



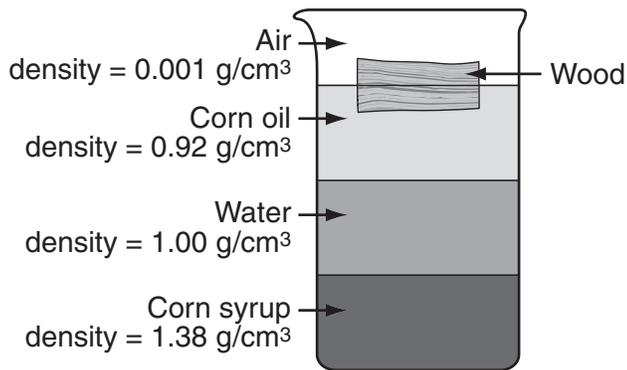
**NEW ENGLAND  
COMMON ASSESSMENT PROGRAM**

**Released Items  
2016**

**Grade 8  
Science**

# Science

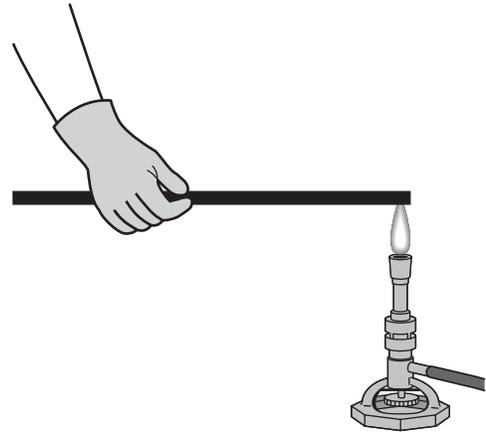
- 1 The air, wood, and liquids in the container below have different densities.



What is **most likely** the density of the wood?

- A. 0.001 g/cm<sup>3</sup>
  - B. 0.70 g/cm<sup>3</sup>
  - C. 0.95 g/cm<sup>3</sup>
  - D. 1.10 g/cm<sup>3</sup>
- 2 The point of a pencil contains graphite, which consists entirely of the element carbon. Which statement describes graphite?
- A. Graphite is made of different kinds of compounds.
  - B. Graphite is made of one kind of compound.
  - C. Graphite is made of different kinds of atoms.
  - D. Graphite is made of one kind of atom.

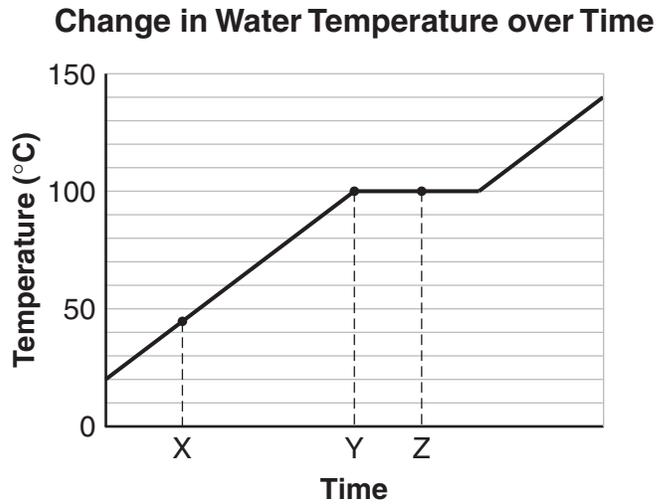
- 3 In the figure below, a gloved hand holds a copper rod directly above a flame.



Which statement **best** describes what will happen after the rod is held above the flame for several minutes?

- A. Both the glove and rod will be cool.
- B. Both the glove and rod will be warm.
- C. The glove will be warm and the rod will be cool.
- D. The glove will be cool and the rod will be warm.

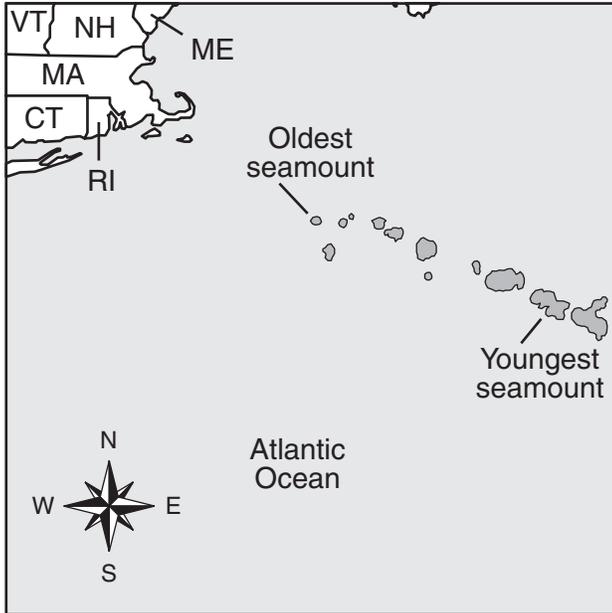
- 4 The graph below shows how the temperature of water changes over time as it is heated from 20°C to 140°C.



- Explain what happens to the water in terms of energy, molecules, and state of matter from Time X to Time Y.
- Explain what happens to the water in terms of energy, molecules, and state of matter from Time Y to Time Z.

Please use the Plate Movements diagram on the reference sheet to answer the question.

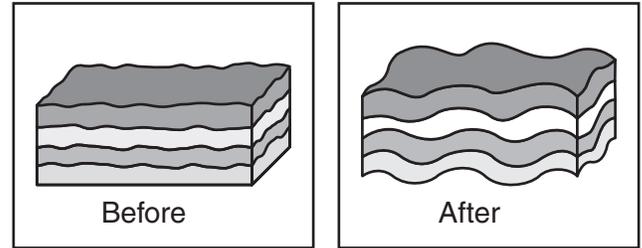
- 5 The map below shows the positions and relative ages of the seamounts in the New England seamount chain, which is located on the North American Plate.



Which conclusion about the movement of the North American Plate does the map **best** support?

- A. The plate moved in a southeast direction over a hot spot.
- B. The plate moved in a northwest direction over a hot spot.
- C. The plate subducted beneath the New England states.
- D. The plate moved away from the New England states.

- 6 The diagram below shows rock layers that were changed.



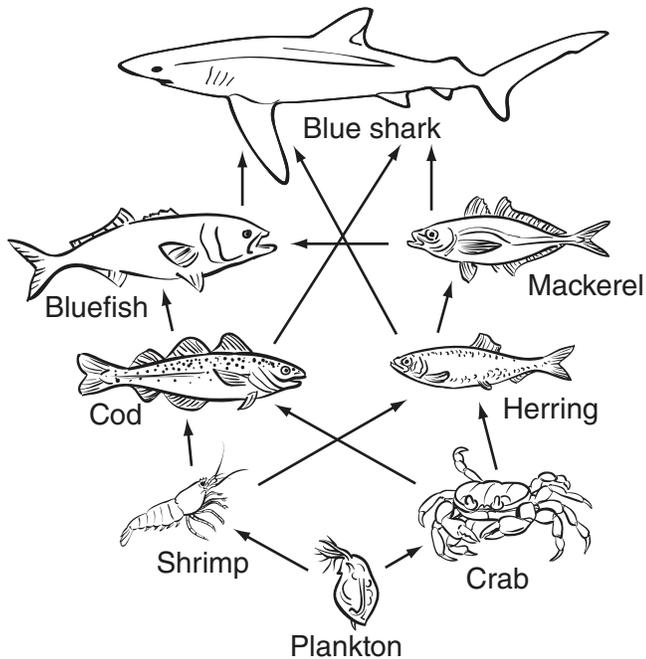
Which type of event **most likely** caused the rock layers to change?

- A. earthquakes cracking the rock layers
- B. pressure pushing on opposite sides of the rock layers
- C. heat from volcanic eruptions melting the rock layers
- D. weight from sediments pushing on the rock layers

- 7 Which statement **best** explains why an object weighs less on Mercury than it does on Earth?

- A. Mercury is less dense than Earth.
- B. Mercury is more dense than Earth.
- C. Mercury has a stronger gravitational pull than Earth does.
- D. Mercury has a weaker gravitational pull than Earth does.

- 8 The diagram below shows a partial North Atlantic food web.



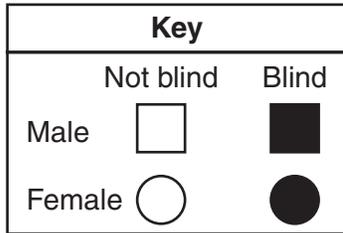
Overfishing and climate change threaten the cod population. Based on the diagram, how will bluefish change their feeding behavior if the cod population decreases?

- A. Bluefish will eat more crabs.
- B. Bluefish will eat more blue sharks.
- C. Bluefish will eat more plankton.
- D. Bluefish will eat more mackerel.

- 9 An ecosystem contains hawks, mice, grasses, and fungi. Removing which of these populations would **directly** result in fewer nutrients being returned to the ecosystem?

- A. hawks, because the population of mice would become too large to find enough food
- B. mice, because the population of grasses would become too large for the available space
- C. grasses, because there would be no other organisms producing food
- D. fungi, because there would be fewer organisms breaking down wastes

- 10 A researcher studies blindness in cats. The researcher breeds a cat that is blind with a cat that is not blind. Four kittens are produced. One male and one female kitten are blind. The other two male kittens are not blind. The researcher uses the key below to make the pedigree for the family of cats.



Which diagram shows the pedigree for this family of cats?

