

Chapter 14 -15 Science Study Guide

Name _____

Important scientist:

John Dalton- “sphere model”. Marble

- All things are made of matter.
- Matter is made of small particles called atoms.
- Atoms cannot be divided into smaller pieces.
- Different elements are made of different atoms.

Crookes- “cathode ray”

- Used electrodes to prove his theory that particles exist

Anode- positive charged electrode

Cathode- negative charged electrode

JJ Thompson-Discovered that there are negatively charged particles called **electrons** outside of the atom’s nucleus.

(Chocolate chip idea)

Rutherford’s Theory “**proton**” discovered protons exist inside the nucleus. “empty space”

Bohr Model “most recent” electrons circle the nucleus of an atom in an ***electron cloud***.

Nucleus: center of the atom in an electron cloud. Contains protons (+)and neutrons (**no charge**)

Parts of an atom:

- **proton**
- **neutron**
- **electron**

Chapter 14 Vocabulary (define and make note cards)

1. alpha particle

2. anode
3. atomic number
4. beta particle
5. cathode
6. electron
7. electron cloud
8. element
9. half-life
10. isotope
11. mass number
12. neutron
13. proton
14. radioactive decay
15. transmutation
16. strong nuclear force

The Periodic Table

- ***Dimitri Mendeleev***- invented the periodic table in 1869
- ***Henry Moseley***- changed the table to be arranged by atomic number

Periods—are read across

Groups- read up and down

Periodic table is divided into 3 groups

- ***metals***-mostly solids, high melting point, luster (shine), malleable good conductors of heat and electricity
- ***nonmetals***-usually gasses, poor conductors of heat and electricity
- ***metalloids***-share properties of metals and nonmetals

Group 1- Alkali Metals

1.

2.

3.

Group 2- Alkaline Metals

1.

2.

3.

Group 13 – Boron group—(aluminum products, cookware)

Group 14 – Carbon group

1.

2.

3.

Group 15- Nitrogen Group

1.

Group 16- Oxygen group

1.

2.

Group 17- Halogen

1.

2.

Group 18 - Noble Gases

1.

2.

3.

4.

Chapter 15 Vocabulary

1. *Actinides*
2. *Alkali metal*
3. *Alkaline earth metals*
4. *Catalyst*
5. *Group*
6. *Period*
7. *Halogen*
8. *Lanthanides*
9. *Metal*
10. *Metalloid*
11. *Noble gasses*
12. *Nonmetal*