Polar compound: molecule that has an uneven distribution of electrons (water- oxygen atom strongly attracts electrons, leaving hydrogen atoms w/ positive charge)
Polyatomic ion: ion made of two or more atoms

Polymer: large molecule formed by more than five monomers, or small units.

Pressure: amount of force exerted per unit area of a surface
Product: substance formed in a chemical reaction

Protein: organic compound made of one or more chains of amino acids and is a principal component of all cells
Pure substance: a sample of matter, single element or compound, w/ chemical and physical proprieties

Radical: organic group that has one or more electrons available for bonding
Reactant: substance or molecule that participates in a chemical reaction
Salt: an ionic compound that forms when a metal atom or positive radical replaces the hydrogen of an acid
Saturated solution: solution that can't dissolve any more solute under given conditions
Semiconductor: not as good as a metal. Alkali
Single-dis(/re)placement reaction: (AX + B →BX + A) one element/radical takes the place of another in a compound
Soap: a substance that is used as a cleaner and that dissolves in water.
Solubility: maximum amount of a solute that will dissolve in a given amount of solvent at a certain temperature
Solute: in a solution, substance that dissolves on the solvent
Solution: homogeneous mixture of two or more substances uniformly dispersed thoroughly a single phase
Solvent: in a solution, substance in which the substance dissolves.
Spectator ions: ions that create the salt. Like spectators watching from the sideline, they don't change during reaction between H_3O^+ and OH^-. Salt is always neutral.
Sublimation: solid changing directly to a gas (ex: dry ice to CO_2)
Substrate: part, substance or element that lies beneath and supports another part, substance or element, reactant in reaction s catalyzed by enzymes
Supersaturated solution: solution that holds more dissolved solute than is required to reach the equilibrium at a given temperature
Suspension: mixture in which particles of a material are more or less evenly dispersed throughout a liquid or gas. *FILTERED OUT*. Classified if particles can be filtered out or they settle out
Synthesis reaction: two or more substances combine to form a new compound
Thermal energy: the kinetic energy of a substance's atoms
Transition metal: groups 3-12
Unsaturated solution: solution that contains less solute than a saturated solution does, able to dissolve additional solute
Valence electron: electron found in the outermost shell of an atom. Determines chemical proprieties
Viscosity: the resistance of a fluid to flow

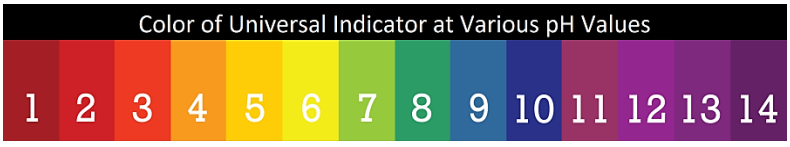
Properties:
Tensile strength: how well a solid resists breaking under tension
Cohesion: attraction between particles of the same substance
Adhesion: attraction between particles of different substances
Surface tension: liquid forms a 'skin' on the surface
Ductility: ability to be stretched into a string
Specific heat: how quickly a substance absorbs heat and rises the temperature
Refraction:
Crystal vs. Amorphous solid: amorphous- without set shape
Magnetism: Nd- most powerful magnet. Not every metal is magnetic (nickel, iron, steel and cobalt are some that re magnetic)
Flammability/combustion:
Reacts w/ acid to form hydrogen: Acid + metal → salt + hydrogen
Reacts w/ a base to form water: Acid + base → water + salt

- Physical changes only affect physical changes, whereas chemical changes affect both
- Smallest unit of a substance that behaves like the substance is a molecule
- Buoyant force is the *upward* force exerted on an object immersed or floating on a liquid
- Two or more liquids that can dissolve into each other are referred to as miscible

COMMON ACIDS		
Hydrochloric acid	HCl	Strong
Sulfuric acid	H_2SO_4	Strong
Nitric acid	HNO_3	Strong
Acetic acid	CH_3COOH	Weak
Formic acid	HCOOH	Weak
Citric acid	$H_3C_6H_5O_7$	Weak

COMMON BASES		
Potassium hydroxide	KOH	Strong
Sodium hydroxide	NaOH	Strong
Calcium hydroxide	$Ca(OH)_2$	Strong
Ammonia	NH_3	Weak
Methylamine	CH_3NH_2	Weak
Aniline	$C_6H_5NH_2$	Weak

COMMON SALTS	
Aluminum sulfate	$Al_2 (SO_4)_3$
Ammonium sulfate	$(NH_4)_2SO_4$
Calcium chlorate	$CaCl_2$
Potassium chlorate	KCl
Sodium carbonate	Na_2CO_3
Sodium hydrogen carbonate	$NaHCO_3$
Sodium stearate	$NaOOCC_{17}H_{34}$
Sodium lauryl sulfonate	$NaSO_3C_{12}H_{25}$



- The two types of pure substances = Element and compound. Everything else is a mixture
- When elements combine to form a compound, the resulting properties may be very different from those of the elements that make it
- Chemical formulas- Metals are always positive. Forget subscripts if charges are equal and opposite. Element to the left goes first. If in same family, one on top goes first
- Formula units of salt, NaCl, are made up of equal amounts of sodium ions and chloride ions.