**HPS S2 Unit 6 Objective Work 2021 Name:**

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| **Objective:** | **Notes:** |
| 1. Explain how the atomic theory has evolved over time.  KEY CONCEPTS: model, Democritus/Leucippus, Dalton, Thomson, Rutherford, Bohr, Electron Cloud (Quantum) Model |  |
| 2. Classify elements as metals, nonmetals, and metalloids based on their properties and position on the periodic table.  KEY CONCEPTS: Mendeleev, conductivity, luster, malleability |  |
| 3. Identify periods and families on the periodic table by name, common properties, and valence electrons.  KEY CONCEPTS: valence, charge (ox #), period, family, electronegativity, radius, reactivity, dot diagram |  |
| 4. Explain how ionic compounds are formed and predict their formulas.  KEY CONCEPTS: cation, anion |  |
| 5. Explain how covalent compounds are formed and draw their Lewis structures.  KEY CONCEPTS: polar bonds, EN differences |  |
| 6. Compare and contrast the physical and chemical properties of ionic and covalent compounds.  KEY CONCEPTS: melting point, solubility, state at room temp, conductivity |  |
| 7. Balance a chemical equation using atom counts and coefficients.  KEY CONCEPTS: law of conservation of matter |  |
| 8. Identify the types of common chemical reactions.  KEY CONCEPTS: synthesis, decomposition, single replacement, double replacement, combustion |  |
| 9. Outline factors which affect the rate of chemical reactions.  KEY CONCEPTS: surface area, temperature, concentration, catalyst |  |