

# Elements & Compounds Notes

TEKS: (6.5) Matter and energy.

The students knows the differences between elements and compounds

- Differentiate between elements and compounds on the most basic level
- Identify the formation of a new substance by using the evidence of a possible chemical change such as production of a gas, change in temperature, production of a precipitate, or color change

- Chemical formula – a description that uses numbers and element symbols to represent the elements that compose a compound.
- Chemical Reaction – A change in matter that results in the formation of a new substance with different properties
- Compound – A substance made of 2 or more elements that are chemically combined
- Molecule – the smallest particle of a substance that retains the chemical and physical properties of the substance and is composed of 2 or more atoms.
- Precipitate – a solid or solid phase separated from a solution.

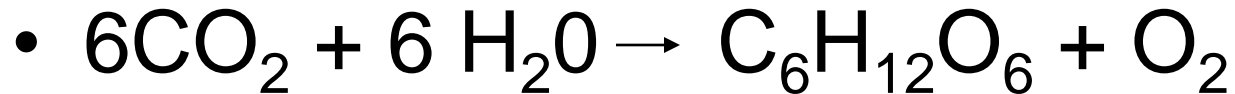
# Elements vs Compounds

- Elements are represented by chemical symbols (ex. Cl - Chlorine Na - Sodium)
- Compounds are made of 2 or more elements chemically combined.
- Compounds are represented by chemical formulas (ex. Sodium Chloride -NaCl)
- Chemical formulas provide the elements present and the ratio of the elements in the compound.

<b>Compound</b>	<b>Formula</b>	<b>Elements in the Compound</b>
Water	$\text{H}_2\text{O}$	Hydrogen & Oxygen
Sugar (glucose)	$\text{C}_6\text{H}_{12}\text{O}_6$	Carbon, Hydrogen, & Oxygen
Table salt	$\text{NaCl}$	Sodium & Chlorine
Carbon dioxide	$\text{CO}_2$	Carbon & Oxygen

# Chemical Reaction

- When a chemical reaction occurs, the arrangement of the atoms change and a new substance with different properties is created.



Reactants

Product

6 Carbon dioxides + 6 waters react together to produce sugar and oxygen

# Chemical Reaction

- $C + O_2 \longrightarrow CO_2$
- Carbon + Oxygen Produces Carbon Dioxide
- Carbon and oxygen chemically combine to form a new compound, carbon dioxide.

# Evidence of a Chemical Change or Reaction:

- Gases formed or bubbles seen
- Color and or odor change
- 2 or more liquids combine to form a liquid and a solid called a precipitate.
- Change in temperature