Read “The Periodic Table” and the questions throughout the passage. Write complete sentences to answer each question.

**The Periodic Table**

The Periodic Table is divided into four sections: **metals, nonmetals, metalloids, and noble gases**. The zigzag line separates the metals from the nonmetals, with the exception of hydrogen. Metalloids are found along the zigzag line. The noble gases are family of elements down the final right column in the periodic table. They are stable and do not mix easily with other elements.

1. **What are the four classifications of elements?**

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Physical properties can be used to help identify if an element is a metal or nonmetal. Determining metalloids can be a bit more difficult. Metals, located to the left of the zigzag line, have a ***shiny luster*** and often look metallic, like aluminum foil or nails**. Other properties** of metals ***include high density, high melting point, and the ability to conduct heat and electricity*.** Most metals are also ***ductile and malleable***. If a metal is ductile, it can be pulled into a wire like copper. Malleability is the ability of a metal to be pounded or flattened into thin sheets like aluminum foil.

1. **What are the properties of metals?**

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Nonmetals, located to the right side of the zigzag line, have almost the opposite properties of metals. These elements are ***dull, or lackluster***. Nonmetals are ***insulators*** and do not conduct heat or electricity well. Elements that are nonmetals are ***brittle and break easily***, so they cannot be made into wires or sheets. Other physical properties of nonmetals include ***low melting points and generally a lower density*** compared to metals.

1. **What are the properties of nonmetals?**

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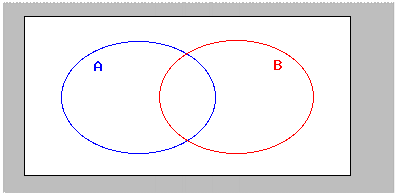
The elements found along the zigzag line between the metals and nonmetals are called metalloids, with the exception of aluminum. The word *metalloid* means “metal-like.” ***Metalloids have physical properties similar to both metals and nonmetals***. Like metals, metalloids conduct heat and electricity but not effectively.

1. **What are the properties of metalloids?**

Noble gases are found in the last column family of the periodic table. Noble gases are **stable** because they have the maximum number of electrons possible, which is 8, in their outer shell**. Noble gases do not combine well with other elements.**

1. **What are the physical properties of the Noble Gases?**

**Create a Venn Diagram in your journal to compare the physical properties of metals, nonmetals, and metalloids.**



Frayer Model

Use the information from the reading passage to complete the Frayer model on a word assigned to you.

Definition Characteristics/Properties

Examples Nonexamples

Element Classification Use a Periodic Table to complete the following table.

|  |  |  |
| --- | --- | --- |
| **Element Name** | **Element Symbol** | **Classification**  **Metal, Nonmetal, Metalloid, Noble Gas** |
| **sodium** |  |  |
| **nitrogen** |  |  |
| **silicon** |  |  |
| **calcium** |  |  |
| **neon** |  |  |
| **iron** |  |  |
| **chlorine** |  |  |
| **arsenic** |  |  |
| **carbon** |  |  |
| **copper** |  |  |
| **boron** |  |  |
| **helium** |  |  |