



**NEW ENGLAND  
COMMON ASSESSMENT PROGRAM**

**Released Items  
2012**

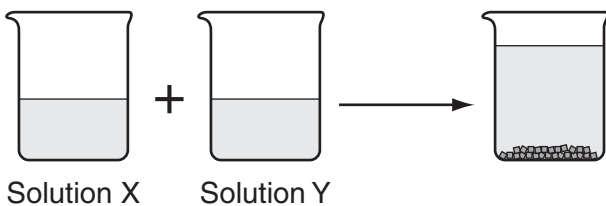
**Grade 8  
Science**

# Science

- 1 A student predicts that gold (Au) has a higher density than lead (Pb). She places a sample of each element on a balance scale.

Which variable does the student need to control to test her hypothesis?

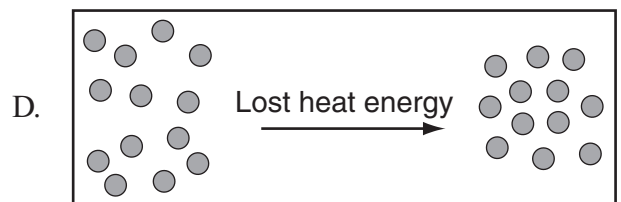
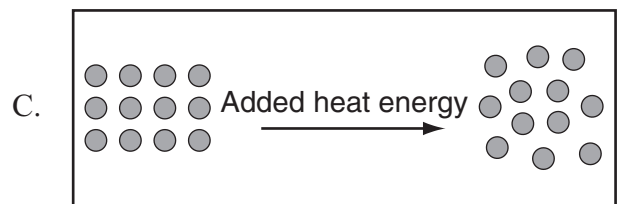
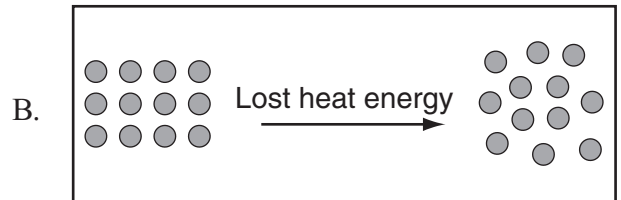
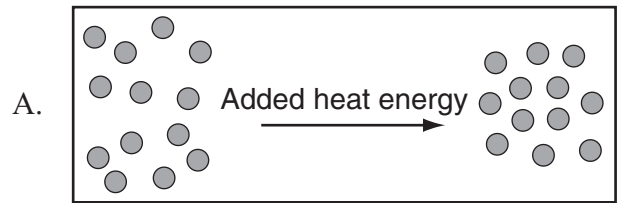
- A. the length of the samples
  - B. the shape of the samples
  - C. the temperature of the samples
  - D. the volume of the samples
- 2 Solution X and Solution Y are combined in a third beaker. A solid is formed, as shown below.



Which information can be used to find out if the total mass of the substances is the same before and after the reaction?

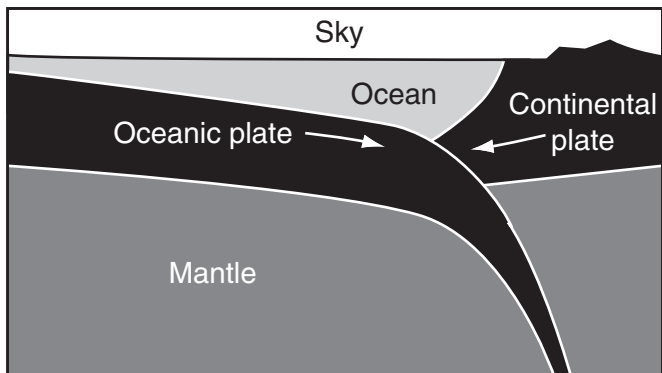
- A. the total mass of the substances after mixing
- B. the total mass of the substances before mixing
- C. the total mass of the substances and beakers after mixing
- D. the total mass of the substances and beakers before and after mixing

- 3 Which diagram models water changing from a gas state (water vapor) to a liquid state?



- 4 A cast-iron frying pan is heated to  $205^{\circ}\text{C}$  in a kitchen oven. The hot pan is then removed from the oven and placed on a metal table at room temperature ( $20^{\circ}\text{C}$ ). After 10 minutes, the pan has cooled to  $65^{\circ}\text{C}$ .
- Name **two** different heat transfer methods.
  - Explain how **each** of the heat transfer methods you named in part (a) worked to decrease the temperature of the cast-iron frying pan.

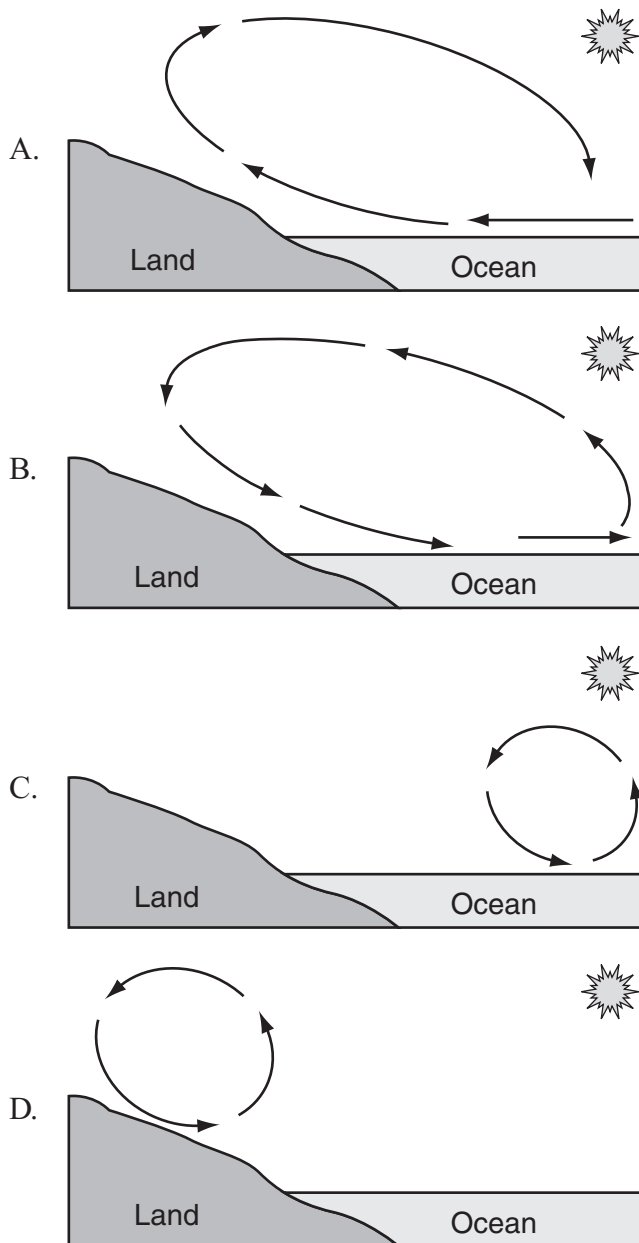
- 5 The diagram below shows two of Earth's plates interacting with each other.



Which prediction does the information in the diagram **best** support?

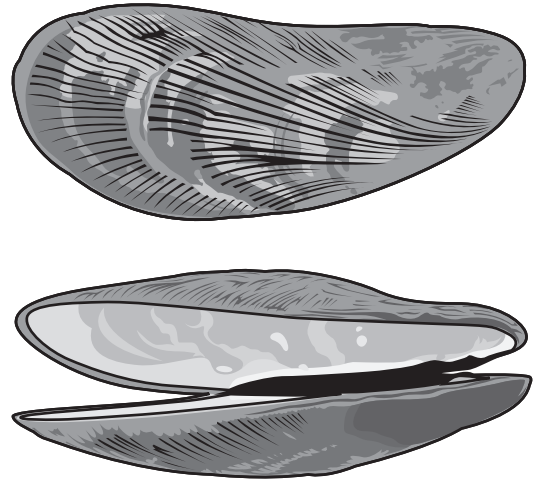
- A. Both plates will slide into the ocean as they collide.
- B. A mid-ocean ridge will form as the plates move apart.
- C. The ocean will become larger as the plates move apart.
- D. A volcanic mountain range will form as one plate moves under the other.

- 6 In the summer, the land is warmer than the ocean surface during the day. Which diagram shows how the flow of air creates wind near the ocean during the day?



- 7 Which example demonstrates technology being used to improve understanding of the solar system?
- A. Galileo built a telescope and observed moons orbiting Jupiter.
  - B. Newton wrote a book that described how gravity held planets in their orbits.
  - C. Ptolemy created a model that showed planets and the Sun revolving around Earth.
  - D. Halley calculated a comet's orbit and predicted when the comet would be seen again.

- 8 Students found the shell shown below in Cape Cod, Massachusetts.



The students used the key below to find out what kind of organism lived in the shell.

1. Does the organism have two halves of a shell attached by a hinge?
  - a. If yes, it is a bivalve and go to 2.
  - b. If no, it is a univalve and go to 4.
2. Is the shell thick with two unequal parts?
  - a. If yes, it is a common oyster.
  - b. If no, go to 3.
3. Is the shell smooth or ribbed?
  - a. If smooth, it is a blue mussel.
  - b. If ribbed, it is a ribbed mussel.
4. Is the shell dome-shaped with a thin plate covering half the opening?
  - a. If yes, it is a slipper snail.
  - b. If no, it is a limpet.

Based on the key, which organism lived in the shell the students found?

- A. common oyster
- B. ribbed mussel
- C. slipper snail
- D. limpet

- 9 Euglenas and amoebas are two different kinds of single-celled organisms that live in freshwater ecosystems. Both organisms can obtain food directly from the water. But only euglenas can make their own food.

What will happen if food in the water becomes scarce?

- A. More euglenas than amoebas will be found in the water.
- B. More amoebas than euglenas will be found in the water.
- C. Both euglenas and amoebas will start to photosynthesize.
- D. Both euglenas and amoebas will die out.

- 10 The table below lists major changes in early human development.

### Events in Early Human Development

Letter ID	Event
P	There are only 32 cells present.
Q	The heart is pumping and the nervous system begins to form.
R	Fertilization takes place.
S	The baby's eyes are open and fingernails and toenails are present.

Which sequence is the correct order of events in early human development?

- A. sequence P, R, Q, S
- B. sequence R, P, Q, S
- C. sequence R, Q, P, S
- D. sequence P, R, S, Q