

Maryland School Assessment

Science

2008 Public Release

Grade 8

Part 2

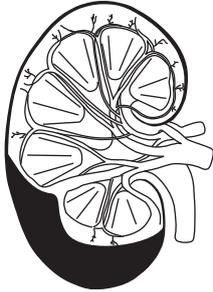


Part 2

- 12 Kidneys are bean-shaped organs that filter waste from the bloodstream.

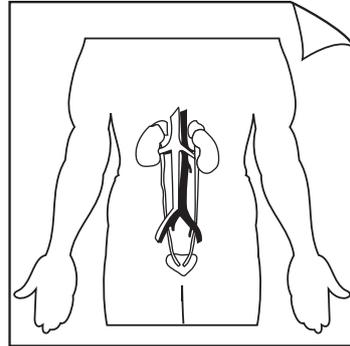
Which model best demonstrates how a kidney functions?

A

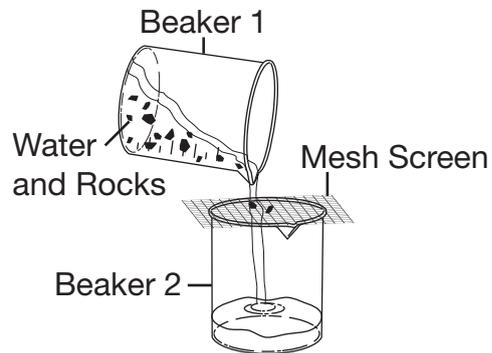


Kidney

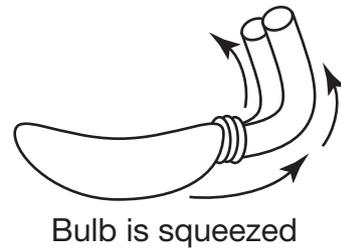
B



C



D



Part 2

13 The solar system containing Earth consists of a sun and planets.

Which statement best describes the motion of the planets in our solar system?

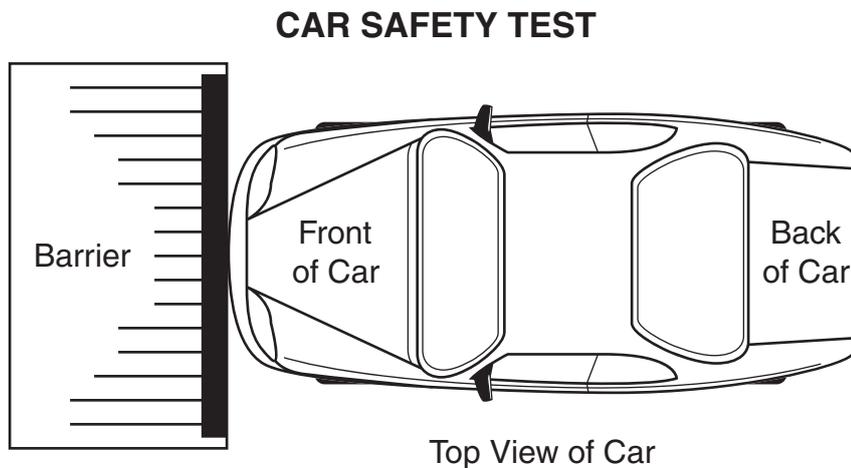
- A** The planets rotate around the sun.
- B** The sun rotates around the planets.
- C** The planets revolve around the sun.
- D** The sun revolves around the planets.

Part 2

Directions

Use the information and the picture below to answer Numbers 15 through 17.

Engineers tested the safety of a new model of car. The engineers designed safety tests and collected data from those tests. One test is pictured below.



- 15** An apple was placed on the back seat of the car. The car was then accelerated toward the barrier at 60 kilometers per hour (kph).

Which statement best describes the motion of the apple immediately after the car hit the barrier?

- A** The apple moved forward at 30 kph.
- B** The apple moved forward at 60 kph.
- C** The apple moved backward at 30 kph.
- D** The apple moved backward at 60 kph.

Part 2

16 How do engineers accurately predict what would happen in a real car crash?

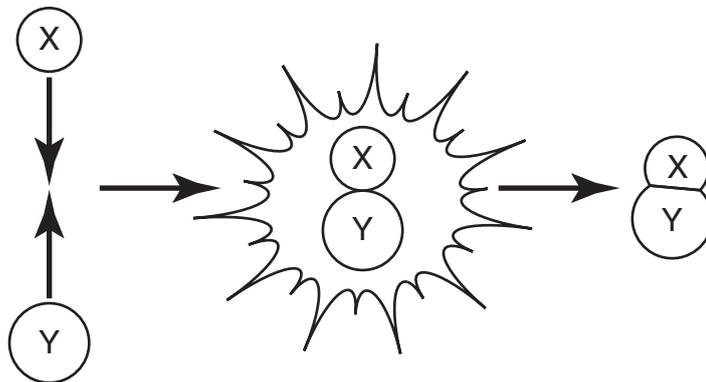
- A** Engineers review one trial on a computer.
- B** Engineers do one trial using many cameras.
- C** Engineers do several trials to verify the results are consistent.
- D** Engineers do several trials at a speed faster than the posted speed limit.

17 Which part of a car transforms chemical energy into electrical energy?

- A** the brakes
- B** the battery
- C** the wheels
- D** the accelerator

Part 2

18 Elements X and Y react to form compound XY.



How is compound XY different from elements X and Y?

- A** The mass of compound XY is greater than the combined masses of elements X and Y.
- B** The volume of compound XY is less than the combined volumes of elements X and Y.
- C** The physical properties of compound XY have changed from those of elements X and Y.
- D** The reactivity of compound XY is greater than the reactivity of elements X and Y.



Part 2

- 19 Students conducted an investigation to determine if mold grows on only certain types of bread. The students dripped water on four types of bread and covered the damp bread with plastic wrap. Each piece of bread was placed in a different dark area. The data table below shows the information the students collected after four days.

BREAD MOLD GROWTH

Type of Bread	Water (milliliters)	Temperature (°Celsius)	Presence of Mold
Rye	5	1	No
Sourdough	5	22	Yes
White	5	24	Yes
Wheat	5	40	Yes

Which of these changes should the students make to their investigation to develop a valid conclusion?

- A Use only two types of bread.
- B Drip more water on each piece of bread.
- C Keep all the bread at the same temperature.
- D Place some of the pieces of bread in a lighted area.

Part 2

20 Heat is transferred from one object to another object.

What is an example of heat transferred by radiation?

- A** coffee warming a cup
- B** hot air warming a room
- C** the sun warming the moon
- D** a hot plate warming a beaker



Part 2

Directions

Use the information below to answer Numbers 21 through 23.

The data table below shows the time of sunrise and sunset in four different cities on May 2. Each city is located within the same time zone of the United States.

TIMES OF SUNRISE AND SUNSET ON MAY 2

City	Sunrise	Sunset	Total Daylight Minutes
1	6:43 A.M.	7:53 P.M.	790
2	5:38 A.M.	7:45 P.M.	847
3	5:14 A.M.	10:24 P.M.	1,030
4	6:12 A.M.	7:58 P.M.	826

21 On which of these days will the total hours of daylight be the greatest in each of the four cities?

- A** January 28
- B** March 21
- C** June 21
- D** November 30

Part 2

22 Which fact best explains why the four cities will have different sunrise times on May 3?

- A** The tilt of the axis in Earth's orbit affects sunrise times.
- B** The rotation of Earth causes the cycle of days and nights.
- C** The rotation of Earth causes seasonal differences in the northern latitudes.
- D** The distance of Earth from the sun results in differences in sunrise times.

23 Which statement best describes the sunlight that affects the Northern Hemisphere on May 2?

- A** Earth is positioned on the hottest side of the sun during the spring.
- B** Earth is closer to the sun on this date than at any other time of year.
- C** The tilt of Earth on its axis causes sunlight to strike this area most directly.
- D** The position of Earth in its orbit causes sunlight to strike the area indirectly.



Acknowledgements

Fill 'Er Up....With Soybeans and Corn Please." Courtesy: United States Department of Agriculture.

"The Good, the Bad and the Algae." Courtesy of the Maryland Department of Natural Resources - www.maryland.gov