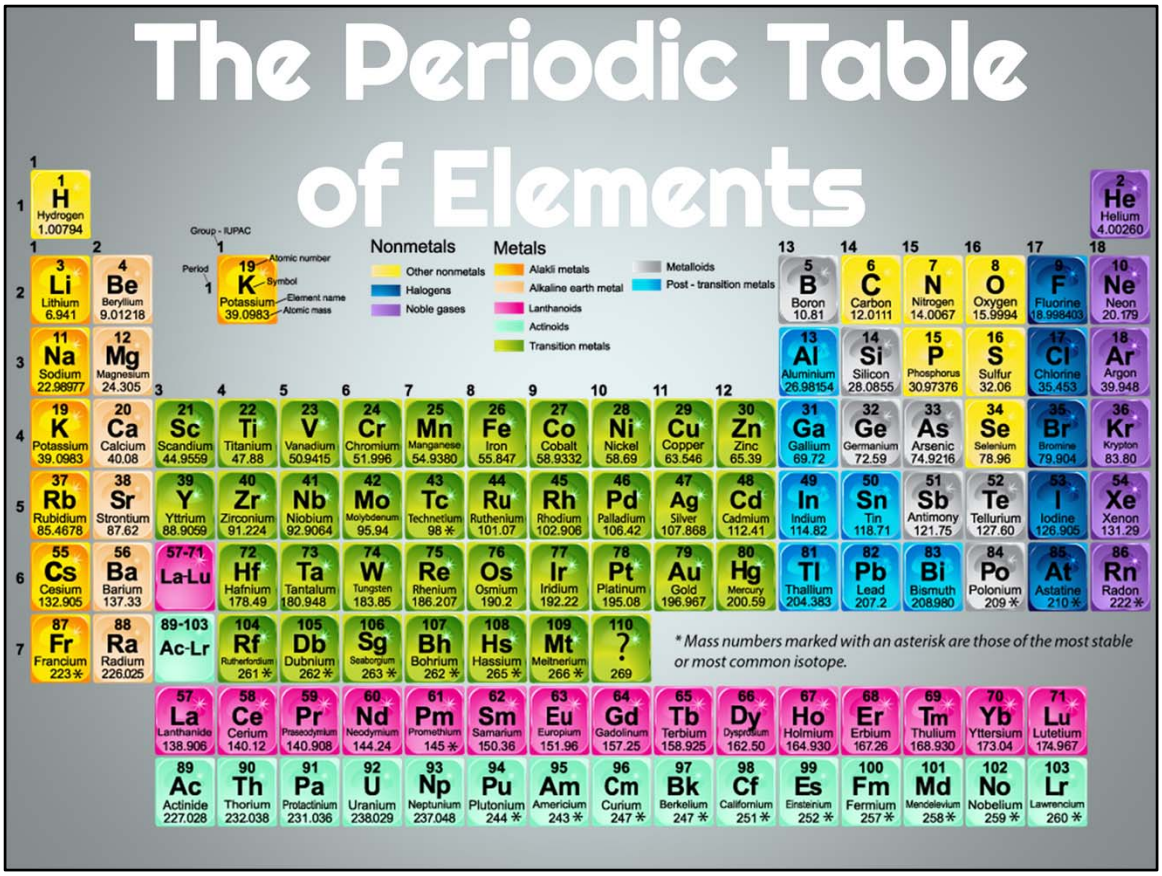
Module 5: Minerals

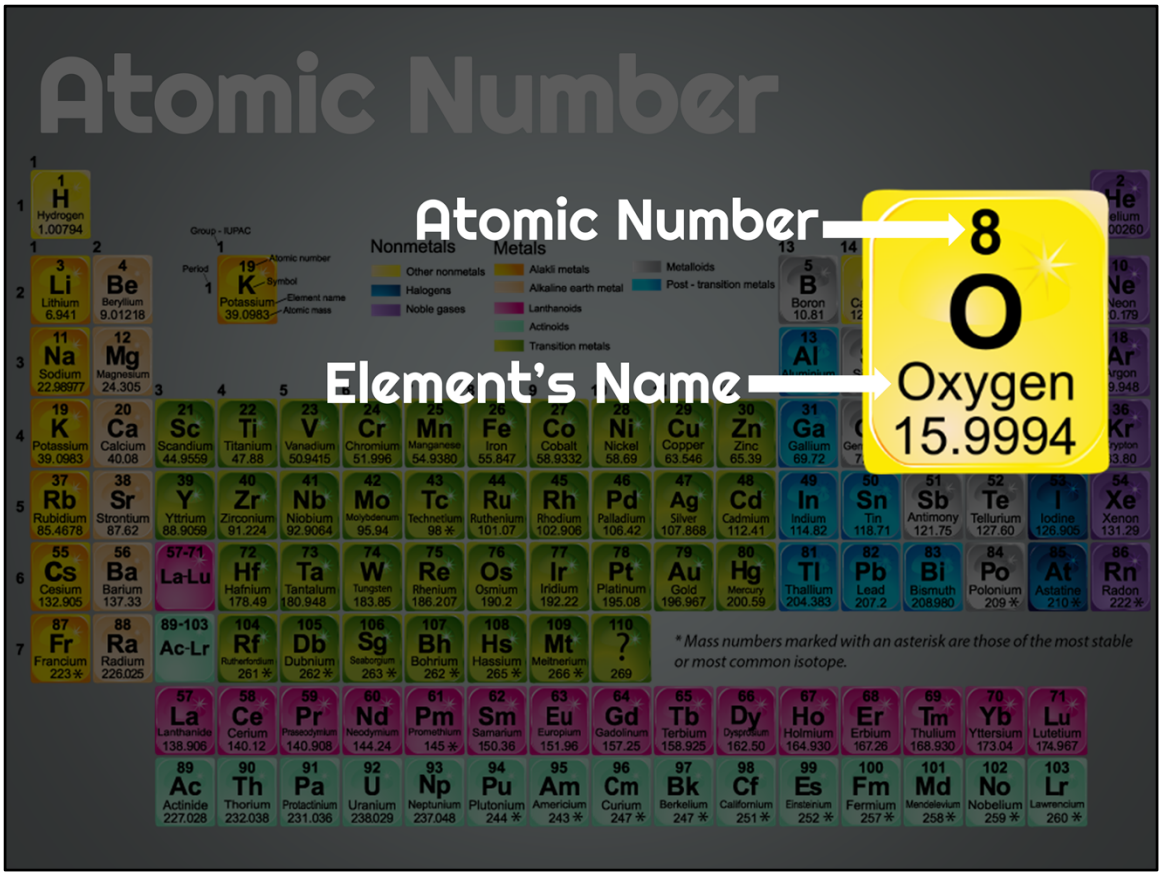
Topic 1 Content: The Periodic Table of Elements Presentation Notes



Chemical elements have different properties that make their organization somewhat tricky. One of the most recognized and famous methods of classification of chemical elements is the modern periodic table of elements. The periodic table of elements is a table that displays chemical elements according to trends in the elements' properties. As new elements and information about chemical properties are discovered over time, the table changes to reflect advances in chemistry.

Module 5: Minerals

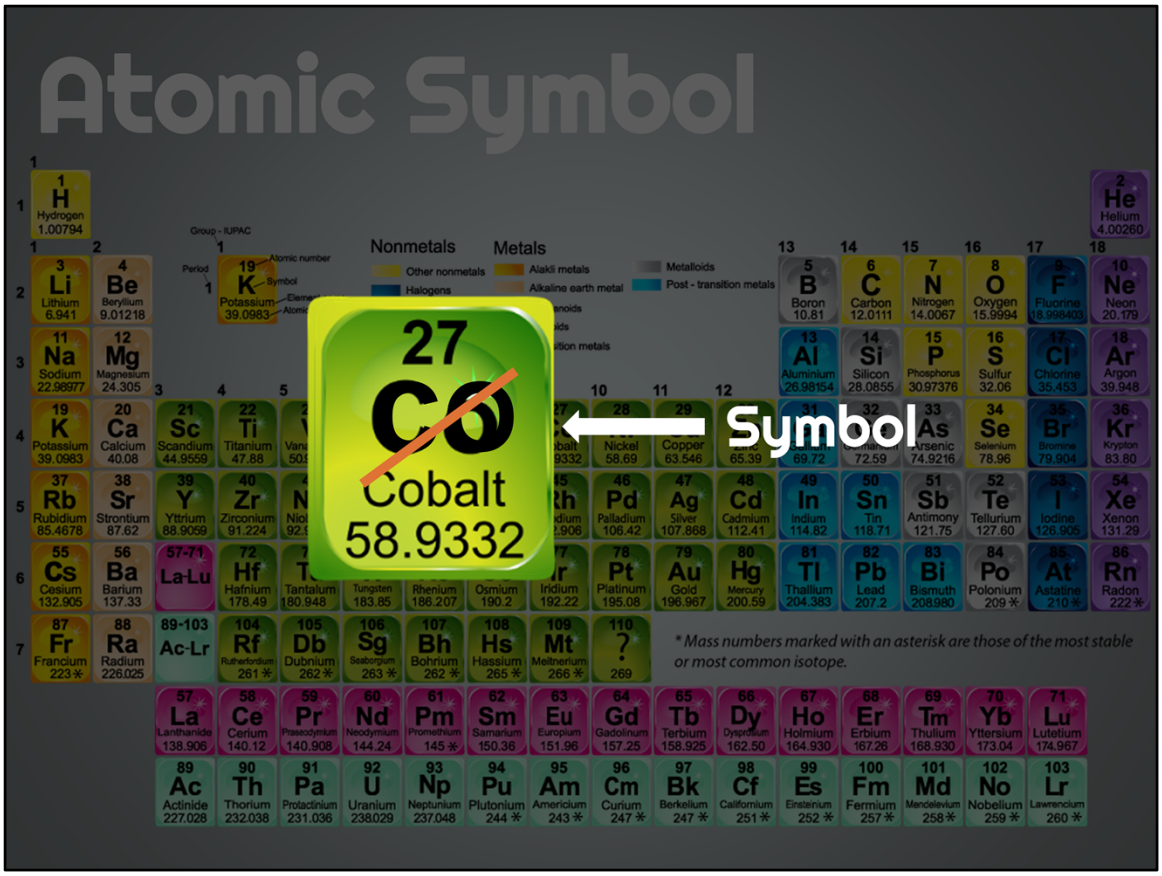
Topic 1 Content: The Periodic Table of Elements Presentation Notes



On the periodic table, elements are arranged by their atomic numbers. The smallest "division" on the periodic table is the block that provides information about each named element. In addition to the element's name, the information for each element should include the atomic number of the element. This number is an indication of the number of protons in an atom's nucleus and is specific to the element.

Module 5: Minerals

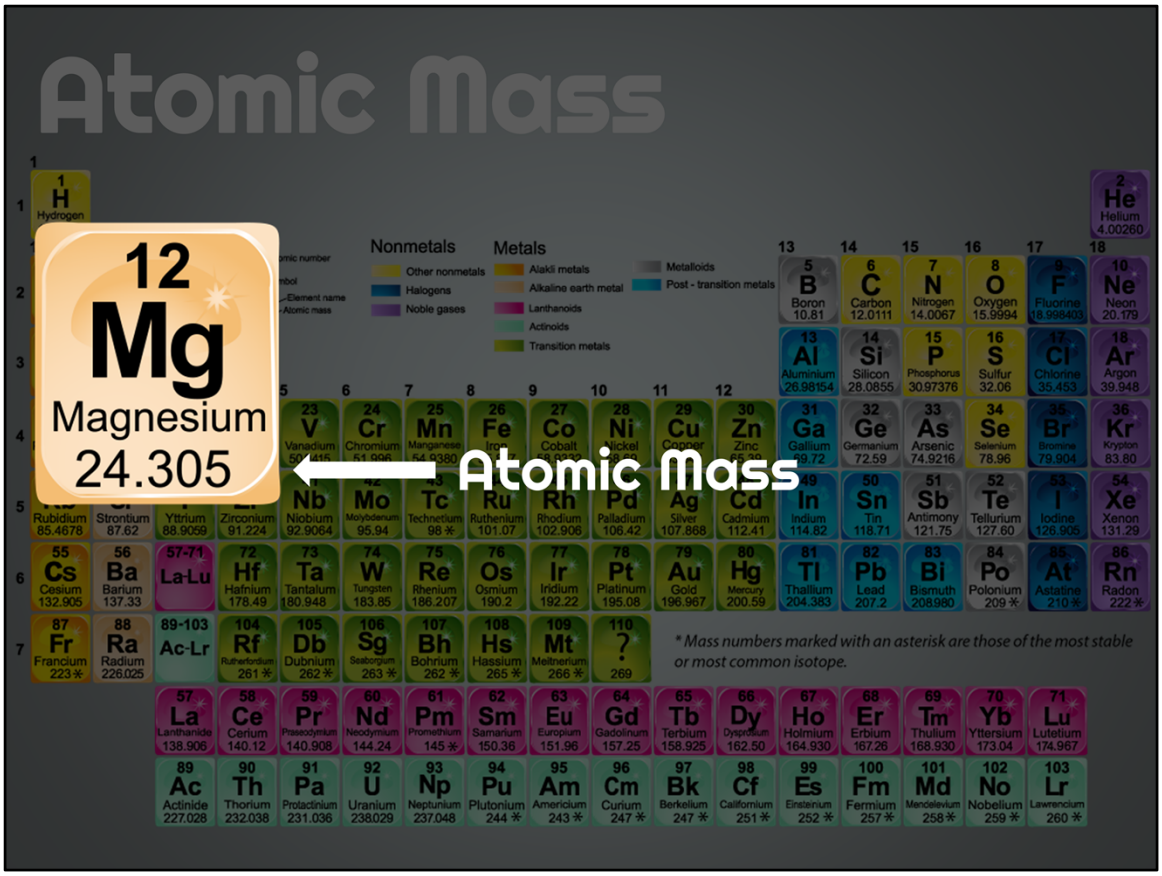
Topic 1 Content: The Periodic Table of Elements Presentation Notes



An element's **symbol** is the one, two, or three letter symbol that represents the element. In this image, you can see that the chemical symbol for copper is Cu. It is important that the first letter in the symbol is capitalized and the second and third letters are lowercase. For example cobalt has an atomic number of twenty-seven and the symbol Co. If you made a mistake and capitalized the second letter making the symbol CO, you would create the chemical symbol for the compound carbon monoxide.

Module 5: Minerals

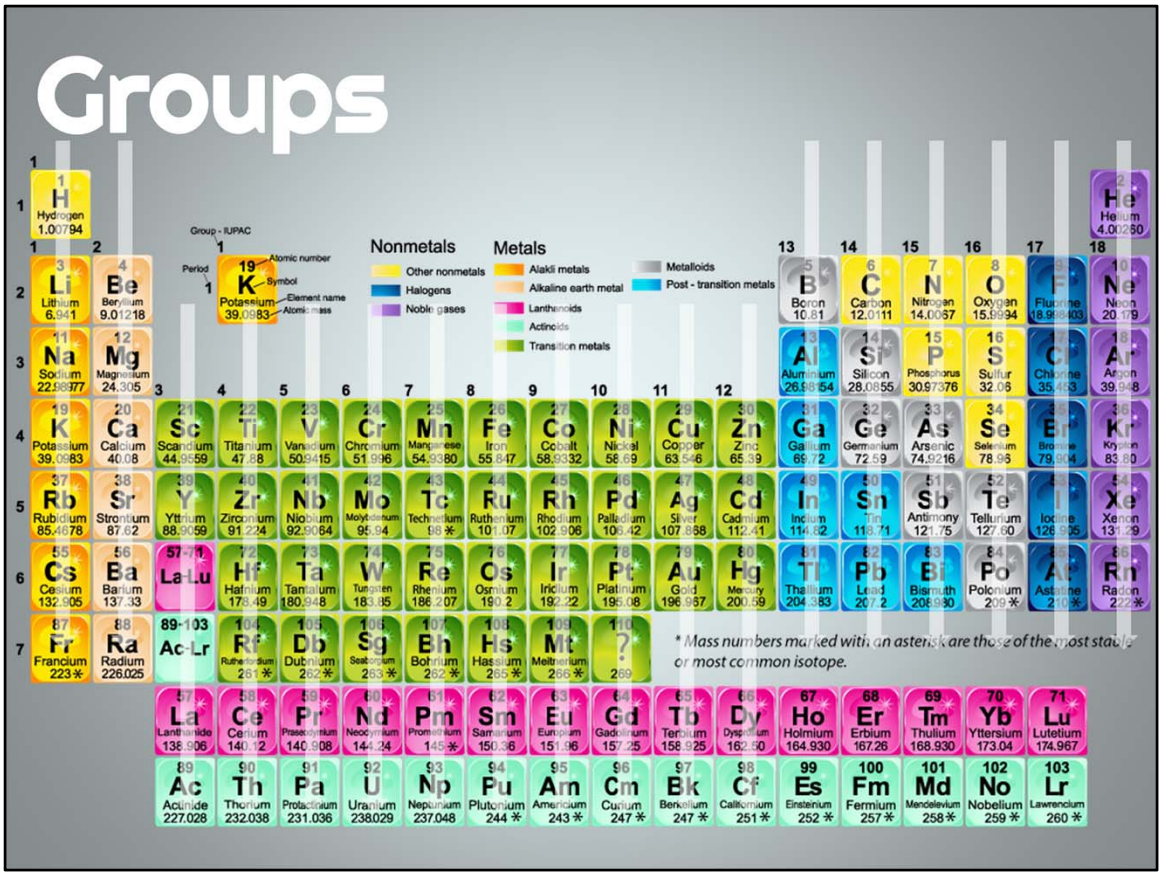
Topic 1 Content: The Periodic Table of Elements Presentation Notes



The **atomic mass** is the total mass of a single atom of an element. In the image shown, you can see that the atomic mass for magnesium is 24.305. The atomic mass of an element's atom is provided in atomic mass units, or amu.

Module 5: Minerals

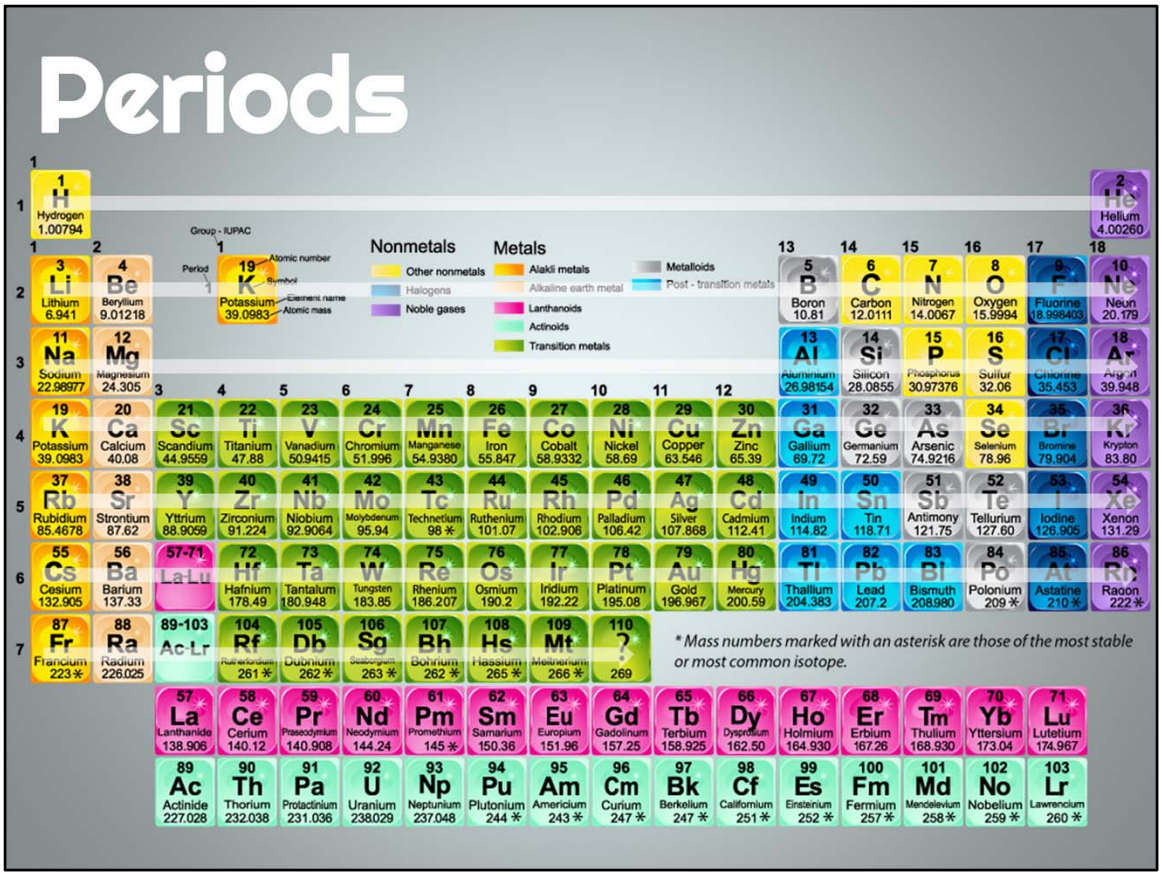
Topic 1 Content: The Periodic Table of Elements Presentation Notes



On the periodic table, a **group** is a column that shares similar physical and chemical properties. One example of a group is Group 18. Group 18 is commonly known as the Noble Gases. These elements all share the property of being non-reactive.

Module 5: Minerals

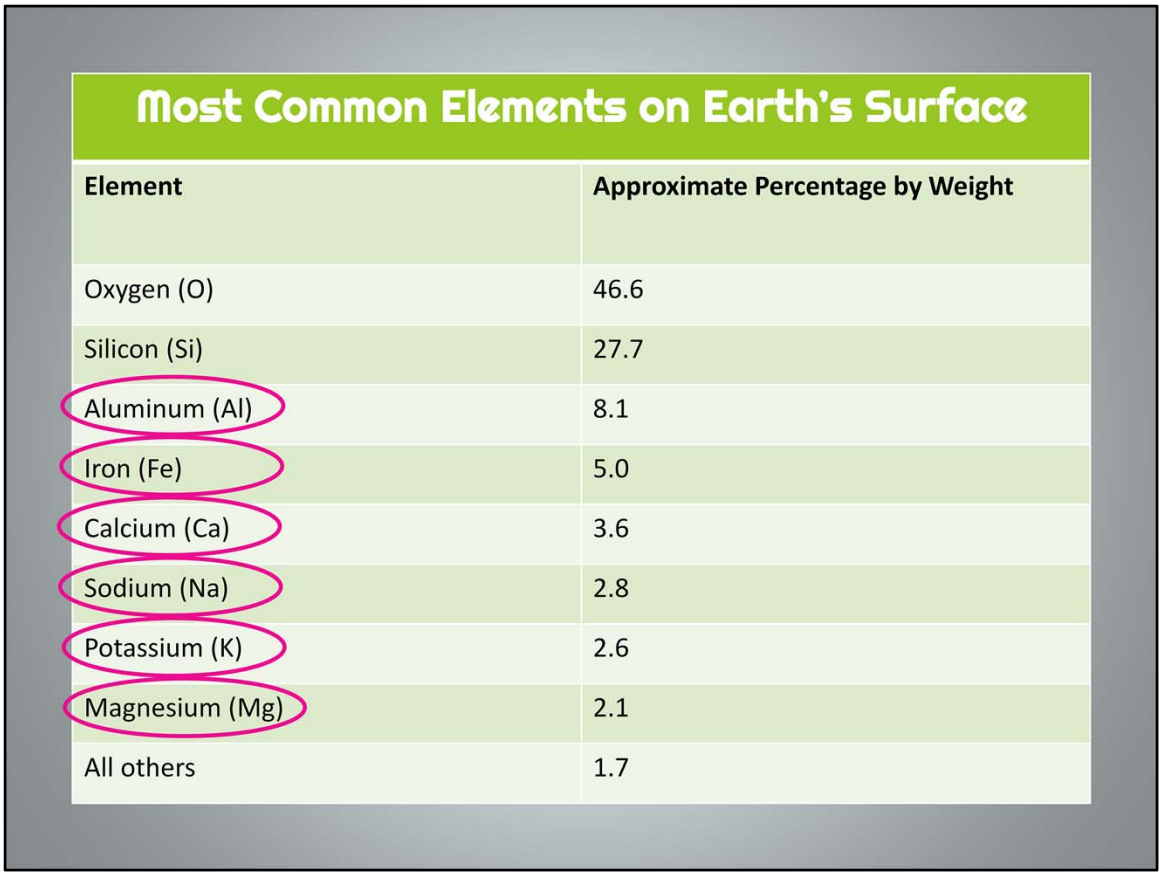
Topic 1 Content: The Periodic Table of Elements Presentation Notes



On the periodic table, a **period** is a row of elements. You may notice that the number of elements in a period varies. For example, Period 1 only contains two elements - hydrogen and helium.

Module 5: Minerals

Topic 1 Content: The Periodic Table of Elements Presentation Notes



Most Common Elements on Earth's Surface

Element	Approximate Percentage by Weight
Oxygen (O)	46.6
Silicon (Si)	27.7
Aluminum (Al)	8.1
Iron (Fe)	5.0
Calcium (Ca)	3.6
Sodium (Na)	2.8
Potassium (K)	2.6
Magnesium (Mg)	2.1
All others	1.7

One thing that Earth scientists have determined by studying the periodic table is that six of the eight most common elements on Earth are metals. These metals are circled on the table shown here. All metals share the specific characteristic of being able to be shaped and bent into a wire. Metals can also conduct electricity.