**Periodicity: Periodic Table**

1. **Periodic Law**
	1. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ properties of the elements are periodic functions of their atomic numbers; properties of the elements occurred at repeated intervals called periods.
	2. This defines the property of periodicity
2. **Periodic Trends**
	1. properties that show \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when examined across the periods or vertically down the groups
	2. while there are many periodic trends, we will focus on
		1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (the plural of radius)
		2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (the plural of radius)
3. **Atomic Radii**

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the distance between the nuclei of identical atoms that are bonded together.
	2. Distance between nuclei \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_across periods because the higher nuclear charge (positive) pulls the electrons closer to the nucleus
	3. increases down groups because energy levels are being added outside the nucleus

1. **Ionization \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	1. The energy required to remove one electron from a neutral atom of an element.
	2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ across periods because it takes more energy to overcome the electrons attraction to the increasing nuclear charge
	3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ down groups because it is easier to overcome the nuclear charge for the outermost electrons as the number of energy levels increases
2. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	1. A measure of the ability of an atom in a compound to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from other atoms.
	2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ across periods as a result of the increasing nuclear charge and ability of the nucleus to attract electrons from a neighboring atom

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ down groups because the nuclear charge is less able to attract electrons from another atom as additional energy levels are added
1. **Atomic \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	1. The radius of an atom forming \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or an ion. The radius of each atom in an ionic bond will be different than that in a covalent bond.
	2. The reason for the variability in radius is due to the fact that the atoms in an ionic bond are of greatly different size. One of the atoms is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which is smaller in size, and the other atom is an anion which is a lot larger in size.

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_across the period until formation of the negative ions then there is a sudden increase followed by a steady decrease to the end
	2. The sudden \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on formation of negative ions is due to the new (larger) outer shell