



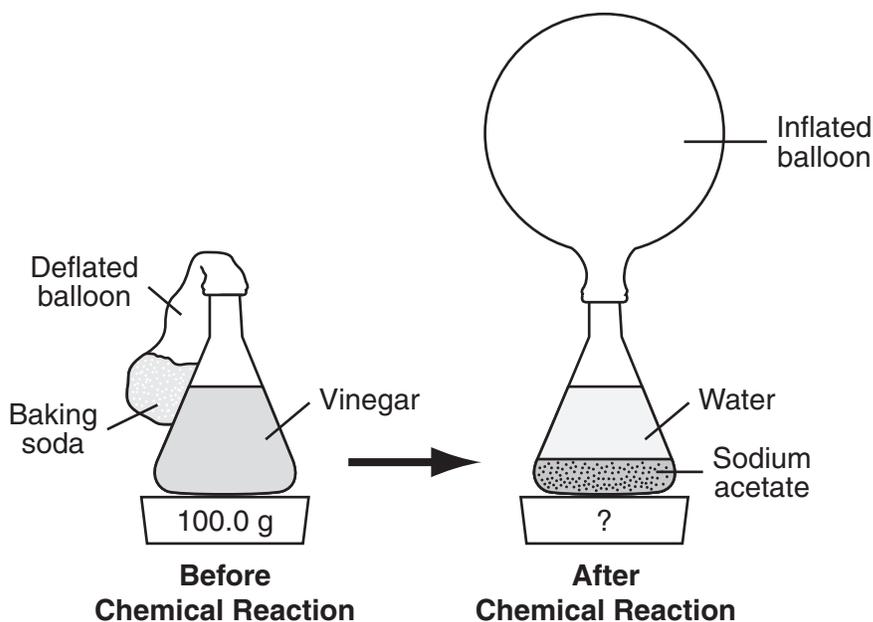
**NEW ENGLAND
COMMON ASSESSMENT PROGRAM**

**Released Items
2013**

**Grade 8
Science**

Science

- 1 The diagrams below show an experiment in which baking soda and vinegar are combined.



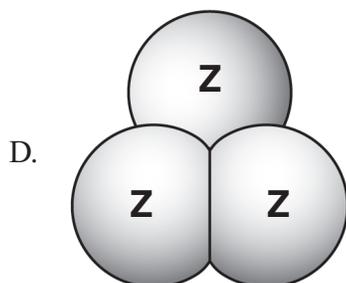
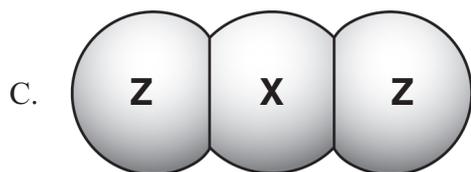
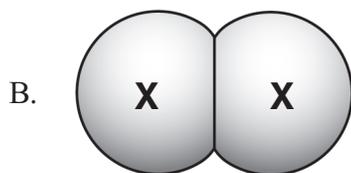
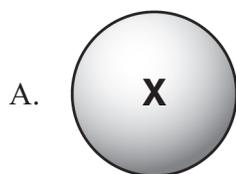
Before the chemical reaction the mass of the entire system is 100.0 grams.

What is the **most likely** mass of the system after the chemical reaction?

- A. 0.0 g
- B. 90.0 g
- C. 100.0 g
- D. 101.0 g

- 2 Which example represents a substance changing state from a gas to a liquid?
- A. ice cubes melting into liquid water
 - B. water vapor cooling and forming droplets in a cloud
 - C. hydrogen and oxygen gases reacting and producing liquid water
 - D. water puddles evaporating when exposed to sunlight

- 3 Which diagram represents a chemical compound?

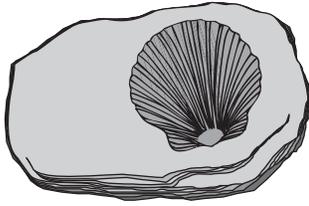


- 4 A student fills a jar halfway with water and covers the jar with plastic wrap. After a few days, the student observes moisture on the inside surface of the plastic wrap.

Which processes are being modeled?

- A. water currents rising and sinking in a lake
- B. different forms of precipitation falling and seeping into the ground
- C. plant roots absorbing water and plant leaves releasing water vapor
- D. water evaporating from a lake and water vapor condensing in the atmosphere

- 5 The rock shown below contains a shell fossil.



Which process describes how the rock formed?

- A. Solid rock was heated.
- B. Molten rock was cooled.
- C. Rock was heated and compressed.
- D. Layers of silt and sand were compacted.

Please use the Solar System Data on the reference sheet to answer the question.

- 6 An object is weighed on Earth. The object is then moved to Mars. How will its weight be affected?
- A. Its weight will be zero.
 - B. Its weight will increase.
 - C. Its weight will be the same.
 - D. Its weight will decrease but not to zero.

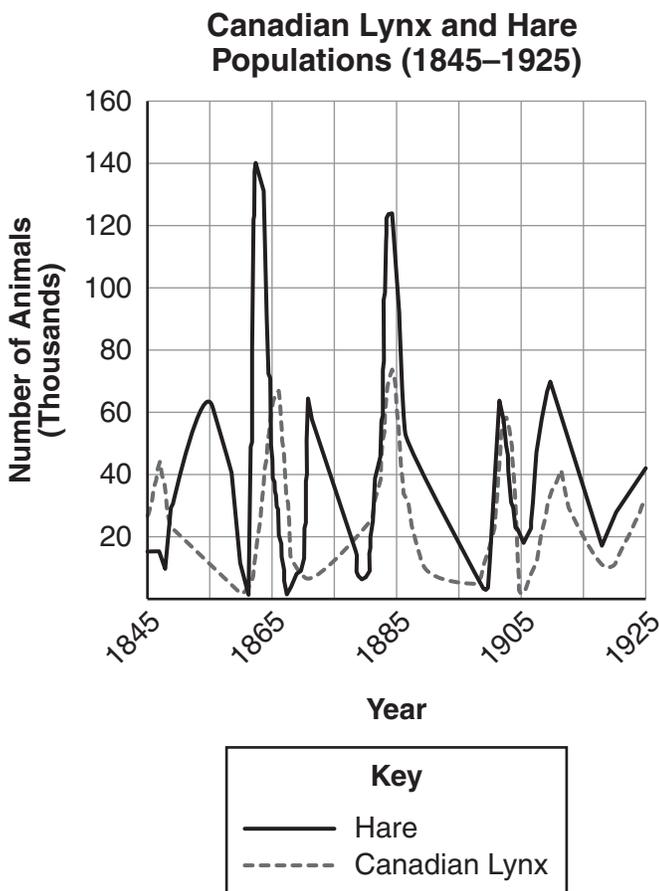
- 7 The table below lists data about some moons of the solar system.

Some Moons of the Solar System

Name	Parent Planet	Orbital Period (Earth days)	Radius (km)	Mass Relative to Earth's Moon	Density (kg/m ³)
Moon	Earth	27.30	1740	1.00	3300
Callisto	Jupiter	16.70	2400	1.46	1800
Europa	Jupiter	3.55	1570	0.65	3000
Ganymede	Jupiter	7.15	2630	2.02	1900
Io	Jupiter	1.77	1820	1.22	3500
Titan	Saturn	16.00	2580	1.83	1900

- a. Identify two **moons** from the table that could be the **most** similar to Earth's moon. Use specific data from the table to explain your answer.
- b. Compare the orbital periods of Jupiter's moons (shown in the table) with the orbital period of Saturn's moon Titan.

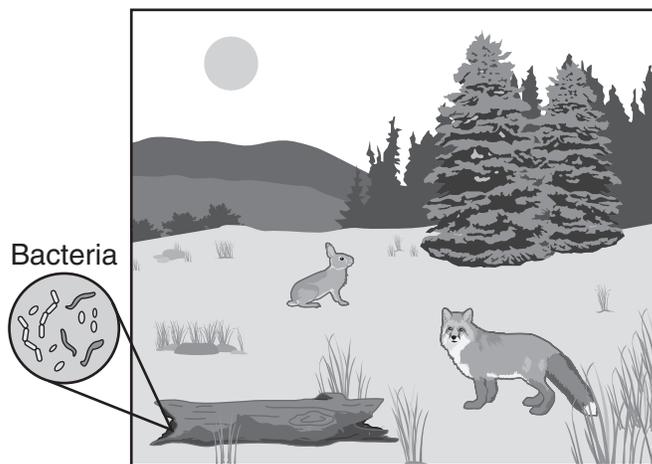
- 8 The Canadian lynx is a small wildcat that eats mostly hares. Hares are similar to rabbits. The graph below compares the Canadian lynx and hare populations in an ecosystem from 1845 through 1925.



Based on the graph, which sentence describes one possible relationship between the Canadian lynx and the hare populations?

- If the population of hares were to suddenly increase, the Canadian lynx would likely become extinct.
- If another predator of the hares were introduced into the ecosystem, the population of Canadian lynx would suddenly increase.
- If the Canadian lynx began to eat other types of mammals, the population of hares would suddenly decrease.
- If the Canadian lynx were suddenly removed from the ecosystem, the population of hares would likely increase.

- 9 An example of an ecosystem is shown below.



How does some of the energy flow through the ecosystem?

- from the grass to the rabbit
 - from the grass to the Sun
 - from the fox to the rabbit
 - from the bacteria to the fox
- 10 Cigarette smoking narrows the smoker's blood vessels. Blood carries oxygen that is needed by organs to function properly.
- Which prediction is **most likely** to occur in someone who smokes cigarettes?
- The smoker's heart will pump blood more slowly because the blood will take up more space in the blood vessels.
 - The smoker will have less blood move through the blood vessels because the blood vessels will get larger.
 - The smoker's lungs will need to take in less oxygen because oxygen levels will increase in the body.
 - The smoker's cells will become damaged because they will receive less oxygen.