GET TO KNOW YOUR PERIODIC TABLE

**Periods and Groups**

The horizontal rows in the table are referred to as periods, which are numbered from 1 to 7. The columns are referred to as groups or families. The numbering system for groups varies between textbooks and instructors. The newest numbering system keeps things simple; groups are numbered from 1-18 (as shown on your periodic table).

The “old school” numbering system separates the groups into two categories: “A” group elements (also known as main group elements) and “B” group elements (also known as transition elements or transition metals). The main groups make up the left and right sides of the periodic table and are labeled in order from 1A-8A. The transition metal groups are located in the middle of the periodic table and are labeled in a bizarre fashion that goes in this order: 3B, 4B, 5B, 6B, 7B, 8B, 1B, 2B. (To make matters even more confusing, “group” 8B is actually made up of three groups of elements!)

Needless to say, we’re going to focus on the newest numbering system, with groups numbered from 1-18. But, since some textbooks still use the old numbering system, it is important to be familiar with both. On your periodic table, please label the main groups with the old numbering system in addition to the new numbering system. (Group 1 = Group 1A, Group 2 = Group 2A, Group 13 = Group 3A, Group 14 = Group 4A, etc.) Don’t worry about re-labeling the transition metals. Use the diagram above as a guide.
Some of the main groups are given special names, as listed below:

Group 1: Alkali Metals
Group 2: Alkaline Earth Metals
Group 17: Halogens
Group 18: Noble Gases

**Metals, Nonmetals, and Metalloids**

The “stairway” that starts to the left of boron in the periodic table separates the **metals** from the **nonmetals**. Metals are located to the left of this line, while nonmetals are located to the right. **Along** the stairway, there are several elements that are difficult to classify. These are known as the **metalloids or semi-metals**, which have properties of both metals and nonmetals. There are six metalloids: Boron, Silicon, Germanium, Arsenic, Antimony, and Tellurium. (You should highlight the metalloids on your periodic table).

**Lanthanides and Actinides**

The two rows that appear at the bottom of the periodic table are known as the **lanthanides** and the **actinides**. The lanthanides, named after the first element in the series, lanthanum, are essential in creating color in modern television receivers. The actinides, named after the first element in its series, actinium, are all radioactive. Since only thorium and uranium occur in nature, the rest of the actinides are synthesized in the laboratory. Notice that lanthanum (atomic number = 57) and actinium (atomic number 89) both appear within the periodic table, but the rest of the lanthanides and actinides do not. In a complete periodic table, the rest of the lanthanides and actinides would be inserted after lanthanum and actinium in order to preserve the sequence of atomic numbers. These two groups are often separated from the rest of the table simply to save space.

**What is Periodic about the Periodic Table?**

The periodic table is an arrangement of elements, in order of increasing atomic number, such that elements with similar chemical properties **fall directly beneath one another in vertical groups**. As a result, certain sets of properties repeat each other **periodically**—each time we move across a row. As a result, the rows on the table are more commonly referred to as **periods**.