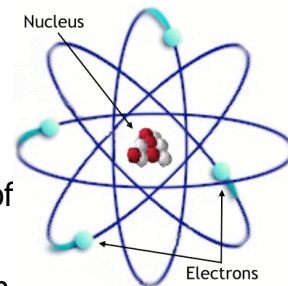


Unit 6: Atomic Theory, Bonding, & Periodic Table

Essential Understanding/Questions

1. Understand the Atomic Model of Matter and its relationship to the properties of matter.
 - b. How has our concept of the atom changed over time, and what evidence has been used to support these models?
 - c. How does atomic structure relate to the placement and properties of elements on the periodic table?
2. Understand chemical elements and compounds and how they react with each other.
 - a. How do elements bond (including valence electron and energy changes) to form chemical compounds and how are these compounds written and named?
 - b. What are the differences between ionic and covalent compounds?
 - c. What are the types of chemical reactions and how are they written?



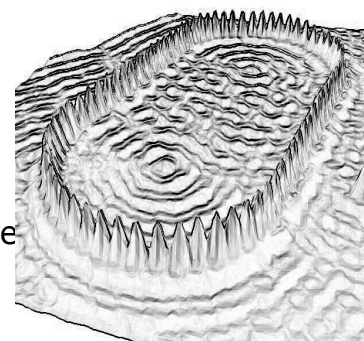
Main Learning Results

D-3, [a, b, d]

Textbook: Chapters 11 & 12

Objectives:

- A. Review the evolution of Atomic Theory.
- B. Explore the nature of electromagnetic radiation.
- C. Learn how atoms emit light
- D. Understand how an electron's position is represented by the wave mechanical model.
- E. Learn how to represent electron configuration.
- F. Explore the relationships between electron configuration and the periodic table.
- G. Learn more about types of chemical bonds and why & how they form.
- H. Learn about ionic and covalent structures and how they can be represented.



Test Date: Tuesday, May 19, 2009

Grading Scale

A	B	C	D
93 – 100	85 – 92	77 - 84	70 - 76

Name: _____

Unit 6 Schedule

Day	Date	What the Plan is
W	4/29	KWL – Introduction to Unit Sec. 11.1 - 11.3: History of the Atomic Model: <i>Scientist List</i> Electromagnetic Radiation & Atomic Spectra <i>How much Cu in a penny?; Spectrum Activity #1</i>
TH	4/30 Activity Period	Sec. 11.1 (etc.) History of the Atomic Model <i>Think Tube Demo; Atom Timeline</i>
F	5/1	Sec. 11.3 – 11.5: Energy levels, Light, & Bohr's Model of the Atom <i>Intro: Internet Inquiry Project</i>
M	5/4	<i>Flame Test lab</i> Bohr's Model <i>Spectrum Activity #2</i>
T	5/5	<i>Quantum Leap lab; Timeline</i> Sec. 11.6 & 11.7: Wave Mechanical Model & Orbitals
W	5/6 Late Arrival	Sec. 11.8 & 11.9: Wave Mechanical Model & Electron Configuration; <i>Orbitals</i> <i>Hog Hilton</i> <i>Chem Bingo</i>
TH	5/7	Sec. 11.10 & 11.11: Electron Configurations & the Periodic Table <i>Electron Configuration & Periodic Table applet - Demo</i>
F	5/8	Sec. 11.11: Periodic Table - trends <i>Periodic Trends: 3D graphing</i>
M	5/11	QUIZ – Ch. 11 Sec. 12.1 – 12.3: Bonds, Electronegativity & Bond polarity
T	5/12	Sec. 12.4 & 12.5: Electron Configurations & Ionic Bonding
W	5/13	Sec. 12.6 & 12.7: Lewis Structures
TH	5/14	Sec. 12.6 & 12.7: Lewis Structures <i>Virtual Molecules</i>
F	5/15	Sec. 12.7 & 12.8: Lewis Structures <i>Molecular Models lab</i>
M	5/18	<i>Internet Inquiry Presentations</i> <i>Catch up & Review</i>
T	5/19	<i>Unit 6: Review & Test</i>

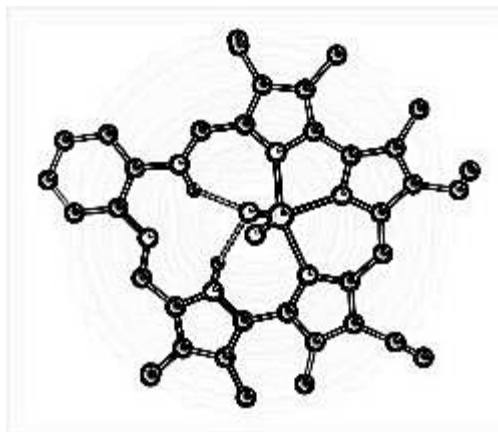
This schedule is tentative. It's provided to give you an approximate idea about what to expect each day.

Name: _____

C-Layer Assignments (Basic knowledge & understanding)

You may get credit for up to 84 points from this layer. This will give you a C⁺. You should attempt all of the assignments, but the quizzes and labs are required.

	Assignment Description	Due Date	Value (Pts)	Pts. Earned
1	KWL (start)	4/29	2	
2	Atom Scientist List	4/30	5	
3	Flame Test lab	5/5	10	
4	Spectrum Activity #2	5/5	5	
5	Quantum Leap lab	5/6	5	
6	Orbital Activity – Hog Hilton	5/7	5	
	Periodic Trends Graph	5/8	10	
7	Quiz: Chapter 11	5/11	10	
8	Notes or Vocabulary – Ch. 11: a) Triple Entry, b) Flash Cards, c) Concept Map, or d) "Double Entry" Notes	5/11	10	
9	Atom Model History: Time Line	5/15	15	
11	Notes or Vocabulary – Ch. 12: a) Triple Entry, b) Flash Cards, c) Concept Map, or d) "Double Entry" Notes	5/18	5	
13	KWL (finish)	5/19	2	
	total		84	



Name: _____

B-Layer Assignments (application or manipulation of knowledge)

Choose one. 8 points possible.

	Assignment Description	Due Date	Value (Pts)	Pts. Earned
14	Internet Inquiry Presentation. Instructions are on a separate handout.	5/18	8	

A-Layer Assignments (critical thinking). Make sure to fill out an A-Layer sheet. Read & summarize 3 articles and write a good 2-paragraph response to the question. Remember to support your answer with evidence from what you read.

Choose one. 8 points possible.

	Assignment Description	Due Date	Value (Pts)	Pts. Earned
15	Read the "Chemistry In Focus" on p.307: <i>Atmospheric Effects</i> . Read at least 2 other recent articles about Global Warming. At least one should be a scientific or scholarly source. What, if anything, should be done about climate change? Here's an article from Nature News: http://www.nature.com/news/2008/081030/full/news.2008.1195.html	5/20	8	
16	Read the "Chemistry In Focus" on p.357: <i>Hiding Carbon Dioxide</i> . Read at least 2 other recent articles about carbon sequestration. At least one should be a scientific or scholarly source. Do you think that carbon sequestration is a practical solution to climate change? Here's an article from Nature News: http://www.nature.com/news/2007/070924/full/news070924-8.html	5/20	8	
17	There was a proposal last year to put a Coal Gasification plant on the site of the former Maine Yankee nuclear power plant in Wiscasset, but it was voted down. Do you think it's a good idea to develop this type of facility? A link to a recent Portland Press Herald article about the issue is at: http://pressherald.maintoday.com/story.php?id=181404&ac=PHnws	5/20	8	

