**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**8.P.1.2-** Students know:

That atoms are composed of 3 subatomic particles-protons, neutrons, & electrons.

The thing that makes the elements different is the number of protons, neutrons, and electrons. The protons and neutrons are always in the nucleus (the center of the atom). The electrons are always found around the center in areas called orbitals. Protons have a “+” charge. Neutrons have a neutral charge (a charge of zero 0). Electrons have a “-” charge. If the charge on the entire atom is “0”, that means there are equal numbers of protons and electrons.

**How to use the periodic table in order to obtain information about the atom of an element**:

* symbol
  + Symbols are written with one, two, or three letters. The first letter is always capitalized. Each element has a different symbol.
  + Elements are made up of one kind of atom and the symbol for each element is unique.
* atomic number
* atomic mass
* state of matter at room temperature
* number of outer energy level (valence) electrons

**How the periodic table of elements is organized:**

* The periodic table of elements is arranged horizontally (periods) in order of increasing atomic number (number of protons) and vertically (groups) in columns of elements with similar chemical properties. An atom’s identity is directly related to the number of protons in its nucleus. This information can be used to predict chemical reactivity.
* Elements can be classified based on similar properties**,** including highly reactive metals, less reactive metals, highly reactive non-metals, less reactive non-metals, and some almost completely non-reactive gases. Students understand that substances are often placed in categories together if they react in similar ways.
* Examples of major groups of elements that have different physical properties in the periodic table include metals, nonmetals, and noble gases.

**he information that is organized in the periodic table is based on the observations of many scientists over a long period time**.

* Dmitri Mendeleev is generally credited with the creation of the basis for our modern day table. Mendeleev was not the first to suggest a table, but he was the first to create one that predicted the existence of as-yet-undiscovered elements which were later discovered. As of 2012, the periodic table contains 118 confirmed chemical elements.

**Chemical formulas**

* Constructed from the symbols of the elements composing the substances**.** In a chemical formula, the numbers as subscripts show how many of each kind of atom are in the compound. The subscript is written to the lower right of the element. If no subscript is written, only 1 atom of that element is part of the compound. For example, in H2O, the number 2 is the subscript for hydrogen and means there are 2 atoms of hydrogen in the compound of water; since there is no subscript for oxygen it is assumed to be one atom of oxygen.
* Compounds are composed of more than one element and their formulas have more than one type of symbol showing the different elements that compose the compound.
* Students should recognize common substances such as water, (H2O), carbon dioxide (CO2), glucose (C6H12O6), salt (NaCl), hydrochloric acid (HCl), baking soda (NaHCO3), vinegar (HC2H3O2), and ammonia (NH3).

**Comprehension Questions-** answer on a **separate** sheet of paper in **complete sentences**

1. What information can be gathered from the periodic table of elements?
2. How are the elements on the periodic table arranged?
3. Give examples of some of the major groups on the periodic table?
4. Explain the difference between elements and compounds?
5. How does the atomic number change as you move from left to right on the periodic table?
6. What is the significance of the subscript in a chemical formula?
7. List the 3 subatomic particles in the atom and their respective charge?

Set up **separate sheet of paper** like this: **Name**

**M1 Date**

MAIN IDEA

Underlining/highlighting of keywords, phrases throughout text

**M2 Block**

**M3**

**M4**

**S1**

SUMMARIZATION

Paraphrase and/or summarize main ideas

**S2**

**S3**

**S4**

REFLECTION

Responds to text by making a scientific connection or personal reflection

**R1**

**R2**

**V1**

Vocabulary

Choose 4 words from the article AND DEFINE them.

**V2**

**V3**

**V4**

**Q1**

QUESTIONS

**Create** questions about the text that have not been answer in the article. You do NOT have to answer them.

**Q2**

**Q3**

**Q4**

**A1**

**A2**

ANSWER QUESTIONS

Answer comprehension questions at end of text in complete sentences. You do NOT have to rewrite the question.

**A3**

**A4**

**A5**

**A6**

**A7**