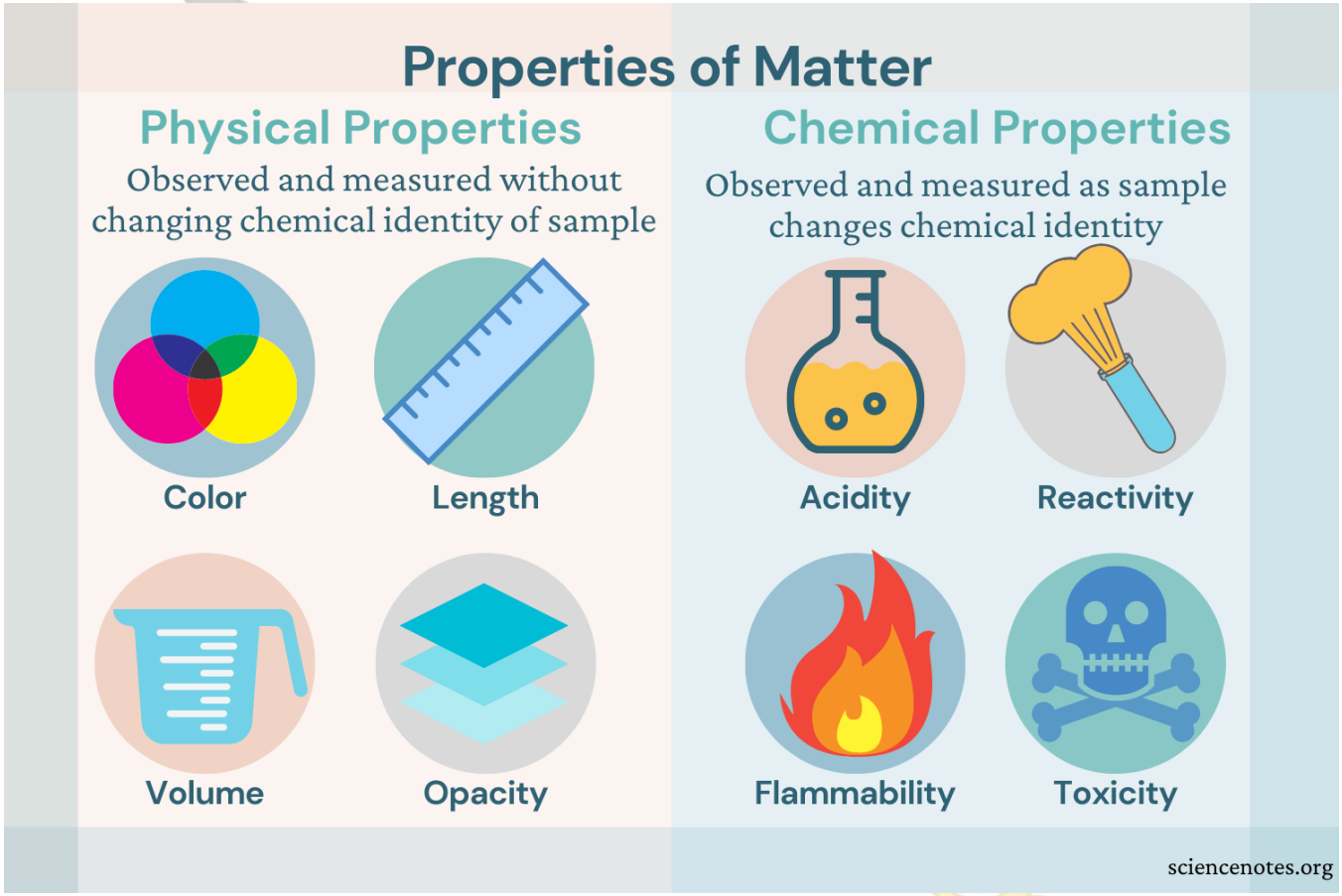
D. Properties

Properties

Properties are characteristics or qualities that describe an object or substance. Everything around us, from the tiniest grain of sand to the tallest mountains, has its own unique properties. These properties help us identify and understand the things we encounter in our daily lives.



Physical Properties

Physical properties are attributes that can be observed or measured without changing the substance's identity. Some common physical properties include:

1. **Size**
   Size tells us how big or small an object is. We can measure size using tools like rulers, tape measures, or scales.

2. **Shape**
   Shape describes the form of an object. Things can be round, square, triangular, or have irregular shapes.

3. **Color**
   Color refers to the appearance of an object when light reflects off its surface. We see various colors, such as red, blue, green, and yellow.

4. **Texture**
   Texture describes how an object feels when touched. For example, something can be smooth, rough, bumpy, or soft.

5. **Density**
   Density tells us how tightly packed the particles of a substance are. Objects with higher density are heavier and sink in water, while those with lower density float.

6. **State of Matter**
   Matter can exist in three states: solid, liquid, and gas. Solids have a fixed shape and volume, liquids take the shape of their container, and gases have no fixed shape or volume.

Chemical Properties

Chemical properties describe how a substance reacts with other substances and how it changes chemically. Some common chemical properties include:

1. **Flammability**
   Flammability tells us if a substance can catch fire and burn. Materials like paper and wood are flammable, while metals are not.

2. **Reactivity**
   Reactivity refers to how a substance interacts with other substances to form new ones. Some substances react easily, while others are more stable and less likely to react.

3. **Corrosiveness**
   Corrosiveness indicates if a substance can cause other materials to wear away or deteriorate over time.

4. **Toxicity**
   Toxicity tells us if a substance is harmful and can cause illness or injury to living things.

Chemical and Physical Changes

Properties help us identify whether a change is physical or chemical. Physical changes only affect the appearance of a substance, while chemical changes result in the formation of new substances. For example:

1. **Physical Change**
   Melting an ice cube. The ice changes from a solid to a liquid, but it's still water.

2. **Chemical Change**
   Burning wood. The wood combines with oxygen to form ash and smoke, resulting in the production of new substances.

1. What are properties?
    A) Observations made using a microscope
    B) Characteristics or qualities that describe an object
    C) Actions performed by living organisms
    D) A type of food that gives us energy

2. Which property tells us how tightly packed the particles of a substance are?
    A) Size
    B) Density
    C) Color
    D) Flammability

3. Which of the following is a physical property?
    A) Reactivity
    B) Density
    C) Corrosiveness
    D) Toxicity

4. Which state of matter takes the shape of its container?
    A) Solid
    B) Liquid
    C) Gas
    D) Plasma

5. What is an example of a chemical change?
    A) Melting ice cream
    B) Boiling water
    C) Burning paper
    D) Cutting a piece of fruit

6. Which property tells us if a substance can catch fire and burn?
    A) Flammability
    B) Reactivity
    C) Density
    D) Corrosiveness

7. What are two examples of physical properties?
    A) Flammability and reactivity
    B) Color and texture
    C) Density and toxicity
    D) Boiling and freezing points

8. Which of the following is a chemical property?
    A) Shape
    B) Size
    C) Color
    D) Reactivity

9. What does density tell us about a substance?
    A) Its color
    B) Its size
    C) How tightly packed its particles are
    D) Its shape

10. Which of the following is a chemical property?
    A) State of matter
    B) Shape
    C) Texture
    D) Corrosiveness

ANSWERS & EXPLANATIONS

1. B - Characteristics or qualities that describe an object.
    - Properties are characteristics or qualities that describe an object or substance.

2. B - Density.
    - Density tells us how tightly packed the particles of a substance are.

3. B - Density.
    - Density is a physical property that describes how tightly packed the particles of a substance are.

4. B - Liquid.
    - A liquid takes the shape of its container.

5. C - Burning paper.
    - Burning wood is an example of a chemical change as it results in the formation of new substances, ash, and smoke.

6. A - Flammability.
    - Flammability tells us if a substance can catch fire and burn.

7. B - Color and texture.
    - Color and texture are two examples of physical properties.

8. D - Reactivity.
    - Reactivity is a chemical property that describes how a substance interacts with other substances to form new ones.

9. C - How tightly packed its particles are.
    - Density tells us how tightly packed the particles of a substance are.

10. D - Corrosiveness.
    - Corrosiveness is a chemical property that indicates if a substance can cause other materials to wear away or deteriorate over time.