

## Unit 3 Study Guide – Atomic Structure and Periodic Properties

*By the end of this unit, you should achieve these learning targets:*

Learning Target	How am I doing with this? Write down evidence!
I can identify the independent and dependent variables in an experiment.	
I can use a set of data to determine whether it should be graphed as a bar or line graph and explain why.	
I can identify what makes elements different from one another and how they are distinguished.	
I can identify how the periodic table is organized and explain why this is the method used.	
I can describe the parts of an atom and identify the subatomic particles found in each area.	
I can describe the symbol, charge, location, and <b>relative</b> mass of all three subatomic particles.	
I can explain what valence electrons are and why they are used for bonding/reacting.	
I can explain the difference between atoms and isotopes.	
I can explain the difference between atoms and ions.	
I can determine if an element is a metal, metalloid, or nonmetal based on physical properties.	
I can explain why the mass of an atom is focused in the nucleus but most of the atom's size comes from the electrons.	

<p>I can identify the following for the major groups of the periodic table:</p> <ul style="list-style-type: none"> <li>- Location</li> <li>- Element Examples</li> <li>- Properties</li> <li>- # of Valence Electrons (if applicable)</li> <li>- Predicted Common Charge (if applicable)</li> </ul>	
I know how to read the periodic table to determine electrons, protons, and neutrons of an element.	
I can use the isotopic symbol to determine information about an atom/ion.	
I can explain why the charge of an atom should be neutral unless it has gained/lost electrons.	
I can explain the difference between a cation and an anion.	
I know the purpose of nuclear decay and can explain why it occurs.	
I can explain the basic organization of electrons around an atom.	
I can explain the process of an electron transitioning from ground state to excited state and back to ground state.	
I can explain what determines the color and/or type of EM radiation emitted from an atom.	

**Write down any information you struggled with in the space below to review again:**

**Remember, 10-15% of this exam may consist of questions and topics from:**

- Unit 1 - Fundamentals of Chemistry
- Unit 2 - Energetics and Gas Laws