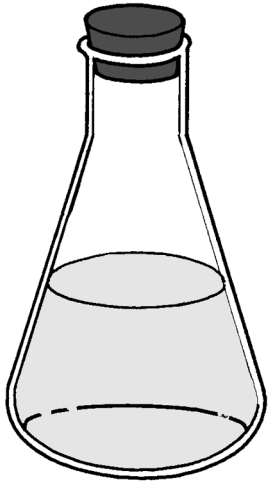
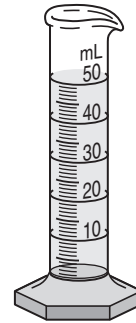


**SCIENCE**  
**Grade 8**

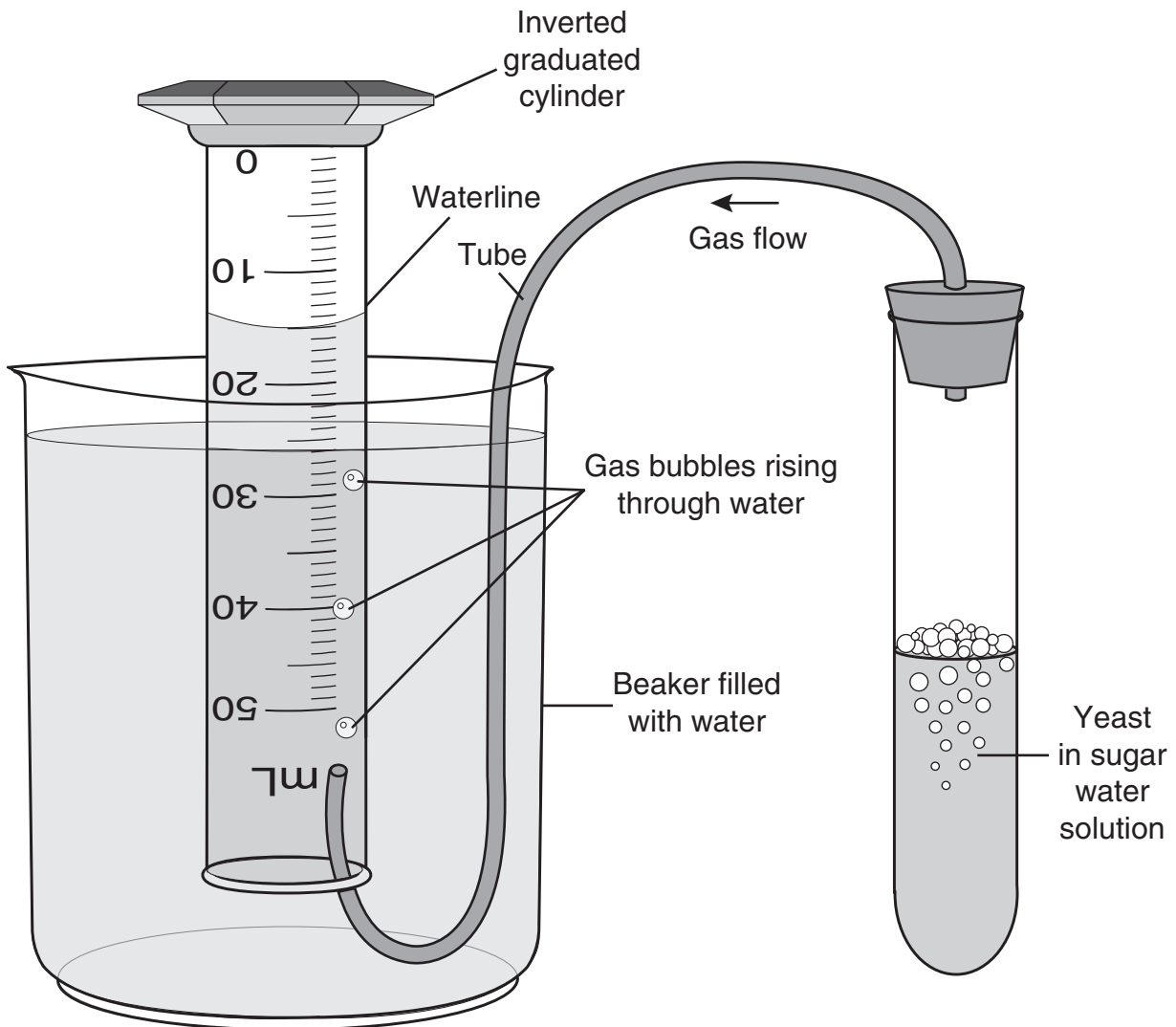
**2008 Released Items**



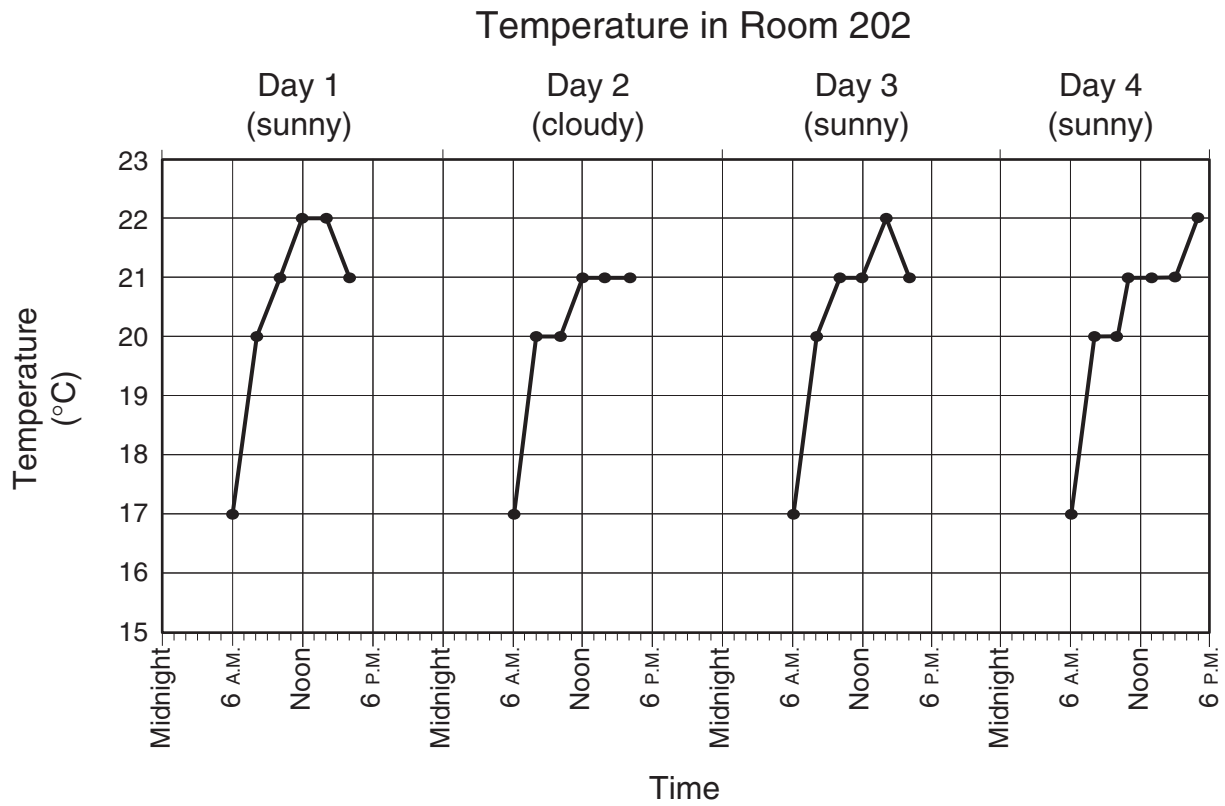
- 1 Which step should be taken before the liquid in the flask shown above is heated?
- A Place the flask in a water bath
  - B Remove some of the liquid
  - C Insulate the flask
  - D Remove the stopper



- 2 After reading the liquid level in the graduated cylinder above, what must a student determine to calculate the density of the liquid?
- A Color
  - B Boiling point
  - C Mass
  - D Temperature

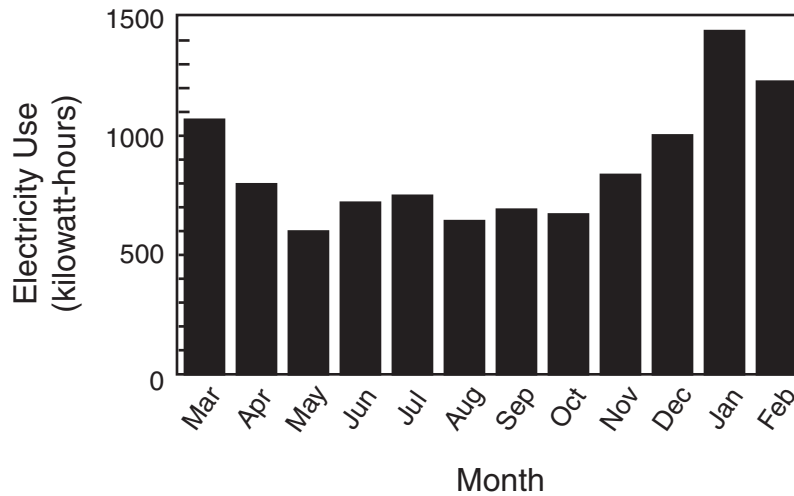


- 3 Gas is being collected in the graduated cylinder shown above. The cylinder was filled to the top with water before the gas was released through the tube. How much gas has been collected in the cylinder?
- A 15 mL
  - B 27 mL
  - C 35 mL
  - D 38 mL



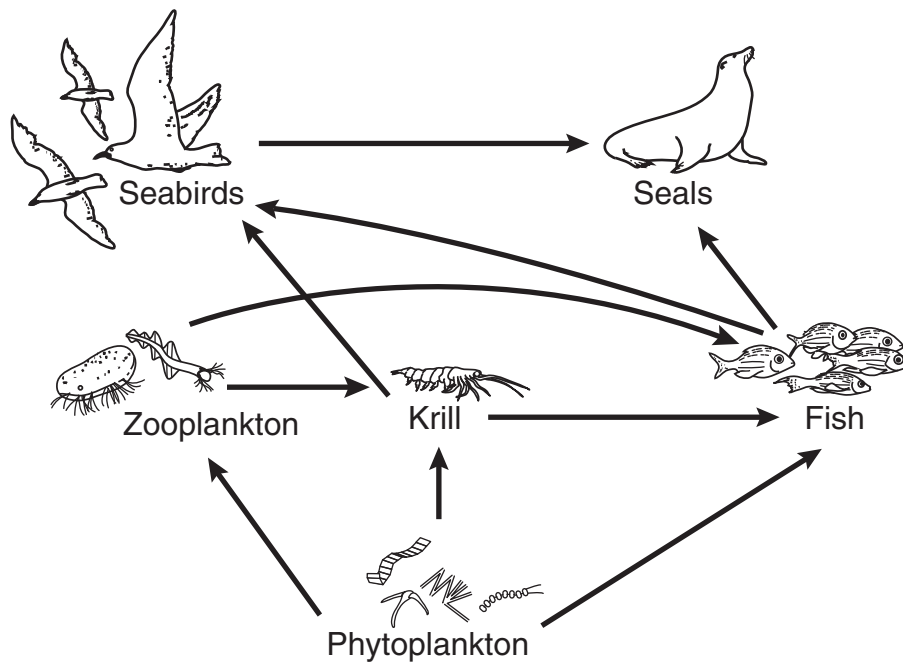
- 4 The graph shows temperature readings taken in a classroom over four days. Based on the table, the temperature at noon on Day 5 will most likely be —
- A 17°C
  - B 18°C
  - C 20°C
  - D 21°C

Electricity Use by a Family  
in North America



- 5 This graph was included in a family's electric bill and shows the amount of electricity used over 12 months. This family uses electricity for both heating and cooling. Based on information in the graph, which of the following probably best describes the climate where the family lives?
- A Mild winters and mild summers
  - B Cold winters and mild summers
  - C Mild winters and hot summers
  - D Cold winters and hot summers

- 1 Which of the following terms best describes all the white-tailed deer in a particular forest?
- A Community
  - B Ecosystem
  - C Individual
  - D Population
- 2 Glucose molecules contain stored energy for plants. Glucose is made from carbon dioxide and water molecules during photosynthesis. What kind of energy do plants use to make glucose molecules?
- A Electrical
  - B Sound
  - C Light
  - D Kinetic
- 3 Areas that receive little rainfall and have extreme high and low temperatures will most likely have organisms that —
- A are adapted for aquatic environments
  - B conserve water
  - C migrate seasonally
  - D are active only during the daytime
- 4 Which two systems work together to provide oxygen to cells?
- A Immune and respiratory systems
  - B Digestive and skeletal systems
  - C Respiratory and circulatory systems
  - D Lymphatic and nervous systems



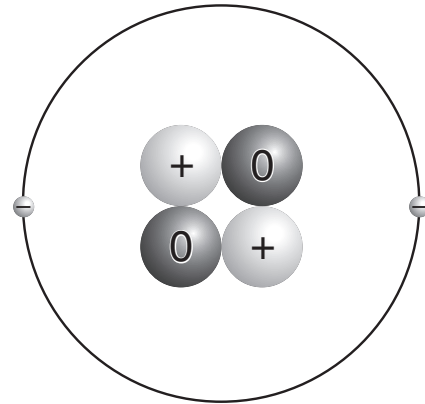
- 5 In the food web above, which of the following organisms transfer the largest total amount of energy to other organisms?
- A Phytoplankton
  - B Seabirds
  - C Fish
  - D Krill

- 1 Which of the following is an example of a chemical property?
- A Density
  - B Shape
  - C Color
  - D Flammability



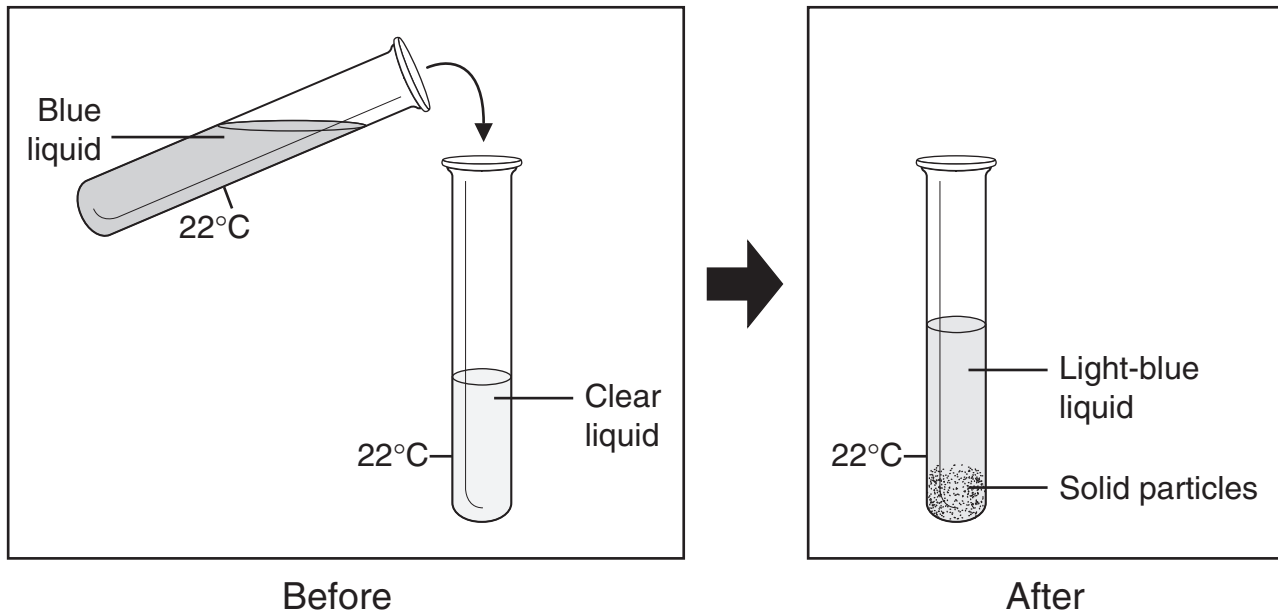
- 2 The equation above shows the chemical reaction for burning coal. Which of the following best explains the reaction represented by this equation?
- A Carbon dioxide gas breaks down into solid carbon and oxygen gas.
  - B Solid carbon reacts with oxygen gas to produce carbon dioxide gas.
  - C Solid carbon, oxygen gas, and carbon dioxide gas react to form products.
  - D Oxygen gas heats solid carbon, melting the carbon into a liquid.

### Bohr Model of a Helium Atom

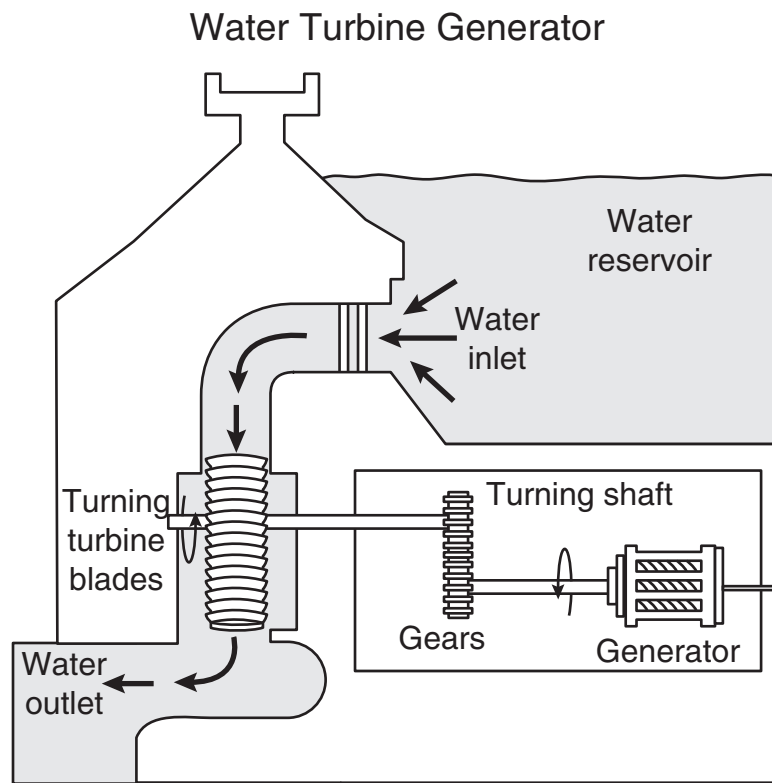


- 3 Which of the following correctly lists the particles in a helium atom?
- A 1 proton, 1 neutron, 1 electron
  - B 1 proton, 2 neutrons, 2 electrons
  - C 2 protons, 2 neutrons, 2 electrons
  - D 2 protons, 2 neutrons, 4 electrons
- 4 What is the total number of electrons in an atom with an atomic number of 13 and a mass number of 25?
- A 12
  - B 13
  - C 25
  - D 38

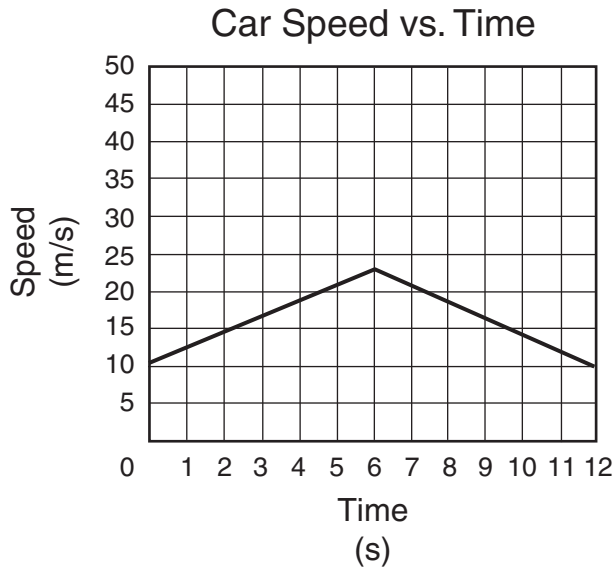




- 5 The pictures above show a blue liquid being added to a clear liquid. Which is the best evidence that a chemical reaction may have occurred?
- A The solution turned light blue.
  - B The temperature remained the same.
  - C Solid particles formed.
  - D The volume increased.



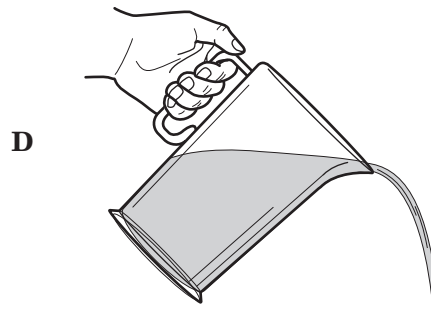
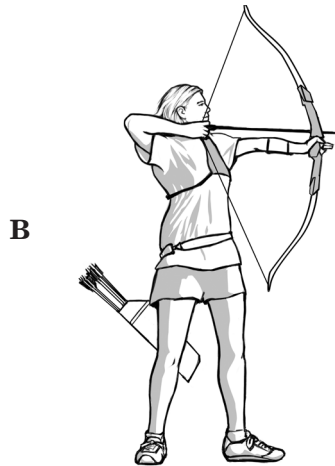
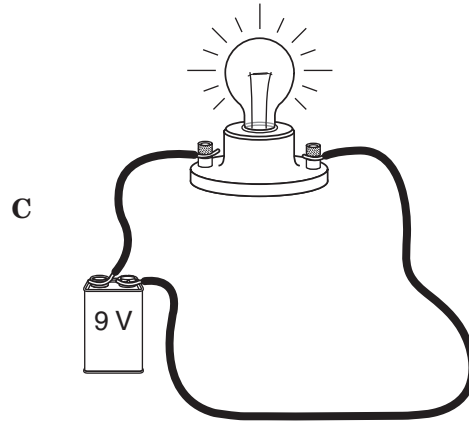
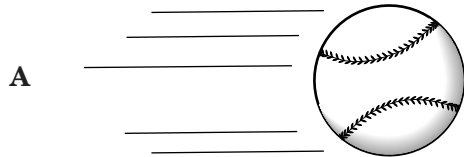
- 1 The diagram shows a generator powered by a water turbine. Water flows through the turbine blades and turns the shaft. The turning shaft then powers a generator. What energy conversion takes place in the water turbine generator?
- A Electrical energy is converted to mechanical energy.
  - B Solar energy is converted to thermal energy.
  - C Thermal energy is converted to electrical energy.
  - D Kinetic energy is converted to electrical energy.

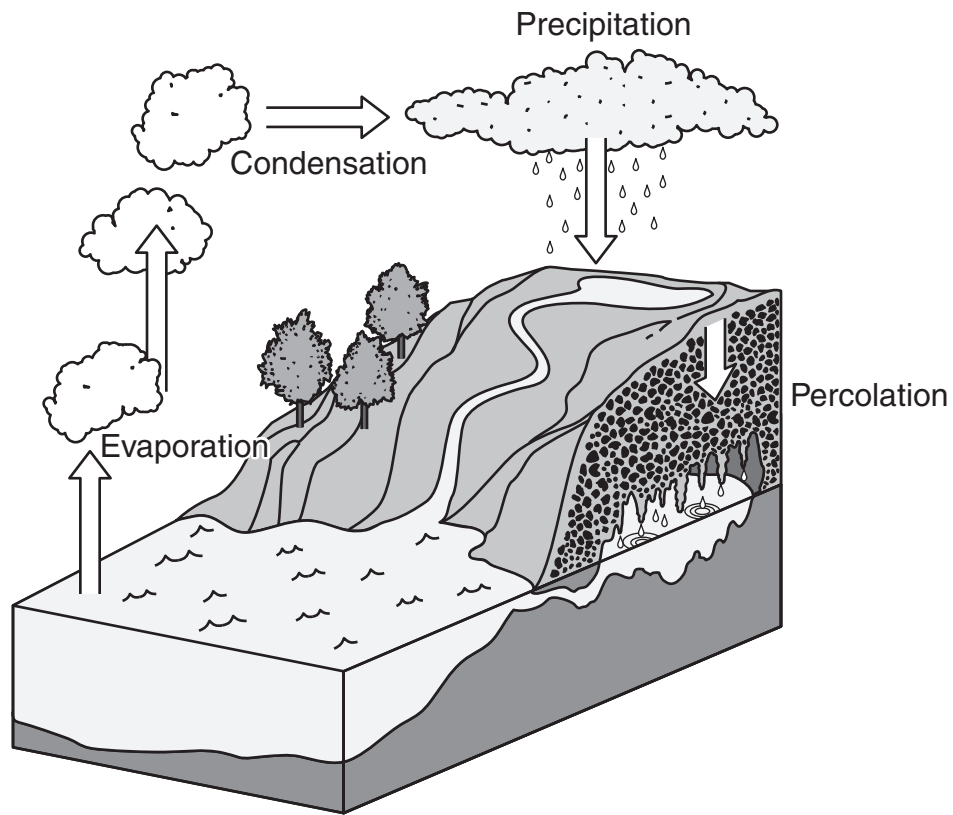


- 2 The graph shows the speed of a car traveling east over a 12-second period on a flat surface. In the first 6 seconds shown on the graph, the car is —
- A increasing its speed
  - B changing direction
  - C heading northeast
  - D gaining potential energy

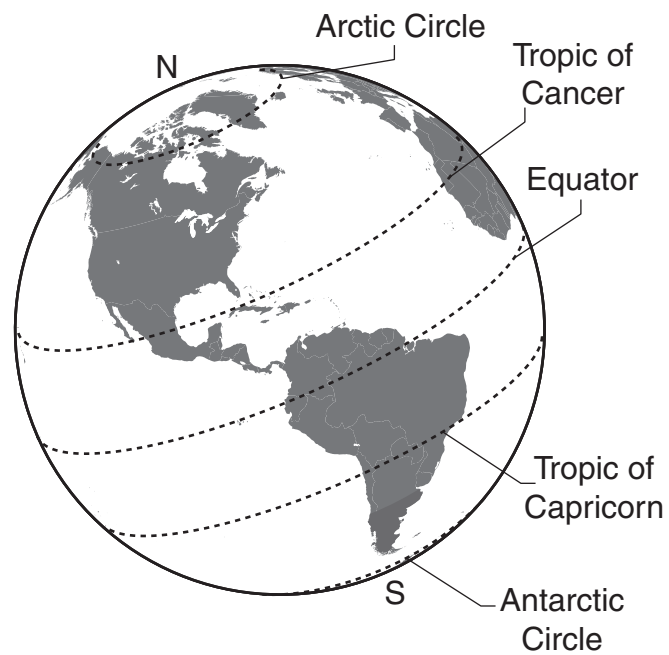
- 3 Heart muscles contract and relax. What is the most important effect of this action on the human body?
- A Blood is pushed through vessels.
  - B The heart beats rhythmically.
  - C The heart gets needed exercise.
  - D Energy is generated for other organs.

4 Which of the following is the best example of an object with only potential energy?



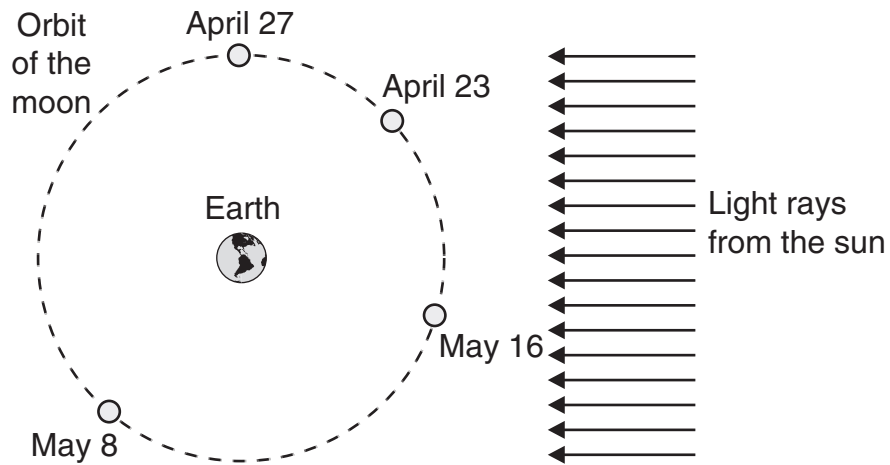


- 1 The diagram shows a modified water cycle. Which of the following best describes the process in which surface water becomes water vapor?
- A Evaporation
  - B Condensation
  - C Precipitation
  - D Percolation

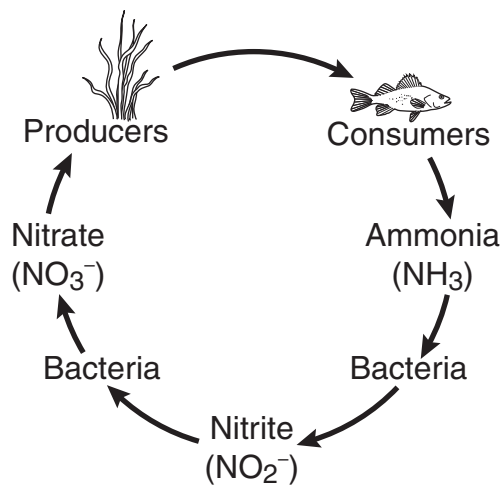


- 2 At which latitude can the sun be visible for 24 hours straight in June?
- A Arctic Circle
  - B Tropic of Cancer
  - C Equator
  - D Tropic of Capricorn

## Phases of the Moon



- 3 The diagram above shows the moon orbiting Earth. An observer on Earth sees different phases on different dates. Which of the following dates is closest to the new-moon phase?
- A April 23
  - B April 27
  - C May 8
  - D May 16



- 4 The diagram above shows a simplified nitrogen cycle in a freshwater aquarium. What would probably happen if additional fish were added to the aquarium?
- A Nitrite levels would decrease.
  - B Nitrate levels would increase.
  - C Bacterial populations would decrease.
  - D Fish size would increase.

- 5 Above a hot spot under an oceanic plate, large quantities of lava continually erupt through the seafloor. If the lava builds up to an elevation greater than sea level, what type of landform will result?
- A Barrier island
  - B Volcanic island
  - C Peninsula
  - D Continent



Item Number	Student Expectation	Correct Answer
<b>OBJECTIVE 1</b>		
1	8.1 (A)	D
2	8.2 (A)	C
3	8.2 (B)	A
4	8.2 (C)	D
5	8.3 (B)	B
<b>OBJECTIVE 2</b>		
1	6.5 (B)	D
2	7.8 (B)	C
3	7.12 (C)	B
4	8.6 (A)	C
5	8.6 (C)	A
<b>OBJECTIVE 3</b>		
1	6.7 (B)	D
2	7.7 (C)	B
3	8.8 (A)	C
4	8.8 (B)	B
5	8.9 (A)	C
<b>OBJECTIVE 4</b>		
1	6.9 (A)	D
2	6.6 (B)	A
3	7.6 (C)	A
4	7.8 (A)	B
<b>OBJECTIVE 5</b>		
1	6.14 (B)	A
2	7.13 (A)	A
3	7.13 (B)	D
4	8.12 (C)	B
5	8.14 (A)	B