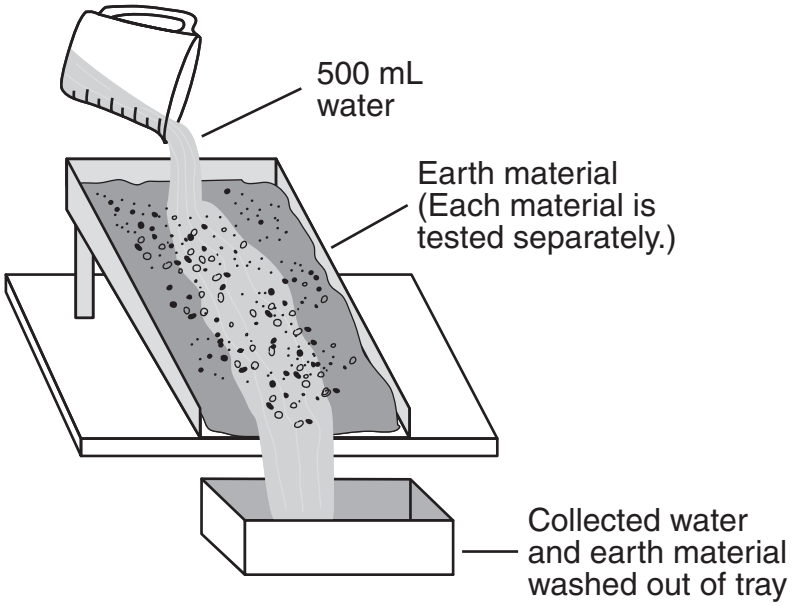
A. 15 m

B. 17 m

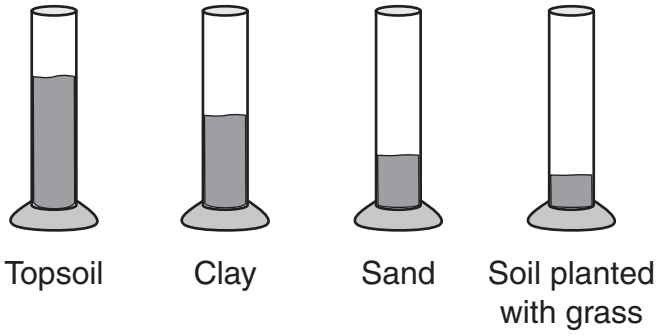
C. 20 m

D. 22 m

❹ A student investigates erosion using four kinds of earth material: topsoil, clay, sand, and soil planted with grass. The setup for the investigation is shown below.



Water is separated from the earth material with a filter. The pictures below show the amounts of earth material that were collected.



The results of this investigation **best** support which conclusion?

A. Topsoil is easily eroded.

B. Sand has a coarse texture.

C. Water travels fastest through soil planted with grass.

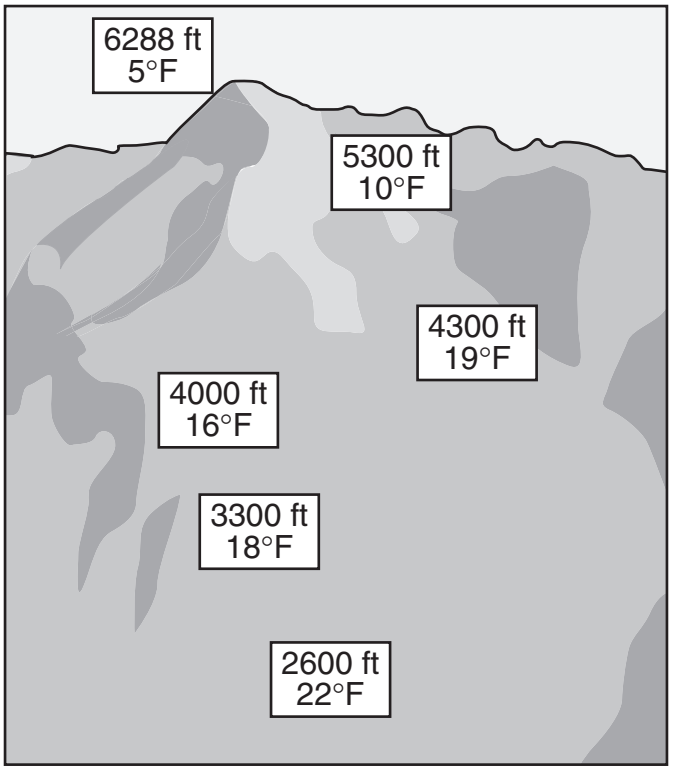
D. Water drains most quickly through clay.

5 A student sets up a wind vane in her backyard. What can she learn about the wind by using the wind vane?

A. wind direction
B. wind pressure
C. wind speed
D. wind temperature

6 On a February morning, scientists recorded the temperature on Mount Washington at different heights. The temperature data are shown in the diagram below.

Mount Washington Data



Which statement describes the weather **pattern** shown in the diagram?

A. The temperature at 4300 feet is colder than the temperature at 3300 feet.
B. The temperature in the morning is colder than the temperature in the afternoon.
C. The greater heights are colder than the lower heights.
D. The greater heights have deeper snow than the lower heights.

7 The table below shows the characteristics of two groups of animals.

Characteristics of Mammals and Reptiles

Classification Group	Characteristics
Mammals	• Fur • Warm-blooded • Produce milk to feed their young
Reptiles	• Scales • Cold-blooded • Lay eggs

Which statement **best** explains why cats and dogs are classified as mammals?

A. They both eat meat.

B. They both have fur.

C. They both have four legs.

D. They both are types of pets.

8 What do **all** animals need to live?

A. fur

B. meat

C. soil

D. water

9 Some plants have seedpods that stick to animal fur. Why is this kind of seedpod helpful to plants?

A. The seedpods get food from animal fur.

B. The seedpods are kept warm by animal fur.

C. The animal carries the seedpods to an area where a new plant has space to grow.

D. The animal helps the seedpods mix with pollen from another plant.

10 Children have characteristics that are either inherited or learned.

a. Explain how an inherited characteristic is different from a learned characteristic.

b. Sort all the characteristics below into two groups: "Group 1: Inherited" and "Group 2: Learned." You may use a table or chart for your answer.

- tallest student in class
- rides a bicycle
- curly, black hair
- plays the piano
- reads mystery books
- brown eyes
- long fingers
- speaks French