DIRECTIONS

Choose the best answer choice for each of the following questions.

Substance	Flame Color
Barium	Yellow-green
Lithium	Crimson
Potassium	Violet
Strontium	Red
Copper	Blue-green

1. According to the chart, a substance that burns with a blue-green flame probably contains _____.

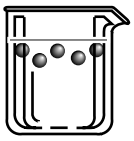
a. barium

b. lithium

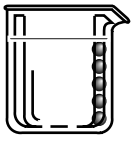
c. potassium

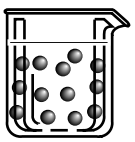
d. copper

2. José's science teacher told him that every part of a salt and water solution is identical. José wanted to collect samples to verify this statement. Which picture shows the sample that verifies this statement?

f. 

g. 

h. 

j. 

3. Mixtures can be either heterogenous or homogenous. Which of the following is characteristic of a homogenous mixture?

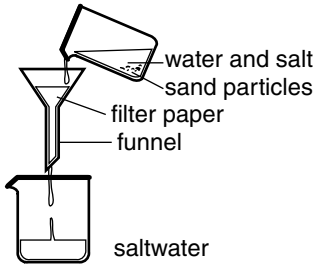
a. a mixture in which two or more substances are still distinguished

b. a mixture in which large particles are suspended

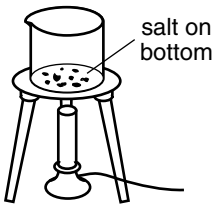
c. a mixture in which large particles are not suspended and eventually settle

d. a mixture in which two or more substances are evenly distributed

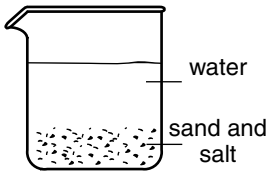
GO ON



Q



R



S

T

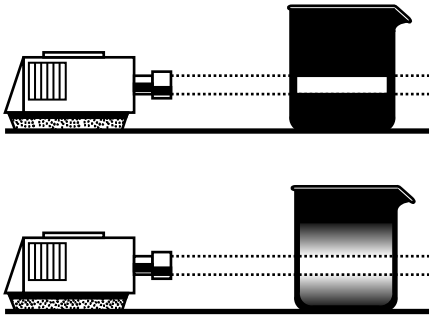
4. These pictures show the different steps in an experiment designed to separate a mixture of salt and sand. Which of these shows the steps in order, from first to last?

f. Q, S, R, T

g. R, T, Q, S

h. S, Q, T, R

j. T, R, S, Q



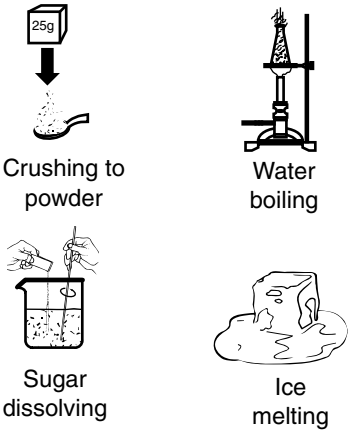
5. Which of these questions would most likely be answered by this experimental setup?

a. How do the particles in a suspension and a solution compare in their ability to scatter light?

b. How does light energy affect the rate at which particles dissolve in a suspension and in a solution?

c. Does light change the evaporation rate of a suspension or a solution?

d. How does light energy affect the temperature of a suspension and a solution?



6. What do these processes have in common?

f. They are all examples of chemical changes.

g. They are all examples of physical changes.

h. They are all examples of reactions that require the addition of heat energy.

j. They are all examples of unsafe laboratory techniques.

STOP

DIRECTIONS

Read each question. Then, on your answer sheet, mark the answer choice that you think is best.

1 **A beam of light from a flashlight is passed through four beakers containing four different substances. Which of these substances would scatter light the <u>least</u>?**

A saltwater

B milk

C muddy water

D paint

2 **Processes such as dissolving, melting, freezing, and evaporating can affect the appearance of a substance, but the identity of the substance remains the same. These processes are called**

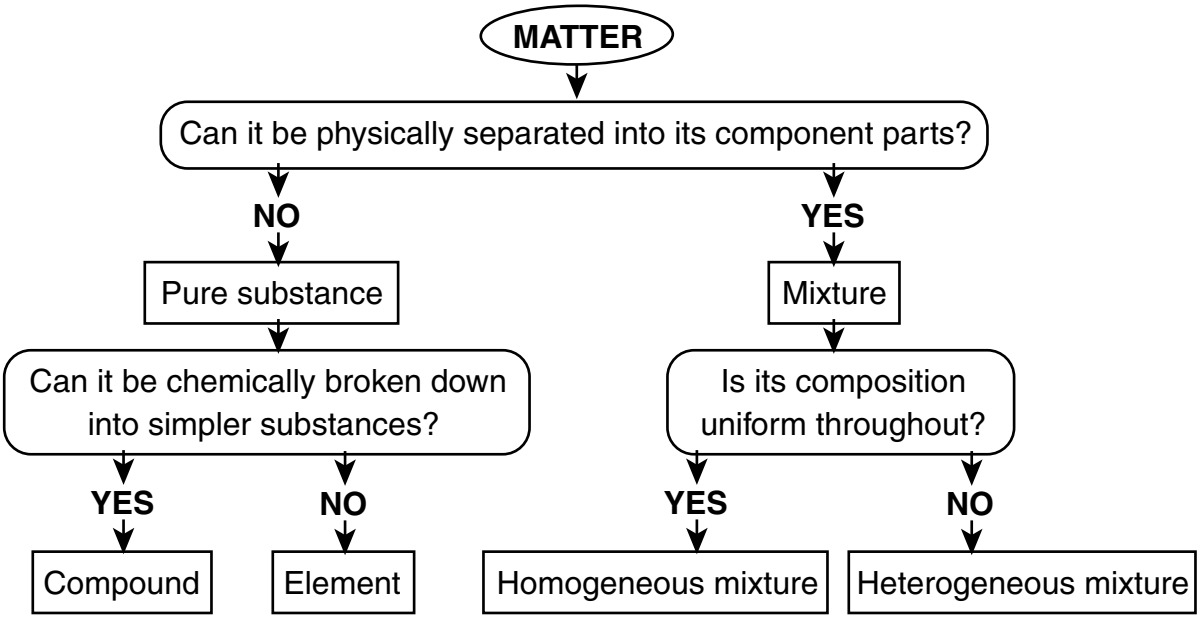
F chemical changes

G chemical properties

H physical changes

J physical properties

Directions: Use the information in the diagram to answer Number 3 below.



3 **According to the diagram, which of these statements is true?**

A Compounds cannot be broken down into simpler substances.

B Elements can be broken down into simpler substances.

C Heterogeneous mixtures have a uniform composition throughout.

D Homogeneous mixtures have a uniform composition throughout.

GO ON

4 **Most metallic elements, such as copper and iron, have high melting points. This is a useful property because**

F it keeps cars made of metal from becoming hot on summer days

G it enables people to use pots and pans made of metal to cook food

H it prevents machine parts made of metal from rusting

J it makes metals easier to melt so they can be poured into molds to make precision tools

5 **Which of the following does <u>not</u> make a solid dissolve faster in a liquid?**

A stirring the mixture

B heating the mixture

C using a smaller volume of liquid

D breaking the solid into smaller pieces

6 **Felipe took a sample of water from a creek in a glass beaker and placed the glass beaker on his desk. An hour later, he noticed that dirt had settled on the bottom of the beaker, leaving the rest of the water clear. What was the most likely cause of this?**

F Dirt does not dissolve easily in water taken from a creek.

G Felipe should have taken a larger sample of creek water.

H Felipe did not leave the creek water on his desk long enough to allow the dirt to dissolve.

J Felipe's sample of creek water was a suspension that settled when allowed to stand.

Directions: Read Number 7 below. Then, on your answer sheet, write your answer in complete sentences.

7 **The law of conservation of mass states that the mass of all the substances present before a chemical change equals the mass of all the substances remaining after the change. Design an experiment to verify this law.**