Unit 4: Periodic Trends **Name** _____
Periodic Trends Jigsaw Activity **Date** _____ **Block** ____

Periodic Trend Research

1. Which trend are you researching? **Metallic Properties**
2. Define "**metallic properties**". Metallic properties are based on an elements ability to **lose valence electrons**; the easier elements lose electrons, the more their metallic properties increase
3. What must happen for metals to **react** with other atoms? Metals must **LOSE** valence electrons in order to react with other atoms; positive metal ions are called **CATIONS**
4. What is a "**noble metal**"? How are they different than regular metals? Noble metals are **not corrosive** like other metals; they are located in the d-block; Examples: Gold (Au) and Silver (Ag)
5. What are "**metalloids**"? How are they different from regular metals? Metalloids have more valence electrons than other metals in their period of the table; they have **BOTH** metal and nonmetal properties
6. How are the **Lanthanide** metals different? Lanthanides are called rare earth metals because they are difficult to mine; located in the f-block; used in hybrid cars, superconductors, and permanent magnets.
7. How are the **Actinide** metals different? Actinides are all radioactive; located in f-block; used in nuclear reactors and atomic bombs
8. What happens to the trend as you move from **left to right** across a period? Atoms become **LESS** metallic as you move to the right because they have **more valence electrons;** Metallic properties **decrease**
9. What happens to the trend as you move **down a group**? Atoms become **MORE** metallic as you move down the periodic table because the valence electrons are further away and easier to remove
10. Which group/ element has the **largest value** for this trend? Group 1 Alkali Metals / Francium
11. Which group/ element has the **smallest value** for this trend? Group 2 Alkaline Earth / Beryllium
12. Explain the phrase "**sea of electrons**"? When metal atoms continue passing valence electrons on to the next atom; this flow of electrons is known as **electricity;** also known as "**delocalized**" electrons
13. Explain what an **alloy** is and give examples. Alloys are **homogeneous mixtures** of metals and sometimes nonmetal atoms; different physical and chemical properties; Examples: **brass, bronze, steel**
14. How do you think this trend affects **chemical reactions**? When metals **LOSE** electrons, they **TRANSFER** the electrons to nonmetals through **IONIC BONDING**
15. How do **other trends** relate to this one? **Atomic size** and **shielding** affect metallic properties The larger the atom, the greater the shielding effect, the easier to lose electrons, the more metallic the atom