



**NEW ENGLAND  
COMMON ASSESSMENT PROGRAM**

**Released Items  
2015**

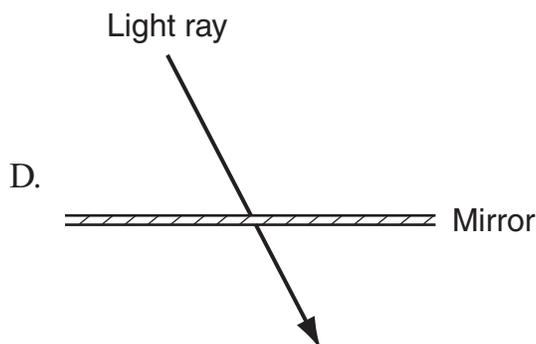
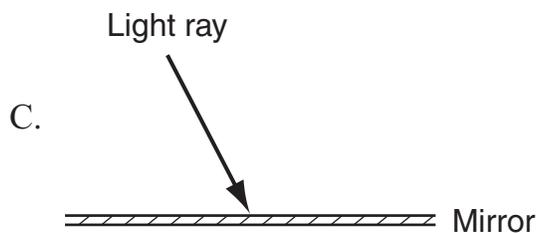
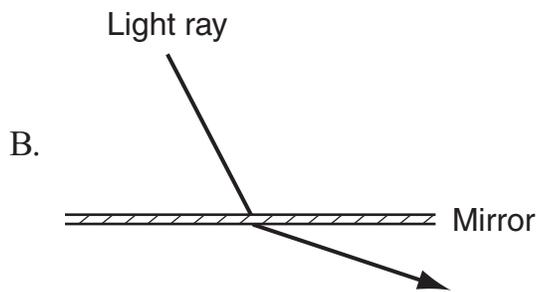
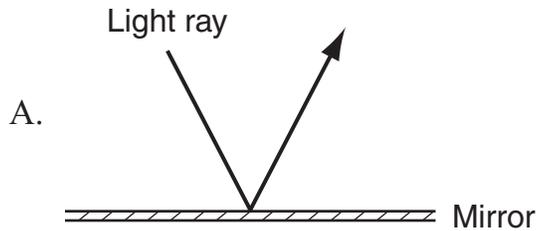
**Grade 4  
Science**

# Science

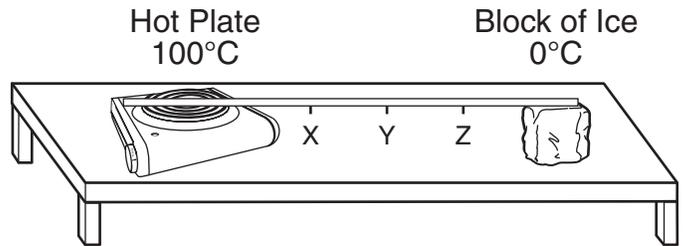
1 When a clear ice cube melts, which of its characteristics changes?

- A. color
- B. odor
- C. shape
- D. weight

2 Which diagram shows the reflection of a light ray striking a mirror?



3 The temperature of a metal rod is  $25^{\circ}\text{C}$ . A student places one end of the rod on a hot plate that is  $100^{\circ}\text{C}$  and the other end of the rod on a block of ice that is  $0^{\circ}\text{C}$ . The diagram below shows the setup of the experiment.



After five minutes, the temperature of the rod at points X, Y, and Z is measured.

What are the **most likely** temperatures of the rod at points X, Y, and Z?

- A. 

$75^{\circ}\text{C}$	$50^{\circ}\text{C}$	$25^{\circ}\text{C}$
X	Y	Z
- B. 

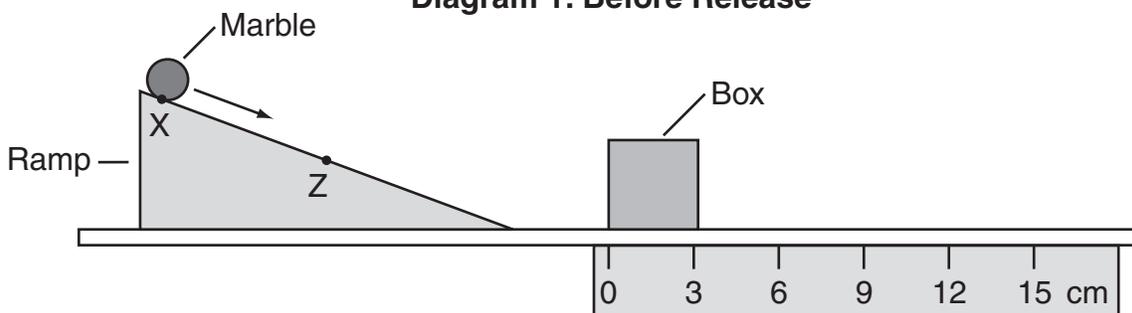
$75^{\circ}\text{C}$	$25^{\circ}\text{C}$	$50^{\circ}\text{C}$
X	Y	Z
- C. 

$25^{\circ}\text{C}$	$50^{\circ}\text{C}$	$75^{\circ}\text{C}$
X	Y	Z
- D. 

$25^{\circ}\text{C}$	$25^{\circ}\text{C}$	$25^{\circ}\text{C}$
X	Y	Z

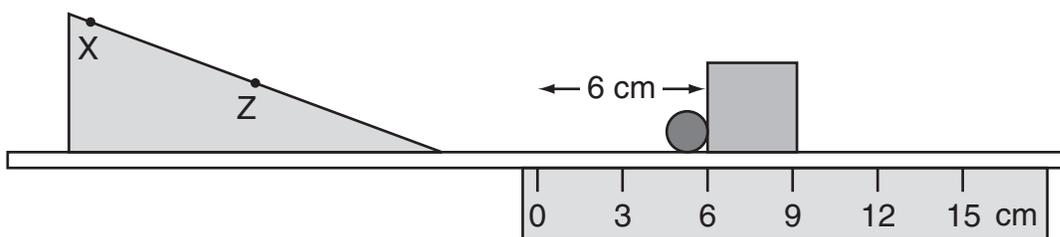
- 4 A student holds a marble on a ramp at point X, as shown in Diagram 1.

Diagram 1: Before Release



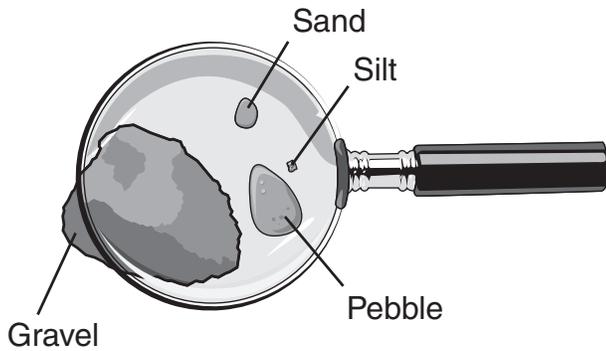
The student releases the marble, and it rolls down the ramp. The marble hits the box at the bottom of the ramp and pushes the box 6 cm, as shown in Diagram 2.

Diagram 2: After Release

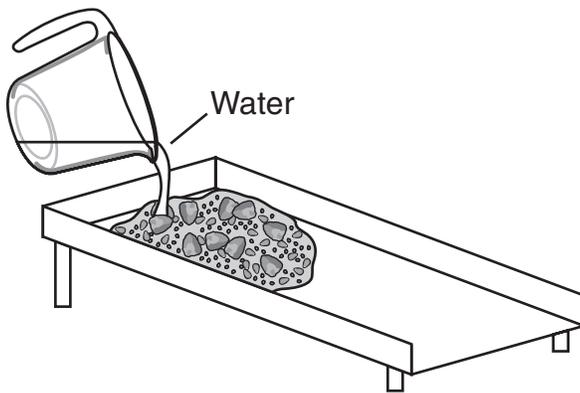


- Predict how far the marble will push the box if the marble is released from point Z in Diagram 1 instead of from point X. Explain your reasoning.
- Describe **one** change the student could make to the experiment to cause a marble to push a box more than 6 cm. Explain your reasoning.

- 5 The picture below shows the particle size of four kinds of earth materials.



During an investigation, a student set up a stream table, as shown in the diagram below.



The student placed the four earth materials at the top of the stream table. Then the student poured water to represent a flowing stream.

Which earth material will be carried down the stream table the farthest?

- A. gravel
- B. sand
- C. silt
- D. pebble

- 6 A student adds 50 g each of small rocks, gravel, sand, and clay to a large jar of water. He closes the jar, shakes it, and then turns it upside down and lets it sit. The result of his investigation is shown below.



This investigation models which process?

- A. formation of soil
- B. volcanic eruption
- C. carving of a canyon by a river
- D. settling of particles in water

- 7 The table below shows the weather forecast for four days.

Mon.	Tue.	Wed.	Thurs.	Fri.
		?		
Partly cloudy	Sunny	?	Partly cloudy	Scattered showers
73°F	73°F	?	61°F	56°F

Based on the table, what is the **most likely** weather forecast for Wednesday?

- A. sunny and 45°F
- B. sunny and 72°F
- C. partly cloudy and 85°F
- D. scattered showers and 50°F

- 8 A student used information from the table below to develop a conclusion about whales.

### Facts about Whales

Type of Whale	Length	Weight (mass)	Diet	Type of Animal
Blue	23–35 m	99,000 kg	Small ocean organisms	Mammal
Humpback	12–14 m	36,000 kg	Small ocean organisms	Mammal
Right	10–16 m	106,000 kg	Small ocean organisms	Mammal
Orca	9–10 m	9,500 kg	Fish, seals, penguins	Mammal

Which statement is the **best** conclusion?

- A. All whales are mammals.
- B. All whales are about the same length.
- C. All whales have about the same weight.
- D. All whales eat small ocean organisms.

9 A piping plover is a small bird that nests in sand on ocean beaches. People are not allowed to walk on some beaches during the plover nesting season.

What is the **most likely** result of this rule?

- A. More plover chicks will hatch.
- B. Fewer plover chicks will hatch.
- C. Adult plovers will leave their nests.
- D. Adult plovers will eat different food.

10 A student is tall, likes to play basketball, enjoys hip-hop music, and has long hair.

Which characteristic did she inherit?

- A. being tall
- B. liking to play basketball
- C. enjoying hip-hop music
- D. having long hair