

E. PHYSICAL CHANGES

Changing Phases: Matter's Physical Transformations

Have you ever wondered how matter can transform and change its appearance? Well, matter can go through different physical changes and shift from one phase to another. Let's explore the fascinating world of matter's physical transformations and learn about its different phases. Matter is everything around us. It can be found in various forms like solids, liquids, and gases. Each of these forms is called a phase. Matter can change from one phase to another through physical changes.

Solids are a type of matter that have a definite shape and size. When something is solid, it means it doesn't change shape easily. Think of your toys, books, and even the ground beneath your feet. They are all examples of solids. They feel steady and strong because their particles are tightly packed together. **Liquids** are another phase of matter. They are substances that flow and take the shape of their container. Think of water, milk, or juice. When you pour them into a glass, they fill up the shape of the glass. Liquids can also change shape easily, like when you pour water from one cup to another. This ability to flow and take the shape of their container is what makes liquids unique. **Gases** are the third phase of matter. Unlike solids and liquids, gases are invisible. You can't see them, but you can feel them around you. Gases can fill any container and expand to fill the entire space available. Think about the air you breathe. It is a gas! It's all around you, even though you can't see it.

Physical Changes and Phase Transformations:

Matter can change from one phase to another through physical changes. These changes can happen when we apply heat or cold to matter or when we remove heat from it. Melting solid to liquid; when we heat a solid, like ice, it changes to a liquid. This process is called melting. Think about what happens when you leave an ice cube outside on a hot day. It slowly melts and turns into water. The ice goes from being solid to liquid.

On the other hand, when we cool a liquid, it changes to a solid. This process is called freezing. For example, if you put water in the freezer, it will freeze and turn into ice. The liquid water changes to a solid ice. When a liquid is heated, it can change to a gas. This process is called evaporation. Imagine leaving a bowl of water out in the sun. Over time, the water will slowly evaporate and turn into water vapor, which is a gas. Condensation is the opposite of evaporation. When a gas cools down, it can change back into a liquid. Think about what happens when you breathe on a cold window. Your warm breath turns into tiny water droplets on the glass. That's condensation!

Now, let's test your understanding with some multiple-choice questions:

1. What is a phase?
 - a) A type of food
 - b) A form of matter
 - c) A shape

2. Which phase has a definite shape and size?
 - a) Solid
 - b) Liquid
 - c) Gas

3. Which phase takes the shape of its container?
 - a) Solid
 - b) Liquid
 - c) Gas

4. What is the phase of matter that is invisible?
 - a) Solid
 - b) Liquid
 - c) Gas

5. What is the process called when a solid changes to a liquid?
 - a) Melting
 - b) Freezing
 - c) Evaporation

6. What is the process called when a liquid changes to a solid?
 - a) Melting
 - b) Freezing
 - c) Evaporation

7. What is the process called when a liquid changes to a gas?
 - a) Melting
 - b) Freezing
 - c) Evaporation

8. What is the process called when a gas changes to a liquid?
 - a) Melting
 - b) Freezing
 - c) Condensation

E. Answers

1. b) A form of matter

Explanation: A phase is a form of matter like solid, liquid, or gas.

2. a) Solid

Explanation: Solids have a definite shape and size.

3. b) Liquid

Explanation: Liquids take the shape of their container.

4. c) Gas

Explanation: Gases are the phase of matter that is invisible.

5. a) Melting

Explanation: The process of a solid changing to a liquid is called melting.

6. b) Freezing

Explanation: The process of a liquid changing to a solid is called freezing.

7. c) Evaporation

Explanation: The process of a liquid changing to a gas is called evaporation.

8. c) Condensation

Explanation: The process of a gas changing to a liquid is called condensation.