

# IS LIFE CHEMISTRY?



**\*\*\* Earth consists mostly of elements produced by fusion reactions in stars and supernova explosions**

**4 Elements make up 90% of the Earth's mass:  
Iron, Silicon, Oxygen, Magnesium**



**\*\*Nearly 99% of the mass of the Human Body is made up of six elements:**

**Oxygen, Carbon, Hydrogen, Nitrogen, Calcium, & Phosphorus**



# **Elements in Earth's Early Atmosphere**

**Rained down into oceans**

**Formed simple chains**

**RNA**

**Replicated to form complex chains**

**Natural Selection/ Evolution**

**DNA**

**Single-Celled Organisms ; 3.4 Billion Year Old  
Fossils – Blue/Green Algae**

**Multicellular Organisms ; 1.2 Billion Year Old  
Fossils - Red Algae**

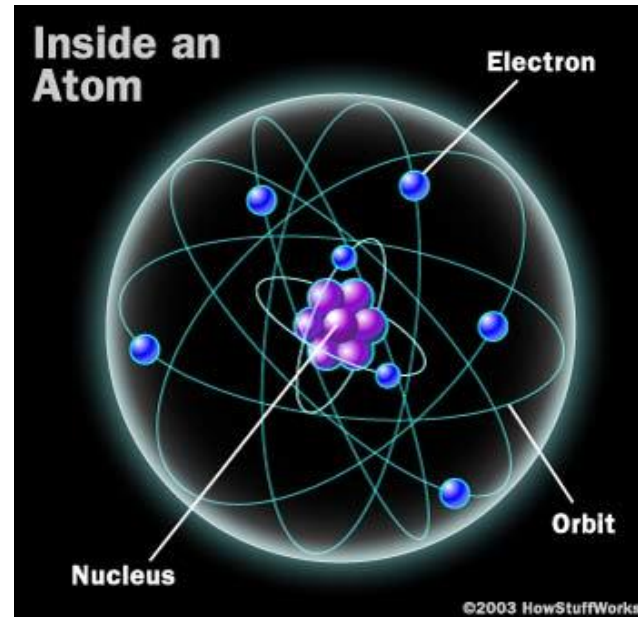
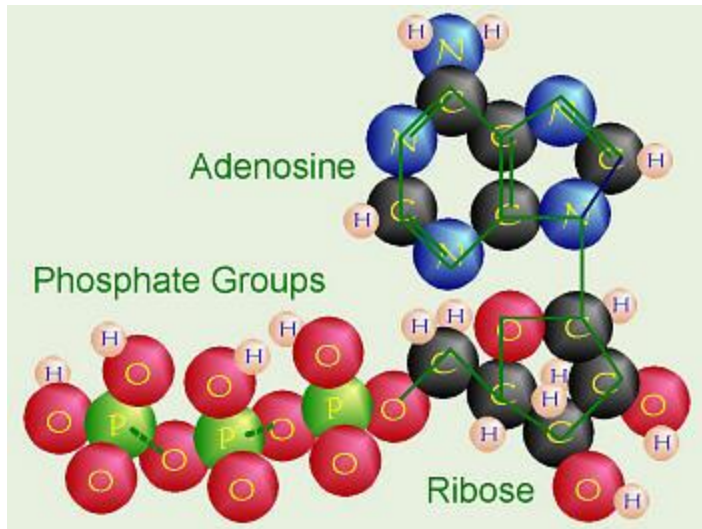


# Why Study Chemistry??

**Practical Applications : chemistry occurs around us every day**

**It is an Intellectual Enterprise: A way of explaining the material world around us**

**It is connected to other fields of study: knowledge of chemistry will allow you to make intelligent and informed decisions regardless of your career plans**



# WONDER



# Lab Safety



# Main Causes of accidents in the lab:

**1. Students fail to follow instructions**

**2. Inexperience**





# Hazard Pictograms



**Corrosive: will weaken or decay materials and living tissue by chemical action**

**Irritant: will cause discomfort to skin/eyes/respiratory tract, creating an inflammatory effect on living tissue**



**Oxidizer:** A substance that gives off or yields oxygen readily , simulating combustion

**Toxic:** Poisonous to living tissue, can impair nervous system, cause illness or death



Biohazard: Risk to human health or the environment caused by biological substances (specimens or microorganisms associated with disease

Toxic to the Environment: Harms land and aquatic ecosystems





**Explosive: Able or likely to release gas, heat, and pressure; shattering violently**

**Flammable: Easily set on fire**



**Gas under Pressure**



**Health Hazard**

# Fire Blanket



**Function: Contain and Control**

# Fire Exinquisher



Pull

Aim

Squeeze

Sweep

# Eyewash and Safety Shower





- Ventilation Switch
- Emergency Gas Shut Off Valve
- Chemical Storage
- Spill Kits
- Broken Glass Receptacle
- Chemical waste Receptacle



# PPE



# Fire Alarm Exits



