Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Homeroom:\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_ **3.5**

**Periodic Table Basics (SPI.9.9)**

|  |  |
| --- | --- |
| ***Key Point*** | ***Notes*** |
| **The Periodic Table** | * All \_\_\_\_\_\_\_ are listed and organized n the ***Periodic Table of Elements*** * The periodic table was developed by a Russian chemist named Dmitri \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * **“Periodic”** means that there is some kind of \_\_\_\_\_\_\_\_\_\_\_. * The periodic table organizes the elements into many different \_\_\_\_\_\_\_\_\_/ \_\_\_\_\_\_\_\_ (categories) based on physical and chemical \_\_\_\_\_\_\_\_\_\_\_\_\_. * Different \_\_\_\_\_\_\_\_ are what makes elements different from each other |
| **Groups (Families) and Periods** | * Vertical columns on the periodic table are called \_\_\_\_\_\_\_\_   1. Elements in the same group have similar chemical and physical \_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Horizontal rows on the periodic table are called \_\_\_\_\_\_\_\_\_\_\_ |
| **Reading the Periodic Table** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Atomic Number** | * The **atomic number** is the \_\_\_\_\_\_\_\_ number in the periodic table * It is the number of \_\_\_\_\_\_\_\_\_ in the nucleus of an atom in an element   + **Atomic Number = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**   + Hydrogen has an atomic number of 1 because there is 1 proton only in the atom’s nucleus * Each element has a \_\_\_\_\_\_\_\_\_\_\_ atomic number. * The Periodic Table is ordered by *increasing* \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ * In a neutral atom, # of protons = # of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Chemical Symbol** | * The chemical symbol \_\_\_\_\_\_\_\_\_\_\_\_ the element’s name * A chemical symbol is either one or two letters * The first letter of the chemical symbol is always \_\_\_\_\_\_\_\_\_\_\_\_\_   1. Ex: He is the chemical symbol for helium   2. Ex: H is the chemical symbol for hydrogen * A chemical symbol does not always correlate with the English name of the element. \_\_\_\_\_\_\_\_\_ is frequently used.   1. Ex: Pb is the chemical symbol for lead (lead is plumbum in Latin) |
| **Atomic Mass** | * The *atomic mass* is the mass of an element measured in a.m.u. * The **atomic mass** is equal to the number of protons \_\_\_\_\_ the number \_\_\_\_\_\_\_\_\_ in the nucleus of atom of an element |
| **Atomic Math Bylaws** | 1. **Atomic number = number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.** 2. **Number of protons = number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(in a neutral atom).** 3. **Atomic mass = number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plus the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.** |
| **So What?!** |  |

**“I Own This” (Independent Practice):**

**8**

**O**

Oxygen

15.99

1. Label the box above with **chemical symbol, atomic number,** and **atomic mass**.
2. Define a group (family).
3. What is a period?
4. What is the symbol for the following elements.
   1. Magnesium \_\_\_\_\_
   2. Potassium \_\_\_\_\_
   3. Iron \_\_\_\_\_
   4. Copper \_\_\_\_\_
5. What are the names of the following elements?
   1. C \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Cl \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. Au \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. Sr \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. What group and period are the following elements in?
   1. He \_\_\_\_\_, \_\_\_\_\_
   2. Ge \_\_\_\_\_, \_\_\_\_\_
   3. Rb \_\_\_\_\_, \_\_\_\_\_
   4. I \_\_\_\_\_, \_\_\_\_\_
7. Calculate the number of protons, electrons, and neutrons for following elements.

|  |  |  |  |
| --- | --- | --- | --- |
| **Element** | **# of protons** | **# of electrons** | **# of neutrons** |
| Sulfur |  |  |  |
| Iodine |  |  |  |
| Ca |  |  |  |
| Fe |  | **10**  **Ne**  Neon  20.18 |  |

8. How many protons, neutron, and electrons does neon have?