

Name _____

Teacher _____

Physical Science Test

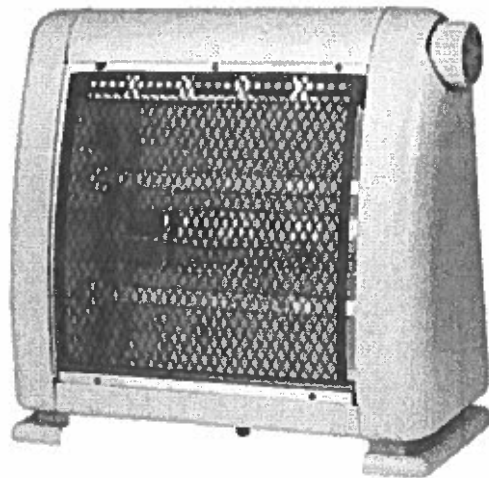
- 1 A student examines a sample of a white solid and makes the following prediction.

"I think this sample will sink in water."

What property of the substance has the student classified through observation?

- A Its density
- B Its solubility
- C Its mass
- D Its conductivity

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- 2 A student examines a space heater.



It plugs into a wall outlet and heats a room. It also buzzes and glows. This appliance uses energy in what form to operate?

- F Light
- G Sound
- H Electrical
- J Thermal

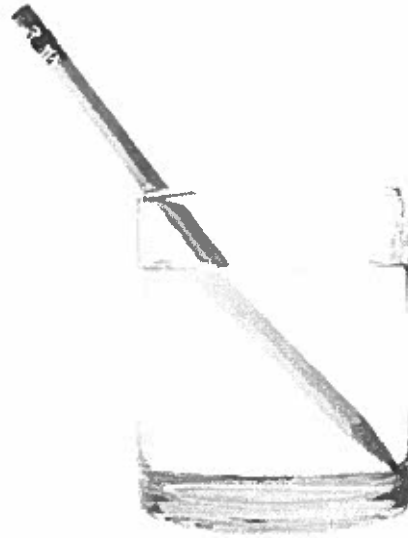
- 3** A student applies a force to their friend on a swing.



Which statement best describes how the force affects the person on the swing?

- A** Its changes their motion, but not their position.
- B** Its changes their position, but not their motion.
- C** Neither their position nor their motion change.
- D** Both their position and their motion change.

- 4 In this photograph of a pencil in a cup of water, the pencil appears to be broken. This illusion happens because of refraction.



Which part of this system causes the refraction?

- F The pencil getting wet
- G Light passing between air and water
- H The water absorbing some of the light
- J Energy stored in the pencil

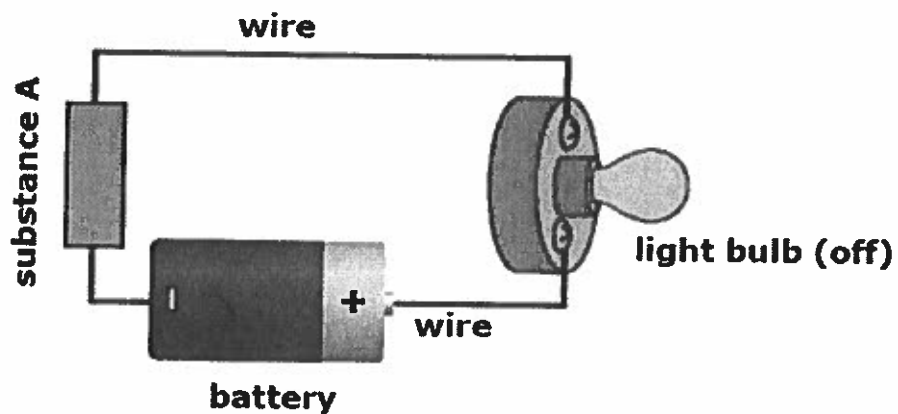
- 5 In class, students use a wind-up toy car for an investigation of force. They wind the car up as much as it will wind, then let it go on a horizontal surface. In different trials, these surfaces are used.

SURFACE
glass
wood
cardboard
cement

Which question could they be investigating?

- A How does surface texture affect the motion of the car?
- B How much force does surface texture add to the car's spring?
- C What is the mass of the car on surfaces of different textures?
- D Do surfaces of different textures change the gravity acting on the car?

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- 6 A student designs a circuit in order to demonstrate a property of substance A.



Which property of substance A does the circuit demonstrate?

- F It is not flexible.
- G It is made of metal.
- H It does not conduct electricity.
- J It cannot store energy.

- 7 A student puts a tea bag into a cup of hot water.



tea bag



tea bag in cup
of hot water

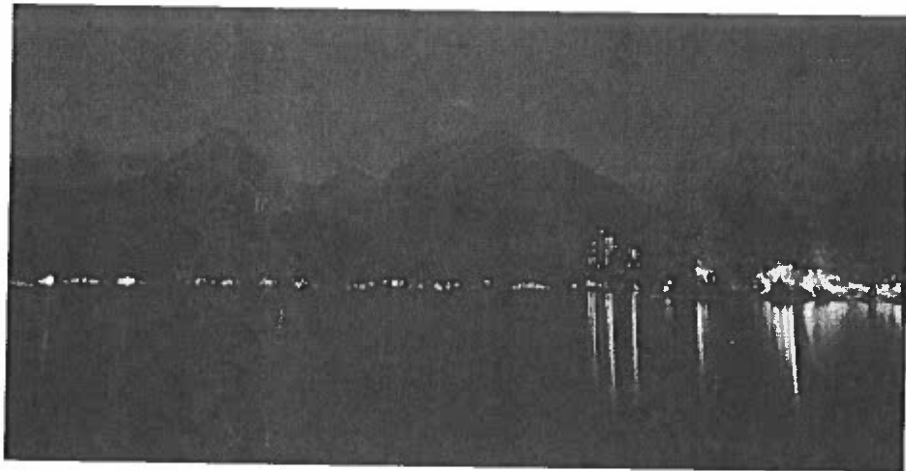
The student stirs and allows the water to cool. The student makes observations about the liquid in the cup.

Observations
brownish color
cinnamon flavor

Which statement best describes what happened when the student stirred the tea bag in the water?

- A New chemicals were formed.
- B A solution was formed.
- C The water changed state.
- D The tea turned into water.

- 8** A student looking at a lake at night sees rippling images of lights on the opposite shore.



These images demonstrate that light has which interaction with the lake?

- F** It refracts when it strikes the water.
- G** It reflects off its bottom.
- H** It reflects off its surface.
- J** It refracts when it strikes the bottom.
-
- 9** Ships carry extremely powerful horns that can be heard at a great distance. This is an example of which use of energy?
- A** Thermal energy used to cause flow of current.
- B** Electrical energy used to perform work.
- C** Mechanical energy used to produce sound waves.
- D** Sound energy used to transmit information.

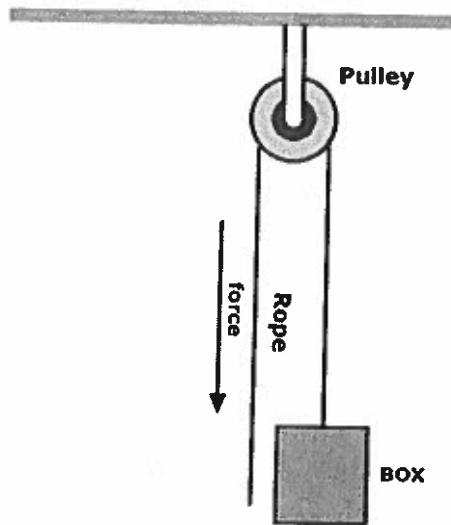
10 A student mixes sand and sugar. The student then stirs the mixture into water. The student is then able to pour out the liquid, leaving only sand. Which statement best explains how the student was able to separate this mixture?

- F** The sugar is soluble in water and the sand is not.
- G** The sugar and sand were both soluble in water.
- H** Neither the sugar nor the sand was soluble in water.
- J** The sand is soluble in water and the sugar is not.

11 A student wants to classify a 10 cm length of unidentified wire based on its electrical conductivity. Which materials would be appropriate for this investigation?

- A** A graduated cylinder, fresh water, and salt water
- B** A triple beam balance, a compass, and a thermometer
- C** 10 cm lengths of rubber, wood, and plastic ball
- D** A fresh battery, a light bulb, and copper wire

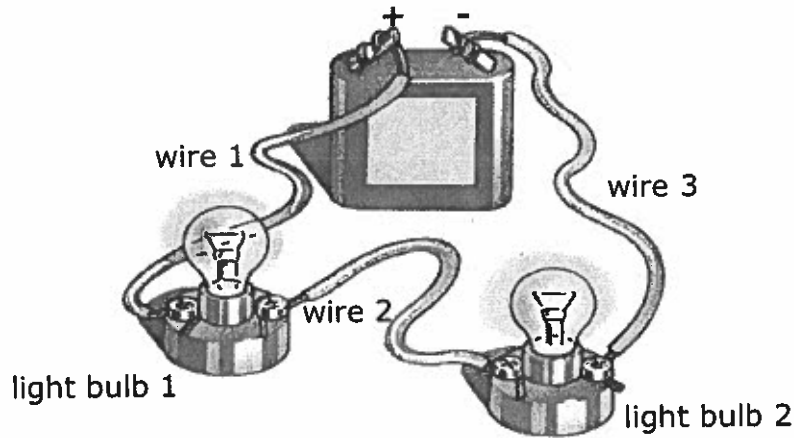
- 12** Students set up the following apparatus in science class.



They find they must constantly apply force to keep the box in place. Measuring the amount of force it takes to keep the box in place allows the student to identify which of the following?

- F** The downward force of gravity on the box.
 - G** The volume of the box.
 - H** The relative density of the box.
 - J** The temperature of the pulley wheel.
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- 13** For an investigation, a student is melting 75 grams of ice to find out how much liquid water it will produce. What must occur in the investigation for the student to be able to collect the information?
- A** The investigation must be performed in the school science lab.
 - B** The student must keep the ice sample in a frozen environment.
 - C** The mass of the ice sample must change when it melts in to ice.
 - D** The temperature of the ice must change.

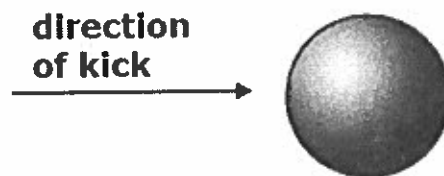
14 A student built the circuit below.



Which of the following changes would make light bulb 1 stay lit and light bulb 2 go out?

- F Remove wire 2 from light bulb 1 and connect it to the positive post on the battery.
- G Cut wire 3.
- H Remove wire 1 from the positive post on the battery and connect it to the negative post on the battery.
- J Remove wire 2 from light bulb 2 and connect it to the negative post on the battery.

15 A rubber ball rests in a field. A student kicks the ball.



Once the ball comes to rest, which of its properties will be different?

- A Motion
- B Position
- C Mass
- D Force

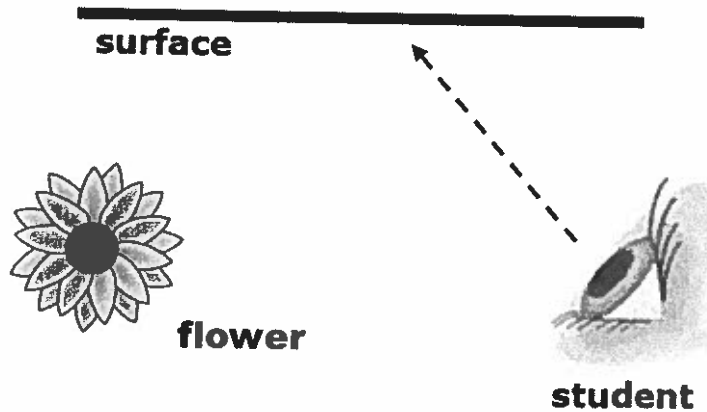
16 A student records the following observations.

CONDITION OF HANDS	CLEANING REQUIRED
sticky from sugar	water alone removes sticky feeling
greasy from olive oil	soap and water required to remove greasy feeling

Which classification do these observations support?

- F Both sugar and olive oil are soluble in water.
- G Sugar is not soluble in water, but olive oil is.
- H Neither sugar nor olive oil is soluble in water.
- J Sugar is soluble in water, but olive oil is not.

17 A student looks at a surface and sees a clear image of the flower.



Which statement about the surface is most likely correct?

- A It is made of soft dark cotton or linen.
- B It is made of hard shiny glass or metal.
- C It is made of white paper or cardboard.
- D It is made of rough wood or cement.

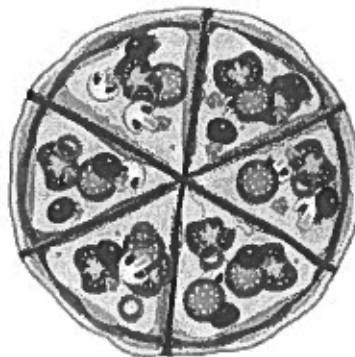
- 18** A glow stick is shown in the picture below. When two chemicals in it are mixed, it produces light for several hours.



What happens when the two chemicals are mixed?

- F** Energy stored in the chemicals is turned into light energy.
- G** Light energy that was reflected is refracted instead.
- H** Some of the mass of the chemicals is turned into light energy.
- J** Light energy enters the chemicals and then comes back out.

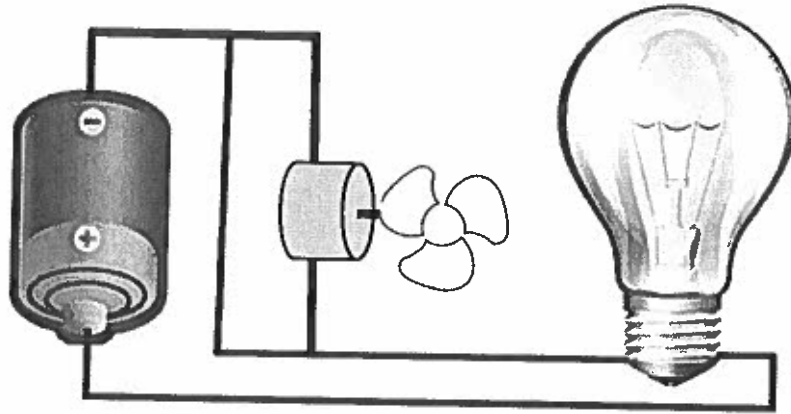
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- 19** Tyler made his favorite pizza that has different meats and vegetables.



Which answer best describes Tyler's pizza?

- A** A solution made of different meats and vegetables.
- B** A mixture of different meats and vegetables that keep their physical properties.
- C** A mixture of different meats and vegetables that change properties once they are mixed together.
- D** A mixture made of solids dissolving in liquid.

- 20 A student connects a light bulb and a small fan to a battery using copper wires, as shown below.



Once connected to the battery, the -

- F** light bulb will be on and the fan will not be turning.
- G** light bulb will be off and the fan will be turning.
- H** light bulb will be on and the fan will be turning.
- J** light bulb will be off and the fan will be off.

