Chemistry Unit 4: Electrons	
Grade	**10-12**
Unit of Study	**Unit 4: Electrons**
Length of Unit	**20 days**

Missouri Learning Standards

- 10-12.PS1.A.1: Develop models to illustrate the atomic composition of simple molecules and extended structures.
- 10-12.PS1.A.3: Analyze and interpret data to explain the conservation of mass during a chemical reaction.
- 10-12.PS1.B.1: Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
- 10-12.PS1.B.2: Develop and use models to explain the arrangement and interactions of electrons in atoms, including electron configurations and orbital diagrams.

Unit 4: Learning Targets

- I can describe the properties of electrons, including their charge, mass, and location within the atom.
- I can explain the concept of energy levels and sublevels in relation to electron configurations.
- I can use electron configurations and orbital diagrams to represent the arrangement of electrons in atoms.
- I can apply the principles of quantum mechanics to understand the behavior of electrons.
- I can predict the reactivity and chemical properties of elements based on their electron configurations.

Intervention and Enrichment

Students needing additional support will receive targeted practice worksheets, one-on-one tutoring sessions, and access to interactive simulations. Enrichment activities will include advanced problem-solving exercises, research projects on electron behavior, and experiments demonstrating electron configurations.

Assessments	
MLS (Learning Goal)	**Description or Location**
Understanding and applying concepts related to electrons and electron configurations.	Unit 4 Assessment folder

Vocabulary

- Electron
- Charge
- Mass
- Location
- Energy Levels
- Sublevels
- Electron Configuration
- Orbital Diagram
- Quantum Mechanics
- Reactivity
- Chemical Properties

Instructional Materials

- Textbook chapters on electrons and electron configurations
- Models and diagrams illustrating electron behavior
- Interactive simulations (e.g., PhET)
- Videos explaining electron configurations and quantum mechanics
- Worksheets and practice problems

Additional Instructional Resources

See "Unit 4 Resources" folder for supplementary materials including:

- Interactive electron configuration simulations
- Additional practice worksheets
- Video links and documentaries
- Research project guidelines

Reflections for Future Revisions

- Incorporate more visual aids and interactive demonstrations to enhance understanding of electron behavior.
- Provide opportunities for students to explore real-world applications of electron configurations.
- Offer differentiated instruction to accommodate diverse learning needs and styles.
- Continuously assess student understanding through formative assessments and adjust instruction accordingly.