**Unit 4 - LEARNING GOALS for ATOMIC STRUCTURE**

**and THE PERIODIC TABLE**

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| Guiding Question: How does the structure of the atom determine placement on the periodic table *and* predict patterns in the physical and chemical properties of elements? | |
| Content Goals  Students will be able to:   * Identify periods, families, and groups (by number and name) on the periodic table * Identify elements as metals or nonmetals * Predict the number of valence electrons for an element based on the periodic table * Predict atomic structure and electron arrangement based on placement on the periodic table * Use the placement of elements in periods and groups on the periodic table to predict characteristics or properties such as:   Atomic radius  Ionization energy  Electronegativity  Luster  Texture  Conductivity   * Compare atoms of different elements based on atomic radius, ionization energy, and electronegativity * Explain comparison of elements using nuclear charge and electronic structure in argument * Predict the ionic charge for elements * Explain the role of valence electrons in physical and chemical properties and ion formation | Skills Goals  Students will be able to:   * Properly present data in a graph * Interpret and analyze information presented in graphs and tables * Identify topic and summarize main idea and supporting statements for a scientific text |
| Organizing Ideas (Big Ideas and Links between Big Ideas)  Students will:   * Understand how atoms of different elements are similar and different * Understand how the Periodic Table is arranged based on atomic structure, as well as chemical and physical properties of elements | |
| Assessment – How will I know if students have mastered content, skills, and big ideas?  Students will:   * Prepare data tables, graphs, and calculations using experimental data * Complete tests and quizzes on atomic structure and the organization of the periodic table | |

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| Key Vocabulary: |
| Valence electrons Alkaline Earth Metals Noble gases  Period Transition metals Atomic radius  Group Inner Transition metals Ionization energy  Family Metalloids Electronegativity  Alkali Metals Halogens Ionic Radius |

