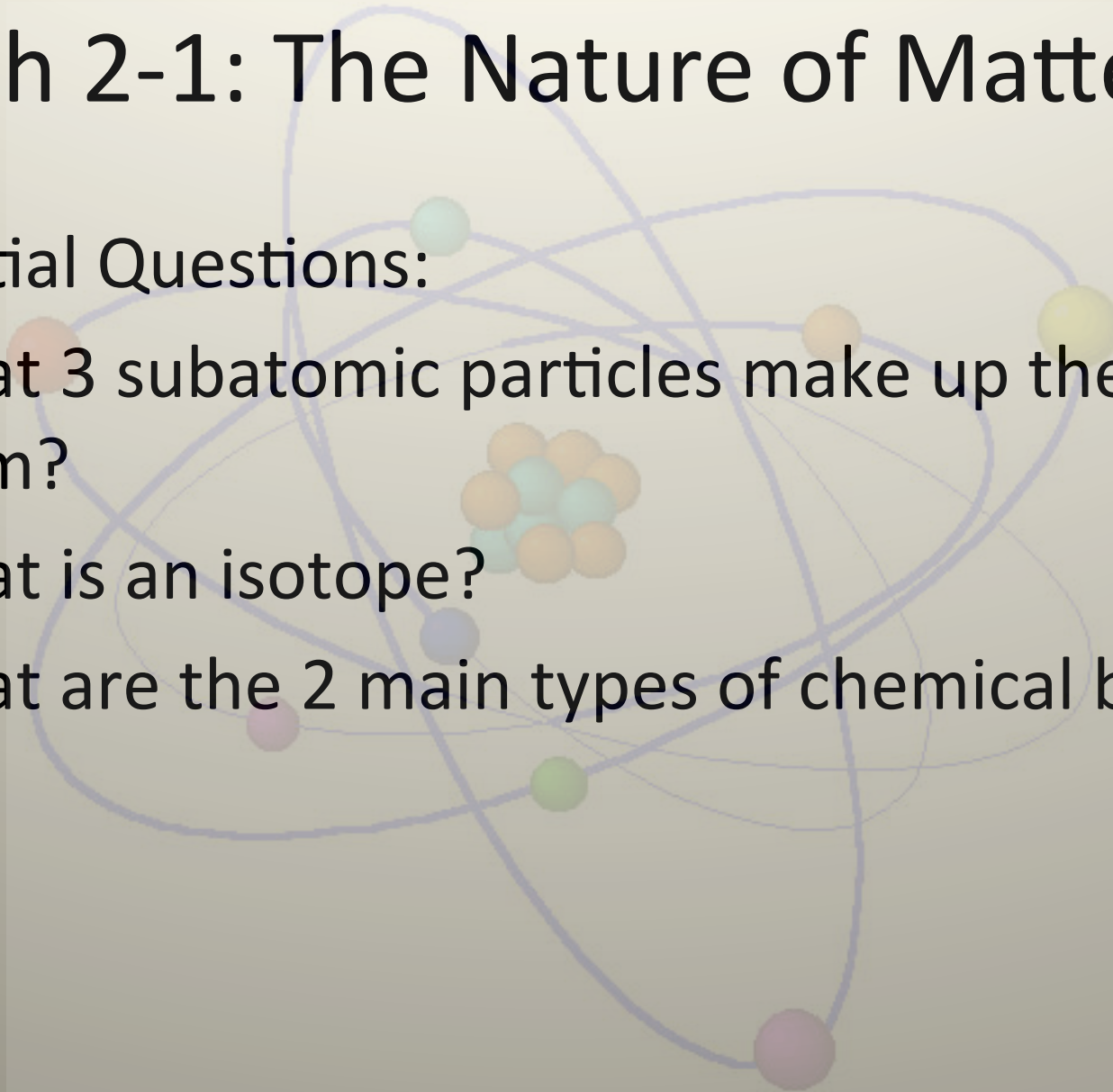


# Ch 2-1: The Nature of Matter

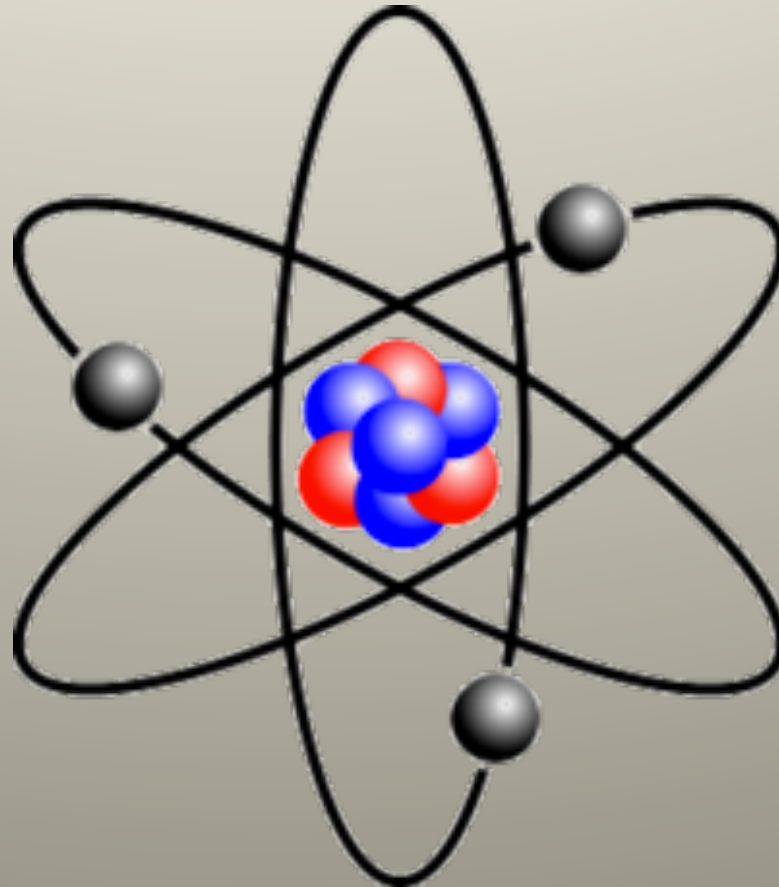
## Essential Questions:

- What 3 subatomic particles make up the atom?
- What is an isotope?
- What are the 2 main types of chemical bonds?



- Atoms:

- Center of the atom is \_\_\_\_\_
- In the nucleus: \_\_\_\_\_ & \_\_\_\_\_
- Surrounding the protons & neutrons are \_\_\_\_\_



- Elements & Isotopes

- Element: 1 type of atom

- Isotope

- different # of neutrons

- Same # of electrons, so same chemical properties

## Isotopes of Carbon



$^{12}\text{C}$

Carbon-12

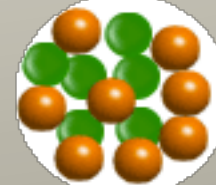
6 protons  
6 neutrons



$^{13}\text{C}$

Carbon-13

6 protons  
7 neutrons

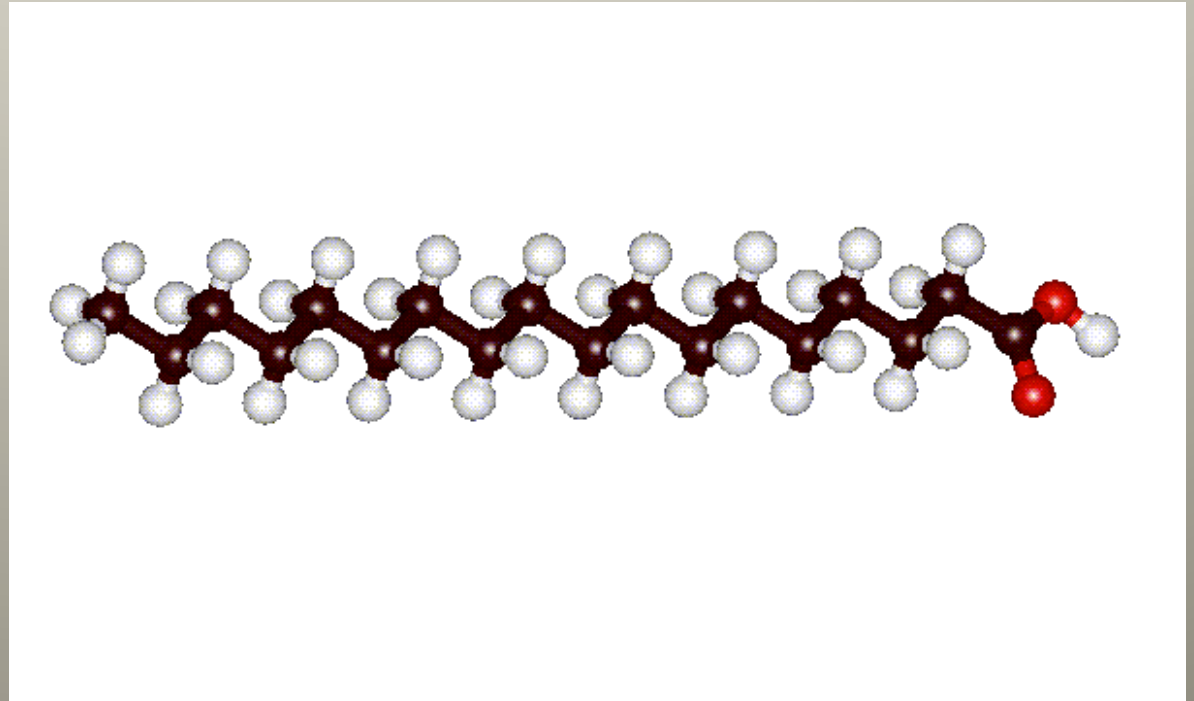
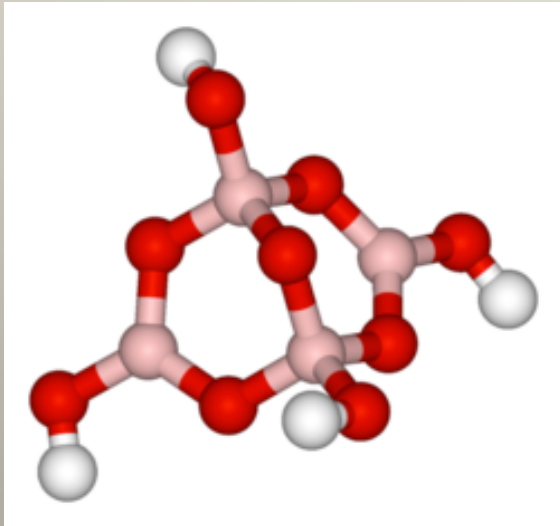


$^{14}\text{C}$

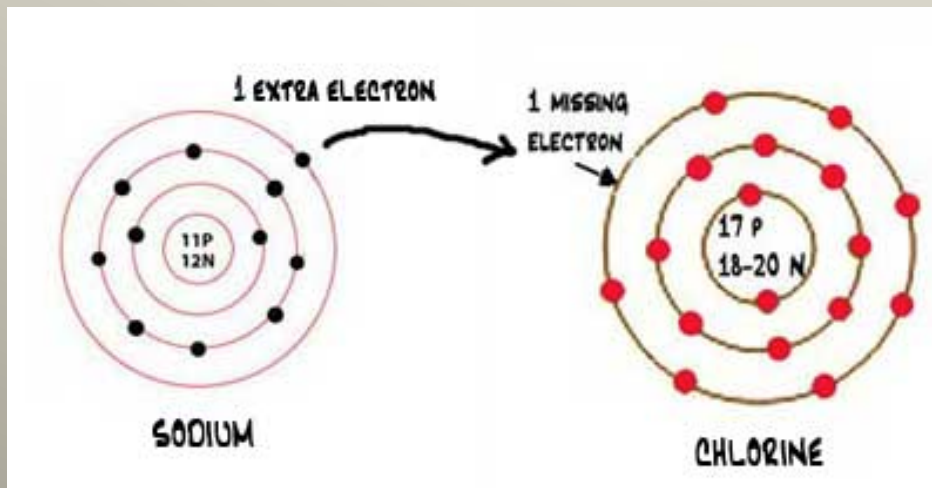
Carbon-14

6 protons  
8 neutrons

- Chemical compounds



- Chemical Bonds
  - Ionic bonds
  - Covalent bonds



1e



•H



2e



H:H  
H - H

– Van der Waals forces

