
Unit 6
MATTER!
CHANGES IN MATTER

WHAT IS MATTER??

MATTER IS EVERYTHING THAT FORMS THE UNIVERSE AND OCCUPIES SPACE.

WHAT ARE THE TWO PROPERTIES OF MATTER?

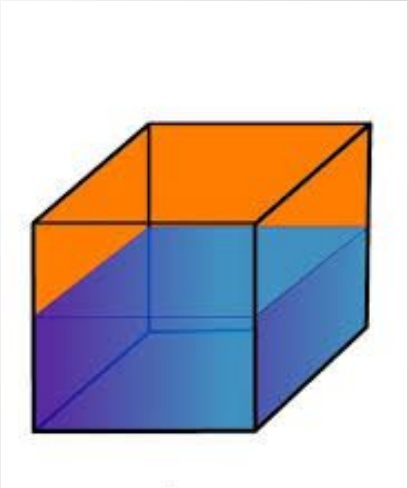
GENERAL AND SPECIFIC PROPERTIES

THE TWO GENERAL PROPERTIES OF MATTER

GENERAL PROPERTIES ARE COMMON TO ALL TYPES OF MATTER

1. MASS: QUANTITY OF MATTER
   - KILOGRAMS (KG)
   - GRAMS (G)

2. VOLUME: THE SPACE OCCUPIED
   - OBJECT: CUBIC METERS (M^3) OR CUBIC CENTIMETERS (CM^3)
   - LIQUID: LITRES (L) AND MILLILITRES (ML)



specific properties of matter

specific properties differentiate between different types of matter

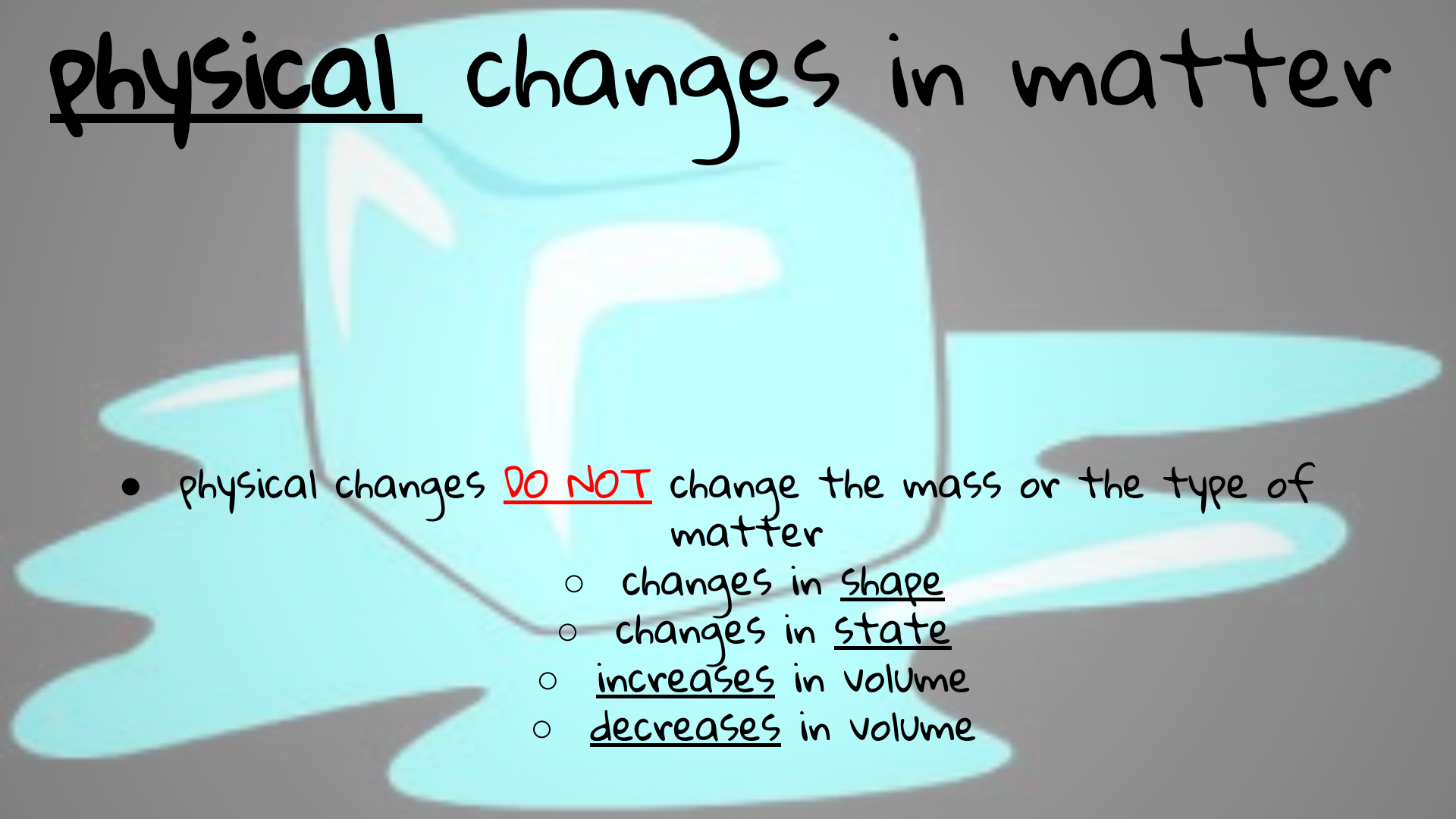
two examples: color and density

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

density is the division between the mass and volume

- every object has a different density

physical changes in matter



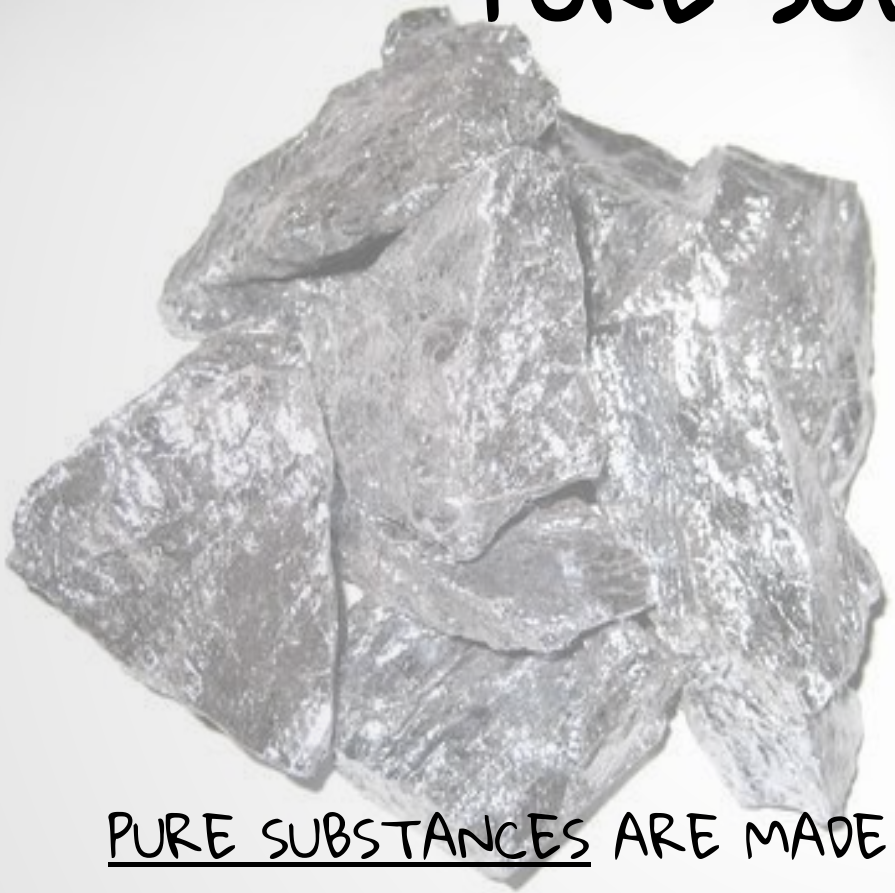
- physical changes DO NOT change the mass or the type of matter
  - changes in shape
  - changes in state
  - increases in volume
  - decreases in volume

chemical changes in matter

chemical changes happen when two or more substances are COMBINED

they react to each other and produce new substances called PRODUCTS

PURE SUBSTANCES



PURE SUBSTANCES ARE MADE OF ONLY ONE TYPE OF MATTER

examples: iron, quartz, and gold

MIXTURES AND SOLUTIONS

MIXTURES

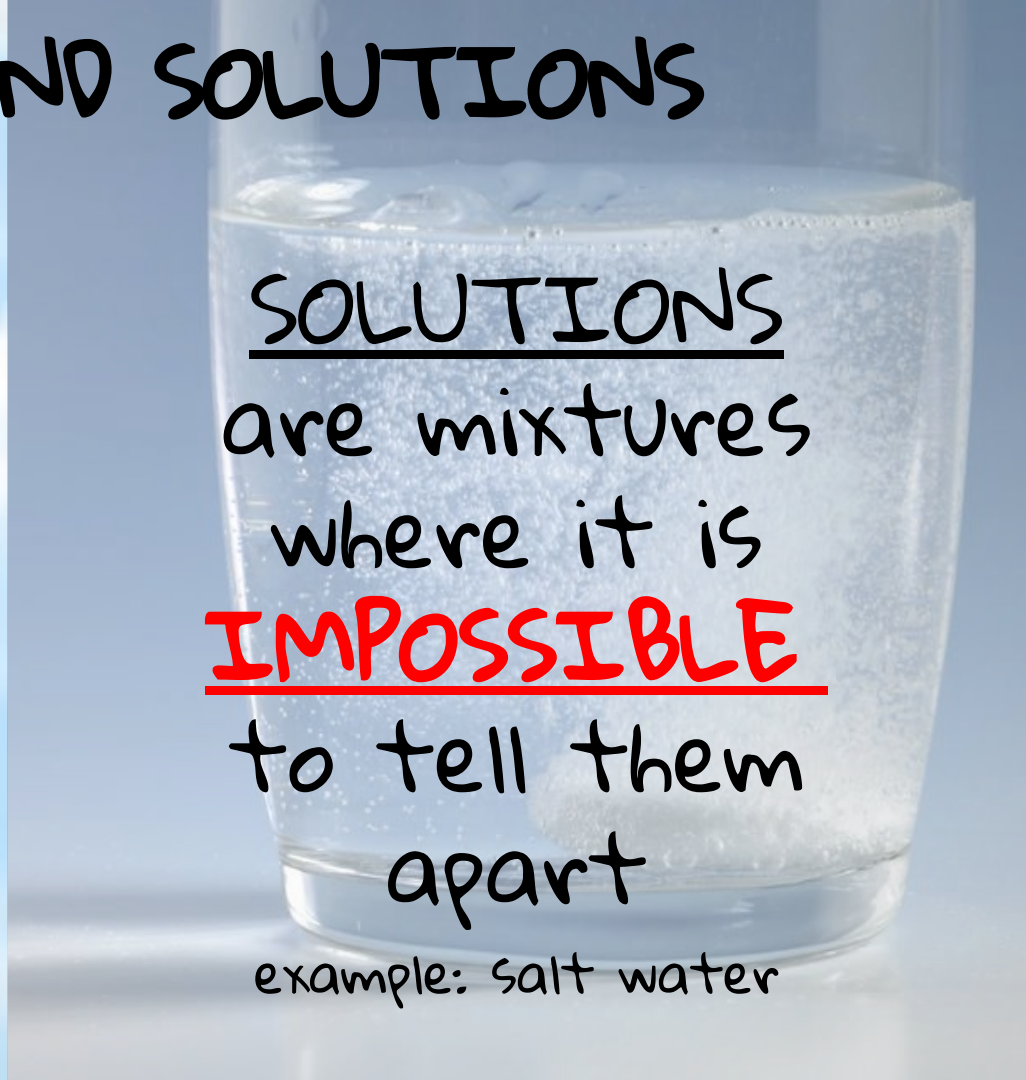
are formed of **MORE THAN ONE** type of matter

example: air

SOLUTIONS

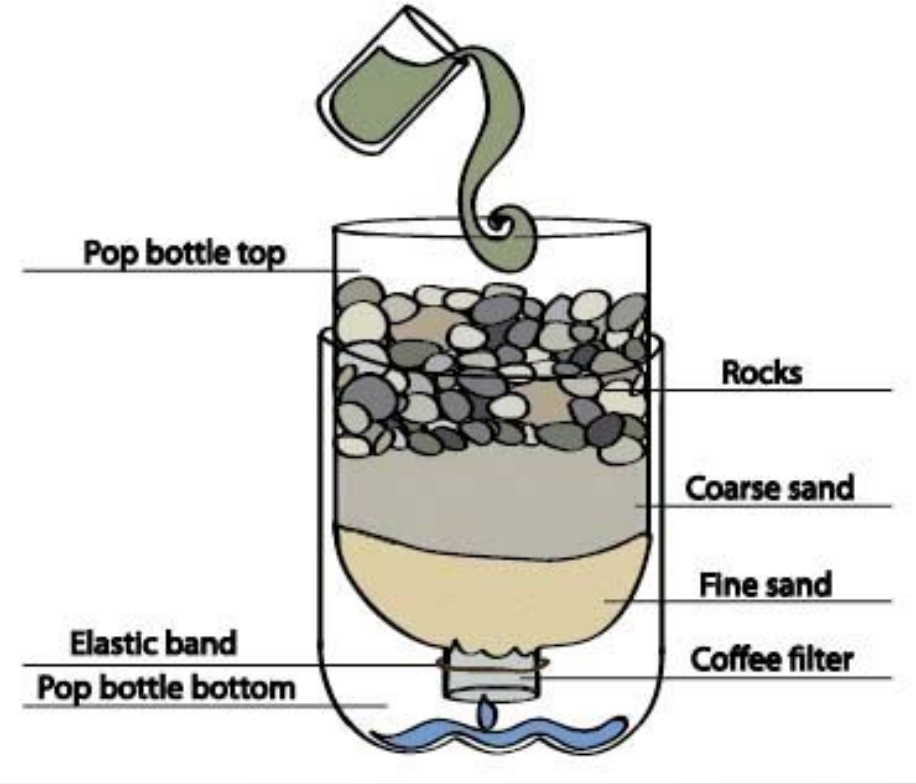
are mixtures where it is **IMPOSSIBLE** to tell them apart

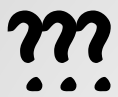
example: salt water



WAYS TO SEPARATE THE COMPONENTS OF A MIXTURE

1. FILTRATION
   - TO SEPARATE A SOLID FROM A LIQUID
2. DECANTING
   - TO SEPARATE COMPONENTS OF DIFFERENT WEIGHTS
     - EXAMPLE: OIL AND WATER
3. MAGNETISM
   - TO SEPARATE COMPONENTS ATTRACTED TO MAGNETS
4. EVAPORATION
   - TO OBTAIN SALT FROM WATER





What are the two types of general properties of matter?

MASS AND VOLUME

How do you find the density of an object?

DIVIDE THE MASS AND THE VOLUME

What is the difference between physical and chemical changes?

PHYSICAL CHANGES DO NOT CHANGE THE MATTER AND CHEMICAL CHANGES REACT AND PRODUCE NEW SUBSTANCES

What are three examples of pure substances?

IRON, GOLD, QUARTZ

What is a component?

THE DIFFERENT TYPES OF MATTER IN A MIXTURE

What are the four ways to separate components from a mixture?

FILTRATION
DECANTING
MAGNETISM
EVAPORATION