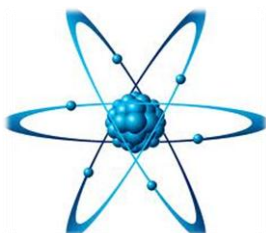
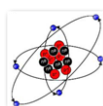


### Structure of the Atom



### Nucleus

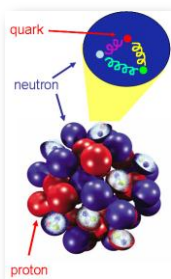


- \_\_\_\_\_
- \_\_\_\_\_ charged
- Contains the “\_\_\_\_\_” of the atom
- Contains \_\_\_\_\_

### Subatomic Particles in Nucleus

- Protons - \_\_\_\_\_ charge
- Neutron- \_\_\_\_\_ charge (\_\_\_\_ charge)
- Protons + Neutrons = \_\_\_\_\_

### Quarks



- Protons and Neutrons are made up of \_\_\_\_\_.
- Quarks are known as

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

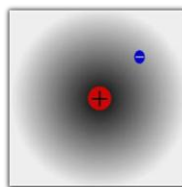
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### Electron Cloud



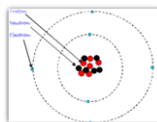
- Surrounds \_\_\_\_\_
- Subatomic particle in electron cloud - \_\_\_\_\_
- Electrons - \_\_\_\_\_ charge

### Element Identity

Helium	element
2	atomic number
He	symbol
4.003	atomic mass

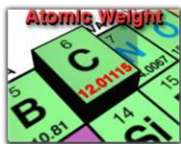
- Elements are made up of only \_\_\_\_\_
- The number of \_\_\_\_\_ an element has determines the \_\_\_\_\_ it is.
- Number of protons = \_\_\_\_\_

### For example:



- Carbon’s atomic number is \_\_\_\_\_; therefore Carbon has \_\_\_\_\_.
- How many protons does hydrogen have? \_\_\_\_\_
- How many protons does Oxygen have? \_\_\_\_\_

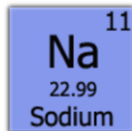
## Atomic Mass



- Measured in \_\_\_\_\_  
\_\_\_\_\_ (\_\_\_\_\_)
- Mass number - \_\_\_\_\_  
\_\_\_\_\_
- For example: Average atomic mass of Potassium is \_\_\_\_\_  
Mass number = \_\_\_\_\_

What is the mass number of Boron? \_\_\_\_\_

## Calculating Neutrons

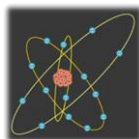


- IF \_\_\_\_\_ + \_\_\_\_\_ = Mass Number
- THEN \_\_\_\_\_ = neutrons
- For example:  $11 + n = 23$  or
- \_\_\_\_\_ ,
- Sodium has \_\_\_\_\_ neutrons

## Practice

- How many neutrons does Calcium have? \_\_\_\_\_
- How many neutrons does Xenon have? \_\_\_\_\_

## Calculating Electrons



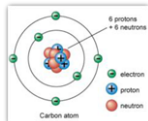
- Atoms that are stable have \_\_\_\_\_; therefore, protons \_\_\_\_\_
- For example: Sodium has \_\_\_\_\_ protons and \_\_\_\_\_ electrons.
- (The positives must equal the \_\_\_\_\_.)

## Practice



- How many electrons does Neon have? \_\_\_\_\_
- Remember atomic number tells you how many \_\_\_\_\_ the atom has.
- Neon's atomic number is \_\_\_\_\_; therefore it has \_\_\_\_\_ protons and \_\_\_\_\_ electrons.

## Atomic Model



- Diagram representing the \_\_\_\_\_ in an atom.
- Begin by filling in \_\_\_\_\_ and \_\_\_\_\_ in the nucleus (the center)
- Place \_\_\_\_\_ around the nucleus
- Electrons are distributed in the electron cloud in \_\_\_\_\_

## Electron Cloud Levels

- 1st Level can only hold \_\_\_\_\_ electrons
- 2nd Level can only hold \_\_\_\_\_ electrons
- 3rd Level can hold up to \_\_\_\_\_ electrons

HOWEVER...

## Practice

- Sulfur has \_\_\_\_\_ electrons.
- \_\_\_\_\_ will fill into the 1st energy level
- \_\_\_\_\_ will fill into the 2nd energy level
- \_\_\_\_\_ will fill into the 3rd energy level.

