Physical/Chemical Properties

on back:

substance \( \equiv \) matter that has a definite composition; also known as a chemical

Physical Change \( \equiv \) a change which alters a substance without changing its composition.
(a phase change is a physical change of a substance from one state of matter to another)

ex. water \( \rightarrow \) steam \( 
\rightarrow \) ice

change \( \equiv \) a process that involves one or more substances changing into new substances
(the properties of the products are different)

Law of Conservation of \( \equiv \) - Mass is neither created nor destroyed during a chemical reaction

Physical/Chemical Changes

on back:

The Law of Conservation of Mass

\[
\text{mass}_{\text{reactants}} = \text{mass}_{\text{products}}
\]
compound ≡ pure substance that cannot be separated into simpler substances

Element ≡ pure substance made of two or more different elements combined chemically in a definite proportion by mass

- the properties of a compound are different from those of its elements
- a compound always has the same composition

**Compound**

To separate mixtures - use a process based on the different physical properties of the components

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<td>sand in water</td>
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**Separating Mixtures**
Matter

**on back:**
- All things are made of matter
- Matter can be either a mixture or a pure substance
  - A **mixture** is a combination of two or more pure substances that retain their chemical properties
  - A **heterogeneous** mixture does not blend smoothly and is not uniform. ex. salad dressing, OJ
  - A **homogeneous** mixture blends smoothly and is uniform throughout. ex. solutions, alloys
  - Mixtures can be described as suspensions, colloids, or solutions based on the size of the particles.