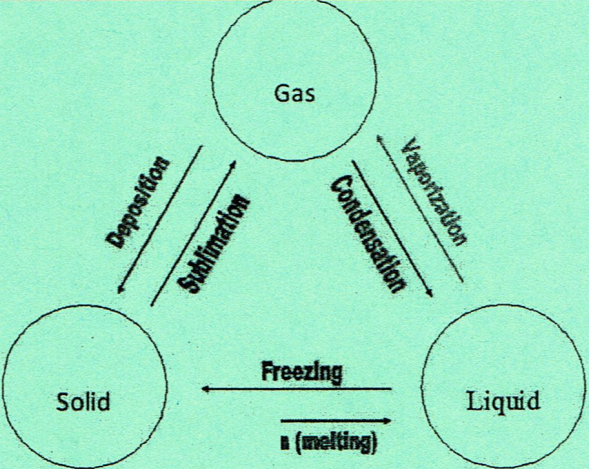


Physical Changes: Changes an object or substance undergoes that do not change its chemical nature.

<p>Phase Changes or States of Matter</p> <p>Example: Water's <u>chemical</u> formula is H_2O. Changing it from an ice cube to melted water or from melted water to steam does not change its formula. This is why phase changes are physical changes.</p>	 <p>The diagram shows three circles representing the states of matter: Gas at the top, Solid at the bottom left, and Liquid at the bottom right. Arrows indicate the following transitions: <ul style="list-style-type: none"> Gas to Solid: Deposition Solid to Gas: Sublimation Gas to Liquid: Condensation Liquid to Gas: Vaporization Liquid to Solid: Freezing Solid to Liquid: (melting) </p>
<p>Measurement</p>	<p>Changing the size or <u>shape</u> of something is a physical change. You are not changing what it is. Examples include: Length, <u>weight</u>, height, changing something from a square to a round shape, etc.</p>
<p>Mixtures</p>	<p>If no reaction is taking place it's physical. A good way to decide is to consider if it can be <u>separated</u> back out. Example: Sugar water.</p>

Chemical Changes: Changes an object or substance undergoes that cause it to become a new or different substance.

<p>Color Change</p>	<p>Chemical reactions can be observed by color change. If the new material(s) is a <u>different</u> color than the starting material(s) it is a chemical change.</p>
<p>Burning</p>	<p>Burning is <u>irreversible</u>. The reaction leads to a new substance that is chemically different than the starting substance.</p>
<p>Reactions that release energy</p>	<p>A chemical change can be observed when a reaction releases heat, <u>light</u>, and/or sound energy. Example: Fireworks</p>
<p>Rusting (oxidation)</p>	<p>Iron and steel rust when they come into contact with water and <u>oxygen</u>. The rust is a new substance that is formed.</p>
<p>Tarnishing</p>	<p>Other metals lose their shine due to coming in contact with air, <u>water</u>, or dirt. This tarnish is the formation of a new substance.</p>
<p>Decaying</p>	<p>When a substance decays, it is being slowly <u>broken</u> down into its basic <u>parts</u>. Once something decays, it cannot be converted back to the original substance.</p>
<p>Digestion</p>	<p>Digestion is the breakdown of food into more basic <u>components</u> or parts. When a substance is digested, it starts as one thing, goes through many changes, and ends as something completely different.</p>