Science 8

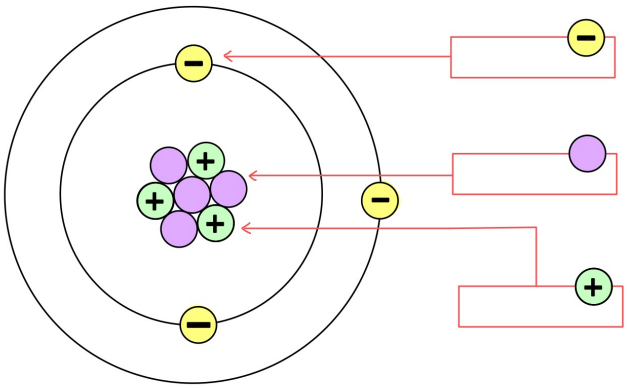
Atomic Theory 4: Subatomic Particles

Name:
Date:
Block:

What is an atom made of?

An atom is made of three subatomic particles:

- Electrons
- Neutrons
- Protons



What is an <u>electron</u>?

Charge		Mass		Location	
How many?	Same as the _____ for a neutral atom				

<u>Practice:</u> Find the number of electrons for the following elements:

1. Silver:
2. Palladium:
3. Gallium:
4. Fluorine:
5. Cesium:
6. Krypton:

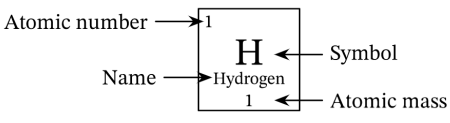
What is a <u>proton</u>?

Charge		Mass		Location	
How many?	Same as the _____				

<u>Practice:</u> Find the number of protons for the following elements:

1. Sodium:
2. Neon:
3. Einsteinium:
4. Chlorine:
5. Tin:
6. Platinum:

What is a <u>neutron</u>?

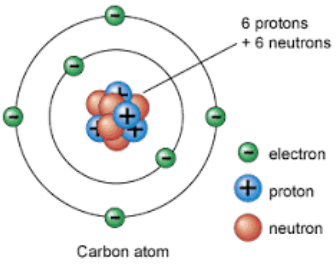
Charge		Mass		Location	
How many?					

<u>Practice:</u> Find the number of neutrons for the following elements! (Round the mass up or down)

1. Manganese:
2. Bismuth:
3. Osmium:
4. Potassium
5. Sulfur:
6. Arsenic

Practice:

1. The atom pictured to the right represents the element _____ because _____ _____



2. If an atom has 17 protons, it must have _____ electrons.

3. Fluorine has an atomic mass of _____ and an atomic number of _____, therefore, the number of neutrons is _____.

4. Round the following atomic mass numbers to the nearest whole number:

   a. 131.29 b. 79.90 c. 51.99

   d. 63.55 e. 14.01 f. 35.45

In summary:

	PROTON	ELECTRON	NEUTRON
Where is it found?			
Charge?			
Mass: Heavy or light?			
How to find how many using the PT?			

What am I?

1. Have a charge:
   proton // electron // neutron
2. Have the heaviest mass:
   proton // electron // neutron
3. Does not have a charge:
   proton // electron // neutron
4. Has the lightest mass:
   proton // electron // neutron
5. Found in the nucleus:
   proton // electron // neutron
6. Have equal masses:
   proton // electron // neutron
7. Found in shells that surround the nucleus:
   proton // electron // neutron
8. Exist in equal quantities in all **neutral** atoms:
   proton // electron // neutron

Name: _____

Block: _____

Subatomic Particles Practice

Fill in the following table. Please round the atomic mass.

Element Name	Element Symbol	Atomic Number	Atomic Mass	# of Protons	# of Electrons	# of Neutrons
1.	Cl					
2. Silver			108			
3.				8	8	8
4.	Al		27			
5.	Cs					
6.		46				
7.		44	101			
8. Tungsten						
9.			152	63		
10.					91	

_____ 1. What particles are found in the nucleus of an atom?
   a. Electrons
   b. Electrons and protons
   c. Neutrons
   d. Neutrons and protons

_____ 2. Which subatomic particle has the smallest mass?
   a. Electrons
   b. Neutrons
   c. Protons

_____ 3. Which subatomic particle has a charge of zero?
   a. Electrons
   b. Neutrons
   c. Protons

_____ 4. The atomic number tells us the
   a. Number of electrons in the atom
   b. Number of neutrons in the atom
   c. Number of electrons and protons in the atom
   d. Number of protons and neutrons in the atom

_____ 5. Challenge: Based on what you know, the atomic mass is the sum of the
   a. Electrons and protons
   b. Protons and neutrons
   c. Atomic number and electrons
   d. Atomic number and protons