

Module 1: Matter

Lesson 1: Identify Properties of Materials

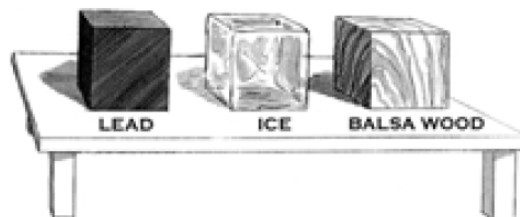
1. How are you able to determine the physical properties of a substance?

- A. By using the senses to smell, taste, hear, feel, or see it
- B. By comparing it to the substances that surround it
- C. By determining its placement on the periodic table of elements
- D. By observing its shape and reflectivity

2. The maximum amount of a substance that can be dissolved by another substance is called the ____.

- A. conductivity
- B. solubility
- C. solvent
- D. colloid

3. Anita places three cubes on a table. One cube is lead, the second is ice, and the third is balsa wood. The sides of each cube are exactly 3.5 centimetres long.



Which do all three cubes have in common?

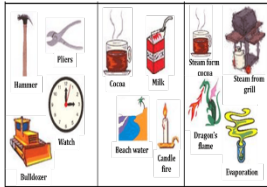
- A. the same mass
- B. the same weight
- C. the same volume
- D. the same temperature

4. The ability of matter to dissolve in a liquid is called ____.

- A. solubility
- B. reflectivity
- C. conductivity
- D. magnetism

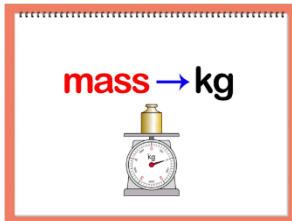
5. Which property measures the amount of space an object takes up?

- A. reflectivity
- B. mass
- C. solubility
- D. volume



Matter

Any thing that has mass and takes up space.



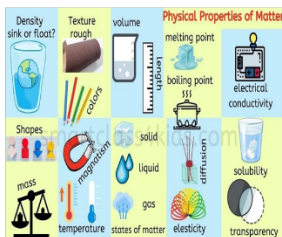
Mass

Is a measure of amount of matter in an object.



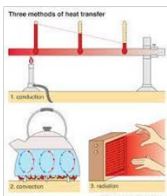
Volume

The amount of space an object takes up. it describes how large or small an object is.



Physical properties

Can be observe without changing the material.



Conductivity

Describes how heat or electricity can move throw material



Reflectivity

Is the way light reflects or bounces off, an object.



Solubility

Is the ability of matter to dissolve in a liquid.



Magnetism

Is the ability of material to be attracted to a magnet.



Chemical properties

Is a characteristic that can only be observed when there is a **change** in the type of matter.



Flammability

Is the ability of material to burn.

6. Which of the following is a property that describes how energy moves through materials?

- A. Combustibility
- B. Conductivity
- C. Reflectivity
- D. Solubility

Lesson 2: Mixtures and Solutions

1. Sweet Tea, everything is mixed evenly and looks the same.

- A. Heterogeneous Mixture
- B. Homogeneous Mixture

2. Hamad combines water, sugar, and lemon juice to form lemonade. What type of substance was made?

- A. Element
- B. Molecule
- C. Mixture
- D. Compound

3. Which of the following is an example of a heterogenous mixture?

- A. soap
- B. a salad with lettuce, olives, and tomatoes
- C. cup of coffee
- D. water

4. Which of the following selections are the different types of mixtures?

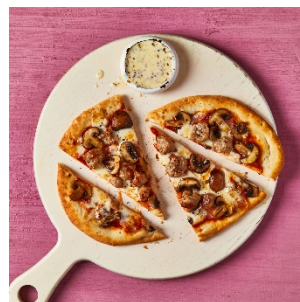
- A. heterogenous, homogenous
- B. acid, base
- C. metal, nonmetal
- D. element, compound

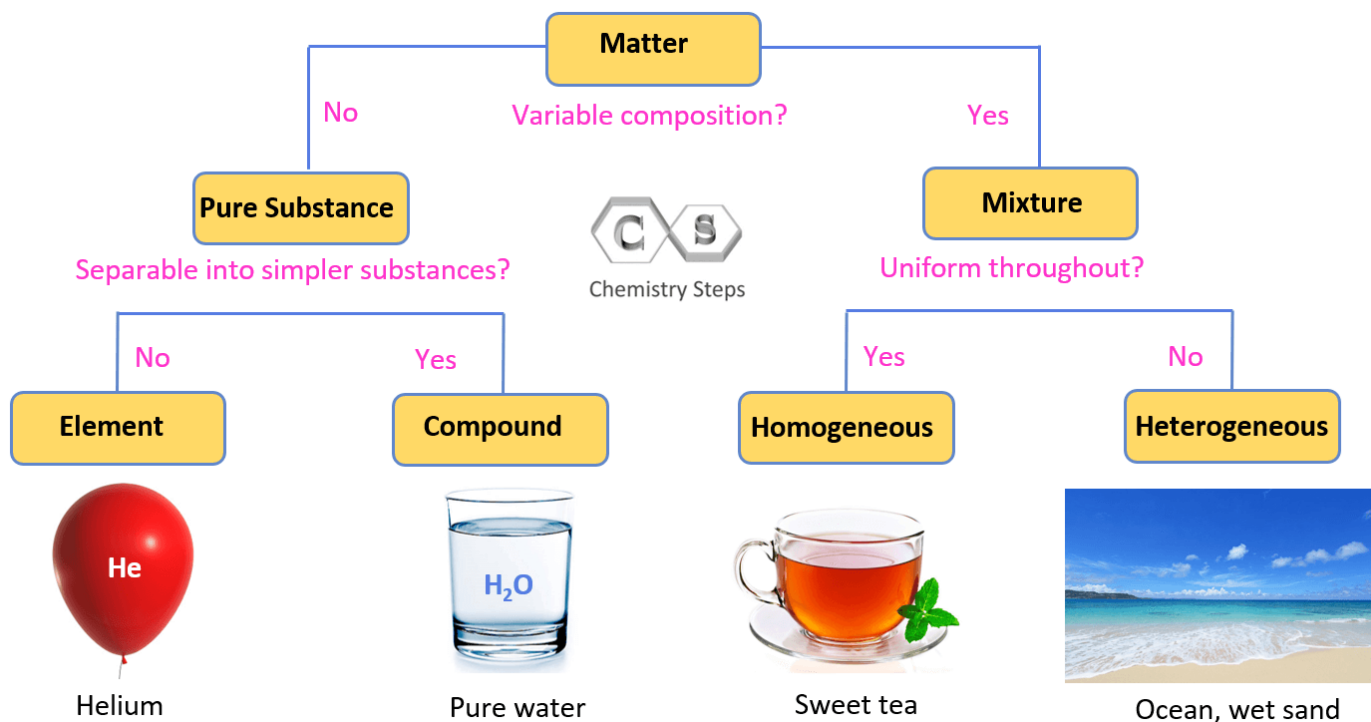
5. Freshly brewed black coffee

- A. Heterogeneous
- B. Homogeneous

6. Sausage and mushroom pizza

- A. Heterogeneous
- B. Homogeneous





Mixture

Is a physical combination of two or more substances.



Colloid

Is a heterogeneous mixture in which the particles are so small that they don't settle out like fog.



Solution

Is a homogeneous mixture it contains dissolved minerals and gases.

7. A ____ is a physical combination of two or more substances.

- A. suspension
- B. mixture
- C. matter
- D. solution

8. Smoke is an example of a ____ because its suspended particles are small enough that they do not settle.

- A. colloid
- B. suspension
- C. positive
- D. negative

9. Rebecca made a mixture of raisins, nuts, and dried fruit for a snack. Which kind of mixture was Rebecca's snack?

- A. solution
- B. colloid
- C. heterogeneous mixture
- D. suspension

10. While sitting in your house, you notice that there are particles of dust floating in the air. These particles of dust that are suspended in the air are an example of a(n) ____.

- A. solid
- B. solution
- C. aerosol
- D. gas

11. Which of the following would make sugar dissolve faster in a cup of water?

- A. Add cold water and stir.
- B. Let water evaporate away.
- C. Add warm water and stir.
- D. Add more sugar and stir

Which of the following best describes the whipped cream mixture?



- A. colloid
- B. suspension
- C. Solution
- D. Homogenous mixture

The graph shows Hamada's snack of raisins, nuts, and dried fruit.

Which kind of mixture was Hamada's snack?



- A. colloid
- B. suspension
- C. Solution
- D. Heterogenous mixture

Lesson 3: Physical and Chemical Changes

1. Determine which of the following scenarios would result in a chemical change.

- A. Ice cubes melting in a glass of water
- B. Wood burning in a campfire
- C. Power plants providing electricity to a city.
- D. Butter melting in a pan

2. Which is an example of a physical change?

- A. a candle burning
- B. rust on a bicycle
- C. ice cream melting
- D. a firework exploding

3. Which of the following describes an example of a chemical change?

- A. a piece of glass breaking
- B. tearing a piece of paper
- C. shaping a piece of clay
- D. rust forming on a car

4. Which kind of change alters the shape of an object without changing what type of matter it is?

- A. chemical change
- B. physical change
- C. gradual change
- D. sudden change

5. Which is an example of a chemical change?

- A. a ball of clay is split in two
- B. a piece of wood is splintered
- C. a coin rusts
- D. salt and pepper are mixed

6. Which of the following signs can be observed in both physical and chemical changes?

- A. Temperature change
- B. Formation of solid precipitate
- C. Odor change
- D. Rust



Physical change

Begins and ends with the same kind of matter



Chemical change/reaction.

Is a change that produce new matter.

Which of the following is not a physical change?



fire works
الالعاب النارية

E



evaporation
التبخير

D



burning
الاحتراق

C



cloud formation
تشكل الغيوم

B



melting
الانصهار

A

A & D

B & C

C & A

E & C

Which of the following is not a physical property of materials?

- A. Combustibility
- B. Conductivity
- C. Reflectivity
- D. Solubility

Signs of a Chemical Change

Release of Energy



Formation of Gas and Bubbles



Color Change



Odor



Formation of Precipitate






Tarnish

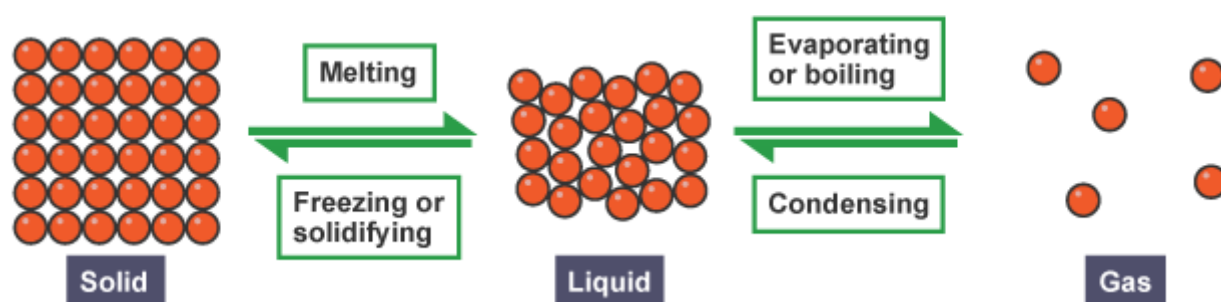


Lesson 4: Solids, Liquids, and Gases

Important Basic Notes

State	Solid	Liquid	Gas
Closeness of particles	Very close	Close	Far apart
Arrangement of particles	Regular pattern	Randomly arranged	Randomly arranged
Movement of particles	Vibrate around a fixed position	Move around each other	Move quickly in all directions
Energy of particles	Low energy	Greater energy	Highest energy
2D diagram			

Volume	definite	definite	no definite
Shape	definite	no definite	no definite



Solid

Has a definite shape and takes up a definite amount.



liquid

Has a definite volume but it does not have a definite shape.



Gas

Have no definite shape or volume.

Conservation of mass

Matter is neither created or destroyed during physical change or chemical reaction.

1. Which is not one of the three common forms of matter?

- A. solid
- B. liquid
- C. gas
- D. density

As the picture shows, a spoonful of salt with a mass of 10 grams was added to a cup of water that has a mass of 300 grams. What do you predict will be the total mass of the saltwater when the salt is dissolved in the water?



- A. More than 300 grams
- B. less than 300 grams
- C. 300 grams
- D. We cannot predict

During an experiment you add heat energy to a liquid. What state of matter will the liquid become?

- A. solid
- B. liquid
- C. gas
- D. metal

The illustration below represents floating Ice cubes.

Which of the following **is true** concerning water?



- A. Liquid water has a definite shape and definite volume
- B. Solid water has a definite shape and no definite volume
- C. When liquid water changes to solid water, the total volume of particles will increase
- D. When solid water changes to liquid water, the total volume of particles will increase

The graph below shows three different states of water. Which one of the following describes the state of water, which has a definite shape, a definite volume and its particles are tightly packed and vibrate in place?



Solid state
Liquid state
Gas State
Density

why mass is conserved in a chemical reaction?

because the new substances created are composed of atoms that were present in the reactants