|  |  |
| --- | --- |
| **Science 8**  **Subatomic Particles** | Name:  Date:  Block: |

|  |  |
| --- | --- |
| In an atom, there are three subatomic particles. |  |

**The proton:**

* This is found in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* It has a charge of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Its mass is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* The ­­­­\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ­­­­­­­­­­­­­ represents the number of \_\_\_\_\_\_\_\_\_\_\_\_\_.

**Practice!** Find the number of protons for the following elements!

|  |  |  |
| --- | --- | --- |
| 1. Sodium:  4. Chlorine  7. Tungsten: | 2. Neon:  5. Tin:  8. Copper: | 3. Einsteinium:  6. Platinum  9. Gold: |

**The electron:**

* This is found in the \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_.
* It has a charge of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. In a neutral atom, the overall charge is \_\_\_\_\_\_\_\_\_\_.
* Example: If an atom has 17 protons, it must have \_\_\_\_\_\_ electrons.
* Its mass is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Practice!** Find the number of electrons for the following elements!

|  |  |  |
| --- | --- | --- |
| 1. Silver:  4. Fluorine  7. Lead: | 2. Palladium:  5. Cesium:  8. Actinium: | 3. Gallium:  6. Krypton  9. Vanadium: |

**The neutron:**

* This is found in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* It has a charge of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Its mass is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* The ­­­­\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ­­­­­­­­­­­­­ represents the number of \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_.
* Example.
  + Neon has a mass number of \_\_\_\_\_\_\_\_\_\_ and an atomic number of \_\_\_\_\_\_\_\_\_\_. Therefore the number of neutrons is \_\_\_\_\_\_\_\_\_\_.

**Practice!** Find the number of neutrons for the following elements!

|  |  |  |
| --- | --- | --- |
| 1. Manganese:  4. Potassium  7. Zinc: | 2. Bismuth:  5. Sulfur:  8. Scandium: | 3. Osmium:  6. Arsenic  9. Helium: |

Fill in the following table:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Element**  **Name** | **Element Symbol** | **Atomic Number** | **Mass Number** | **# of Protons** | **# of Neutrons** | **# of Electrons** |
|  | Cl |  |  |  |  |  |
| 1. Silver |  |  | 108 |  |  |  |
|  |  |  |  | 8 | 8 | 8 |
|  | Al |  | 27 |  |  |  |
|  | Cs |  |  |  |  |  |
|  |  | 46 |  |  |  |  |
|  |  | 44 | 101 |  |  |  |
| 1. Tungsten |  |  |  |  |  |  |
|  |  |  | 152 | 63 |  |  |
|  |  |  |  |  |  | 91 |

**The Periodic Table**

**Dmitri Mendeleev**: *the dude who invented the table*

* His first periodic table was published in 1869
* Listed the elements in order of increasing \_\_\_\_\_\_\_\_\_\_\_\_\_ mass
* Mendeleev included gaps and predicted the properties of missing elements

Major divisions within Periodic Table

* Period:
* Group/Family:

**Alkali Metals**

* Group \_\_\_\_\_\_\_

* List all alkali metals from your Periodic Table:

**Alkaline Earth**

* Group \_\_\_\_\_\_\_
* List all alkaline earth metals from your Periodic Table:

**Transition Metals**

* Group \_\_\_\_\_\_\_ to \_\_\_\_\_\_\_

**Halogens**

* Group \_\_\_\_\_\_\_
* List all halogens from your Periodic Table:

**Noble Gases**

* Group \_\_\_\_\_\_\_
* List all noble gases from your Periodic Table:

**Assignment!**

* Shade in the following chemical families as indicated on the outline of the periodic table.
* Write in the chemical symbol, atomic number, mass number for the alkali metals, alkaline earth metals, halogens, noble gases.

|  |  |
| --- | --- |
| **Colour:** | **Group:** |
|  | Alkali metals |
|  | Alkaline Earth metals |
|  | Transition metals |
|  | Halogens |
|  | Noble gases |

