Name: _____

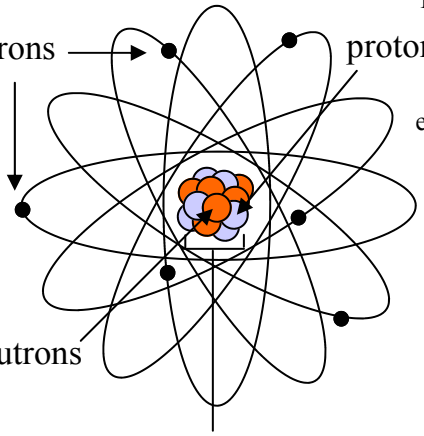
Period: _____

The Atom

Everything is made of **atoms**. Atoms are the smallest part of matter.
Atoms are made up of 3 subatomic particles (particles smaller than the atom): ***electrons, protons, and neutrons***.

On the following diagram of an atom define the parts of the atom.

Negatively charged particles; outside the nucleus; can be gained or lost to and from other atoms; very small mass: 1/2000th of a proton



Positively charged particles; in the nucleus; determine what element an atom is.

Neutral particles in the nucleus; give mass to the atom, but not charge.

Center of the atom; contains protons and neutrons.

This model of the atom looks a lot like a solar system. The nucleus, which contain the protons and neutrons, in the center would be the sun. The **electrons** are the planets spinning around the nucleus.

Count the protons to tell what element this is:

# of Protons:____ Element: _____

John Dalton in 1808 published a theory of the atom that had these important points:

- All atoms of a particular element are the same.
- Atoms of different elements have different properties, mass, and chemical reactivity.
- Atoms are not changed by chemical reactions, just rearranged in order or number.

Atoms, Molecules, and Compounds

Atoms combine into **molecules**.
O is an atom; O_2 is a molecule: both are oxygen.

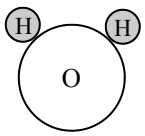
Molecules are made up of two or more <u>atoms</u>.

If two different atoms combine they make **compounds**:
H_2O is a compound; O_2 is a molecule.

Compounds are made up of two or more <u>elements</u>.

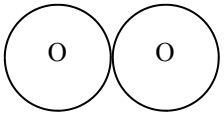
Water molecule—
a compound (H_2O)

2 hydrogens



1 oxygen

Oxygen molecule—
an element (O_2)



2 oxygens

Atom, molecule or compound?

NaCl — _____

Cl_2 — _____

Na — _____

What elements are these?

Na— _____

Cl— _____

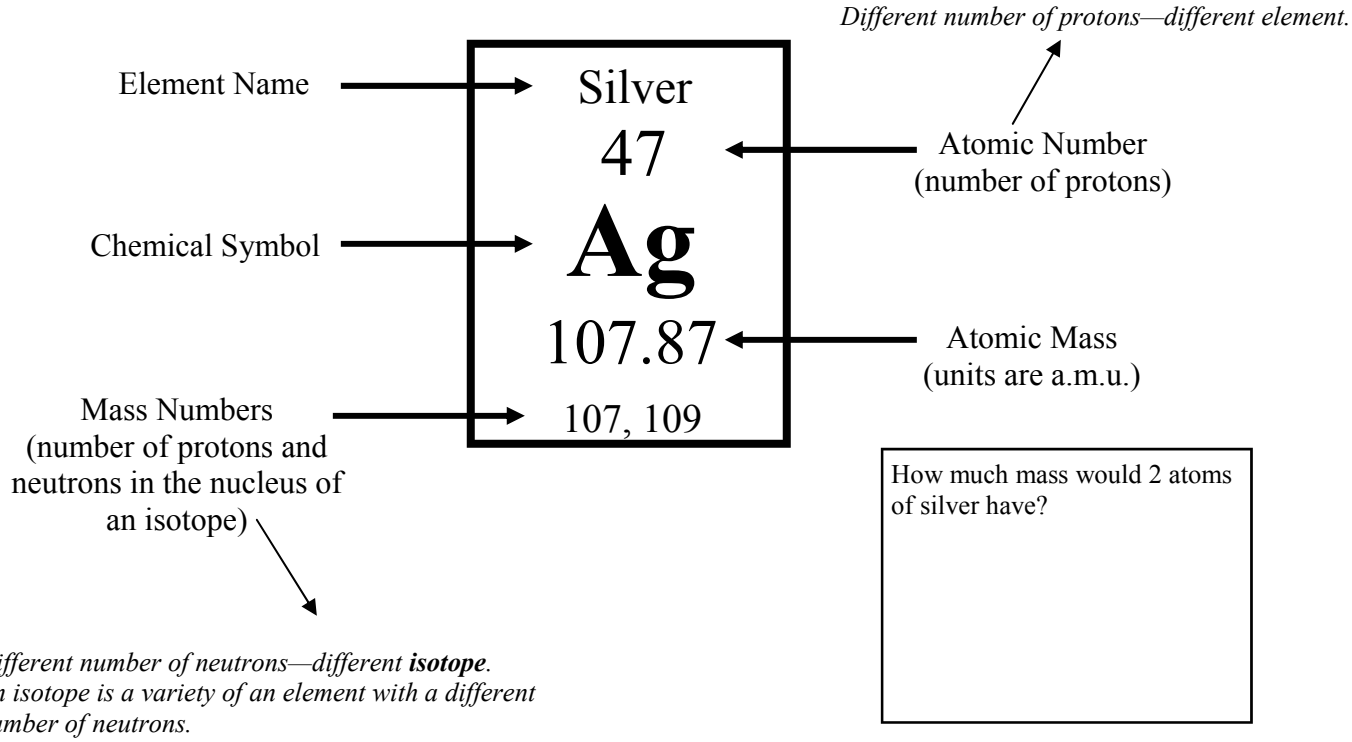
by C. Stephen Murray, 2003

Name: _____

Period: _____

Beginning to Read the Periodic Table

Reading the element individual tiles



Use Your Periodic Table to Answer the Following

Find the chemical symbols for these elements:	Find the names for these elements:	Find the atomic numbers for these elements:	Find the atomic mass for these elements:
Gold: _____	Mg: _____	Oxygen: _____	H: _____
Fluorine: _____	N: _____	B: _____	Neon: _____
Sulfur: _____	He: _____	Lithium: _____	Al: _____

1. Proton—	a. Particles with no charge that exists in the nucleus of most atoms.	1. Atomic Number—	a. Total number of protons and neutrons in the nucleus of an atom.
2. Neutron –	b. Center of the atom, contains most of the atom's mass.	2. Molecule—	b. Number of protons in an atom; also the way the elements are numbered.
3. Electron—	c. Positively charged particle in the nucleus of the atom. Determines the element.	3. Compound—	c. An atom with a different number of neutrons
4. Nucleus—	d. The smallest part of an element or molecule. Building block of all things.	4. Mass Number	d. Two or more elements combined.
5. Atom—	e. Negative particles in the nucleus of the atom.	5. Isotope—	e. Two or more atoms that are combined (can be same two atoms of same element).
	f. Negatively charged particle that exists in the space around the nucleus.		f. Number of electrons in an atom.

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