**Extra Review Practice – PS Unit 7 – Periodic Table and Atomic Theory**

**Vocabulary Review**

**Parts of an Atom/Types of Atoms:**

\_\_Atom\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ The smallest particle of an element

\_\_Nucleus\_\_\_\_\_\_\_\_\_\_\_\_\_ Has all the mass of an atom, found in the center, is dense

\_\_Neutron\_\_\_\_\_\_\_\_\_\_\_\_\_ A subatomic particle found in the nucleus that does not have a charge

\_\_\_Proton\_\_\_\_\_\_\_\_\_\_\_\_\_ A subatomic particle with a positive charge

\_\_\_Electron\_\_\_\_\_\_\_\_\_\_\_ The smallest subatomic particle that has almost no mass and a negative charge

\_\_\_Valence Electrons\_\_\_\_ This is what you call electrons that are in the outermost orbital

\_\_\_Subatomic Particles\_\_ Protons, neutrons and electrons are all types of these

\_\_\_Atomic Mass\_\_\_\_\_\_\_ The protons and neutrons put together equal this, what Mendeleev used to organize his periodic table

\_\_Atomic Number\_\_\_\_\_\_\_ This is the number of protons an element has

\_\_\_Ion\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ An atom with a charge, that has gained or lost electrons

\_\_\_Isotope\_\_\_\_\_\_\_\_\_\_\_\_\_\_ An atom with a different number of neutrons

\_\_\_AMU\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ This is the unit for the atomic mass of an atom

**Properties of Elements:**

\_\_\_\_Alloy\_\_\_\_\_\_\_\_\_\_\_\_\_\_ A mixture of two or more metals

\_\_\_Metals \_\_\_\_\_\_\_\_\_\_\_\_\_ A group of elements that conduct electricity well, are the largest type of element represented on the periodic table

\_\_\_Semiconductors\_\_\_\_\_\_ Elements that exhibit this property are able to conduct well, but won’t get nearly as hot as many metals do… thus it makes for great computer chips

\_\_\_Ductile\_\_\_\_\_\_\_\_\_\_\_\_ This is a property many metals have that allow them to be pulled into wires

\_\_Malleable \_\_\_\_\_\_\_\_\_\_\_ This is a property that many metals have that allow them to be hammered into sheet

**Parts of the Periodic Table:**

\_\_Periodic Table\_\_\_\_\_\_\_ A chart of elements used to organize them into families with similar properties is known as a (don’t over think this one lol)

\_\_Nobel gases\_\_\_\_\_\_\_\_\_ This family of elements do not react with other elements as they are already stable

\_\_\_Periods\_\_\_\_\_\_\_\_\_\_\_ A row of elements (going across) is known as a

\_\_\_Groups\_\_\_\_\_\_\_\_\_\_\_\_ Vertical columns of elements (going up and down) are known as a

\_\_\_Transition Metals\_\_\_ This is the largest FAMILY of elements on the periodic table

\_\_Non-metal\_\_\_\_\_\_\_\_\_\_\_\_ Nitrogen is this type of element

\_\_\_Halogen\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Fluorine is a part of this family

\_\_Alkali Metals\_\_\_\_\_\_\_\_ This is the most reactive family of METALS

\_Halogens\_\_\_\_\_\_\_\_\_\_\_\_\_ This is the most reactive family of NON-METALS

\_\_Noble Gases\_\_\_\_\_\_\_\_\_\_\_ Neon is a part of this family

\_\_\_Alkali Metals\_\_\_\_\_\_\_\_\_\_ Lithium is a part of this family

\_\_\_Non-metal\_\_\_\_\_\_\_\_\_\_\_\_ Sulfur is a part of this family

**Discovery of the Atomic Theory:**

\_\_\_Dalton\_\_\_\_\_\_\_\_\_\_\_\_\_\_ This was one of the first scientists who discovered atoms and thought they were tiny solid balls

\_\_\_JJ Thomson\_\_\_\_\_\_\_\_\_\_ This was the scientist that discovered electrons with a cathode ray tube

\_\_\_Rutherford\_\_\_\_\_\_\_\_\_\_ This was the scientist who discovered the nucleus with a gold foil experiment

\_\_\_Bohr\_\_\_\_\_\_\_\_\_\_\_\_\_\_ This was the scientist who came up with the theory that electrons orbited around a nucleus

\_\_\_\_Mendeleev\_\_\_\_\_\_\_\_\_ This was the scientist who organized the elements into the periodic table

**Application of Atomic Theory**

**Using the Periodic Table:**

1. Answer the following questions about Fluorine:
   1. Symbol: F
   2. Atomic Number: 9
   3. Atomic Mass: 19.00
   4. Number of Protons: 9
   5. Number of Neutrons: 10
   6. Number of Electrons: 9
   7. How many energy levels would the Bohr model have? 2
   8. How many valence electrons would it have? 7 (2 on the 1st, 7 on the 2nd)
2. Answer the following questions about Aluminum:
   1. Symbol: Al
   2. Atomic Number: 13
   3. Atomic Mass: 26.928
   4. Number of Protons: 13
   5. Number of Neutrons: 14
   6. Number of Electrons: 13
   7. How many energy levels would the Bohr model have? 3
   8. How many valence electrons would it have? 3(2 on the 1st, 8 on the 2nd, 3 on the 3rd)
3. How many electrons does a Beryllium ion (Be 2+) have? (To find electrons…. Start with the atomic number… then if it is positive… subtract the number, if it is negative…. Add the number (keep in mind if there is just a charge and no number assume it is 1)) 2
4. How many electrons does a Fluorine ion (F-) have? 10
5. How many electrons does a Sodium ion (Na+) have? 10
6. How many electrons does a Oxygen ion (O2-) have? 10
7. How many neutrons does Uranium-238 have? (use the number given as the atomic mass… then subtract the number of protons (atomic number) from it to find out how many neutrons you have) 238-92 = 146
8. How many neutrons does Uranium-234 have? 234-92= 142
9. How many neutrons does Carbon-12 have? 12-6 = 6
10. How many neutrons does Carbon-14 have? 14-6 = 8