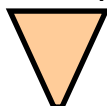


Grade 9 - Unit 2 –Matter and Chemical Change Concepts

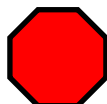
Symbol Shapes



caution



warning



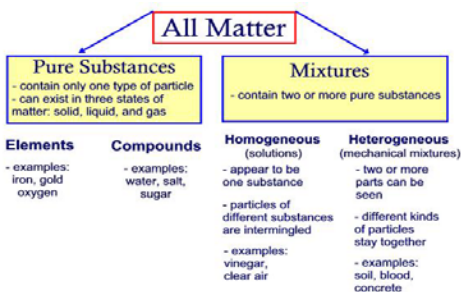
danger

W.H.I.M.I.S.

Hazardous
Safety
Symbols



Lab
Procedures
&
Techniques



Chemical Change / Physical Change

New Substance Forms

Chemical properties

- Reaction with acids
- Reaction with water
- Ability to burn
- Behaviour in air
- Reaction to heat

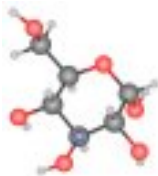
Change of State

Physical Properties

- colour
- lustre
- hardness
- density
- conductivity
- melting point
- boiling point
- malleability
- ductility
- crystal shape

Formation of Compounds

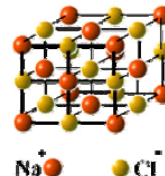
Molecular Compounds



Glucose

Molecular compounds have weak attractions between molecules

Ionic Compounds



Na⁺ Cl⁻

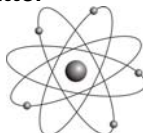
Ionic compounds form when ions attract

Chemical Names

Naming Chemical Compounds (Rules)

Theories of Matter

- Stone Age Chemists
- Gold/Copper
- Iron Age
- Alchemy
- Robert Boyle
- Antoine Lavoisier
- Atomic Theory (John Dalton)
- JJ Thomson
- Hantaro Nagaoka
- Ernest Rutherford
- Neils Bohr
- Modern Chemists



Atomic Models

- Billiard Ball
- Raisin Bun
- Planetary
- Nucleus
- Electron Orbit
- Quantum Model

Elements & the Periodic Table

Patterns – Dmitri Mendeleev

Symbol – Name – Atomic Number
Atomic Mass – Ionic Charge
Groups – Periods

Chemical Reactions

(Reactants → Products)

Endothermic (takes in energy)

- cold packs
- corrosion

Exothermic (gives off energy)

- fire (combustion)
- cellular respiration

Reaction Rate (Speed)

Factors Affecting Reaction Rate

- Catalysts
- Concentration
- Surface Area
- Temperature