

## LEARNING REFLECTION SHEET

<b>CHAPTER 4 OBJECTIVES</b>	<b>Have you learned this concept or skill (Scale of 1-10)?</b>	<b>What Evidence Do You Have that You Learned It? (List at least 2, or more, particular notes, assignments, labs, or quizzes you completed that demonstrate your skill or knowledge)</b>	<b>What scores did you receive on the assignments, labs or quizzes you listed?</b>	<b>Is this a concept or skill you anticipate needing additional practice with before the test? How do you know?</b>
<b>SECTION 4-1</b>				
Explain the mathematical relationship between the speed, wavelength, and frequency of electromagnetic radiation ( $c = v\lambda$ )				
Discuss the dual wave-particle nature of light				
Explain the mathematical relationship between the frequency and energy that Max Planck and Albert Einstein contributed ( $E = hc/\lambda$ . OR $E = hv$ )				
Discuss the significance of the photoelectric effect and the line-emission spectrum of elements to the development of the atomic model (i.e. electrons jumping energy levels!)				
Discuss the Bohr model of the hydrogen atom				
VOCAB: electromagnetic spectrum, electromagnetic radiation, wavelength, frequency, photoelectric effect, photon, ground state, excited state				

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<b>SECTION 4-2</b>				
<b>Compare and contrast the Bohr model and the quantum model of the atom</b>				
<b>Explain how the Heisenberg uncertainty principle and the Schrodinger wave equation led to the idea of atomic orbitals</b>				
<b>List the four quantum numbers and describe their significance</b>				
VOCAB: Heisenberg uncertainty principle, quantum theory, orbital, quantum numbers: principal (n), angular momentum (l), magnetic (m), and spin				

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<b>SECTION 4-3</b>				
List the total number of electron needed to fully occupy each main energy level				
State the Aufbau principle, the Pauli exclusion principle, and Hund's rule AND explain how they relate to writing the electron configuration for an atom				
Describe the electron configuration for atoms of any element using orbital notation, electron-configuration notation, and, when appropriate, noble-gas notation configuration				
VOCAB: Aufbau principle, Pauli exclusion principle, Hund's rule, electron configuration, highest occupied level, inner-shell electrons, noble gases, noble-gas notation				