Class Notes Unit 7 Objectives 5 & 6

Objective 6: Categorize substances as elements, compounds, mixtures and pure substances.



Elements: Calcium, Oxygen, Chlorine

* Broken down by nuclear means

Compounds: NaCl, H20

* Broken down by chemical means

Heterogeneous: pond water, chili

(Suspension: parts settle over time)

* Broken down by physical means

Homogeneous: salt water, tap water, air, Kool-aid (Solution: well-mixed mixture)

* Broken down by physical means

Objective 5: Distinguish between chemical and physical properties of matter.

**Physical Properties**

* Definition: any characteristic of a material that can be observed or measured without changing the composition of the substances in the material
* EX: viscosity, conductivity, malleability, hardness, melting point, boiling point, density, volume, shape, color, mass, taste, opacity, salinity, pressure, luster, elasticity
* Used to identify a material, choose a material for a specific purpose, or separate the substances in a mixture.
	+ Separating mixtures: picking pieces out, magnet, sift, filtration, distillation, density

 **Physical Change**

* Definition: Occurs when some of the properties of a material change, but the substances in the material remains the same
* EX: phase changes, crumple/tear/fold paper, cut/braid hair
* Some are reversible, while some are not.

**Chemical Properties**

* Definition: any ability to produce a change in the composition of matter (one substance turns into a new substance)
* EX: flammability (can burn in the presence of oxygen) \*important for fuel
* EX: reactivity (describes how readily a substance combines chemically with other substances) \*oxygen is highly reactive, while nitrogen is not.

 **Chemical Change**

* Definition: Occurs when a substance reacts and forms one or more new substances
* EX: baking a cake, leaves changing color, digesting food
* Evidence for chemical changes: change in color, production of gas, formation of precipitate