

Matter (SC.5.P.8.1, SC.5.P.8.3, & SC.5.P.9.1) Review Poster

THE THREE STATES OF MATTER

SOLID



Particles are really close together. They are not moving much, not a lot of energy. The shape and volume (how much space it takes up) both stay the same.

LIQUID



Particles have a little space between them. They are moving a little faster and have more energy. The liquid takes the shape of its container, the volume stays the same.

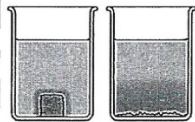
GAS



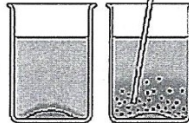
Particles have a lot of space between them. They are moving really fast and have loads of energy. The shape and volume both change, filling up all of the space.

Dissolving Materials in Water

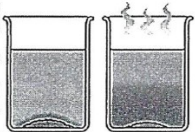
Some materials, like sugar and salt, dissolve in water. Other materials, like sand and pepper, do not dissolve in water. Conditions that affect dissolving are:



← Breaking a material into smaller parts speeds up dissolving.



Stirring speeds up dissolving. →



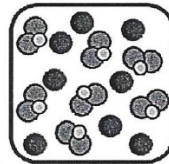
← Heat speeds up dissolving.

Matter

Matter is anything that has mass and takes up space. Physical properties of matter include mass, shape, volume, color, texture, odor, temperature, taste, hardness, and attraction to magnets.

Mixture

Mixtures are made from two or more substances physically blended together. Mixtures are not chemically combined; they do not create a new substance different from the ones mixed. Mixtures can be separated based on observable properties of their parts, such as particle size (sand separated from water with a coffee filter), shape and color (visible properties), magnetic attraction (iron filings attracted to a magnet), and evaporation (to separate salt from water).



PHYSICAL CHANGE

A physical change does not create a new substance. The substance can change in color, size, shape, temperature, or state, but it is STILL the same substance. For example, when liquid water turns to ice (it freezes), it is still water, but in a solid state. When ice melts it turns to liquid water. Both ice and liquid water are made of the same thing... WATER!



Chemical Change

A chemical change occurs when the change results in the formation of a NEW substance. You cannot get back the original material!! For example, rust is a chemical change because new chemical bonds were created. Other ones are food decaying, something burning, or something being cooked or baked.



How can you tell if it is a chemical change? Some signs are a change in color, a formation of a gas, a formation of a solid, fizzing or burning, or a change in temperature.

Evaporation
liquid to gas

Melting
solid to liquid

Condensation
gas to liquid

Freezing
liquid to solid