

Mrs. Schmidt
 Atoms and Radioactivity (Lessons 11-16 in LBC Text)

CHEM 1- UNIT 2
 Fall 2015

Gold (A-Day) is Periods 1, 5 and Period 7 and B-Day I am not on campus

Date	What you should learn today	Class Activities	Handouts	Coursework (due next block)
A: 10/12 (M)	<ul style="list-style-type: none"> Unit 1 Alchemy Exam #1 Make-up Test is Th, 10/15 in testing center. 	<ul style="list-style-type: none"> Turn in packets Take the exam 	<ul style="list-style-type: none"> Unit 1 Alchemy Exam 	<ul style="list-style-type: none"> None Last day to turn in CuCycle lab Summary for a grade is 10/14/15
A: 10/14 (W)	<p>How are the smallest bits of matter described?</p> <ul style="list-style-type: none"> Describe the historical development of atomic theory Describe and draw an atomic model & explain evidence that supports it Describe the dynamic (changing) nature of scientific models 	<ul style="list-style-type: none"> Atomic Theory Timeline Puzzle Lesson 11 Atomic Pudding Notes on Atomic Models 	<ul style="list-style-type: none"> Unit 2 Calendar L11 Atomic Pudding handout 	<ul style="list-style-type: none"> Read pp. 53-56 DO: Ex. p. 57(#1-7 & 9)
A: 10/16 (F)	<p>How are the atoms of one element different from those of another element?</p> <ul style="list-style-type: none"> Define atomic number, mass of an atom and average atomic mass Describe the structure of an atom and draw a simple atomic model Use the periodic table to get data related to atomic structure and atomic mass 	<ul style="list-style-type: none"> Lesson 12 Atoms by the Numbers Notes/Discussion 	<ul style="list-style-type: none"> L12 Atoms by the numbers 	<ul style="list-style-type: none"> Read pp. 58-61 DO ex. p. 62 (#1-8)
A: 10/20 (T)	<ul style="list-style-type: none"> Build an atom with ipads 	<ul style="list-style-type: none"> Return Unit 1 Exam #1 PhET Build an Atom 	<ul style="list-style-type: none"> Build an Atom DUE End of Period 	<ul style="list-style-type: none"> Review for Atoms Quiz
A: 10/22 (Th)	<p>How can atoms of the same element be different?</p> <ul style="list-style-type: none"> Relate isotope atomic number and mass number to fundamental subatomic particles. Write chemical symbols and naming isotopes. 	<ul style="list-style-type: none"> Quiz Atoms (start of class) PhET simulation Isotopes (Library Macs last 45 min.) 	<ul style="list-style-type: none"> PhET Simulation Exploring Isotopes DUE End of Period 	<ul style="list-style-type: none"> Read pp. 63-65 DO ex. p. 66 (#1-4)
A: 10/26 (M)	<p>How can atoms of the same element be different?</p> <ul style="list-style-type: none"> Define isotope & interpret the symbol for a specific isotope Determine average atomic mass of an element based on the percent abundance of the isotopes in nature Predict the number of protons, neutrons, & electrons in the most abundant isotopes of an element 	<ul style="list-style-type: none"> Lesson 13 Subatomic Heavyweights 	<ul style="list-style-type: none"> L13 Subatomic Heavyweights 	<ul style="list-style-type: none"> DO ex. p. 66 (#5-6 & 9) For a "4" DO (#7 and 8)
A: 10/28 (W)	<p>What types of isotopes do the various elements have?</p> <ul style="list-style-type: none"> Interpret a graph of naturally occurring isotopes Describe the general nuclear composition of a stable nucleus Differentiate between a stable isotope and a radioactive isotope 	<ul style="list-style-type: none"> Quiz Isotopes (start of class) Lesson 14: Isotopia 	<ul style="list-style-type: none"> L14 Isotopia 	<ul style="list-style-type: none"> Read pp67-70 DO Ex. p. 70 (#1-3) and p. 71 (#4, 6, 7, 11, 13, 14)

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A: 10/30 (F)	<p>What are nuclear reactions?</p> <ul style="list-style-type: none"> Explain the different processes involved in nuclear changes and the conditions required for those processes Explain the connection between nuclear changes and changes in atomic identity 	<ul style="list-style-type: none"> Lesson 15 Nuclear Quest 	<ul style="list-style-type: none"> L15 Nuclear Quest 	<ul style="list-style-type: none"> Read p. 73-77 DO ex. p. 77 (#1-6) and p. 78 (#7, 8, 11)
A: 11/3 (T)	<p>How can radioactivity be detected in a cloud chamber?</p> <ul style="list-style-type: none"> Explain how the cloud chamber works Explain why trails are produced by particles 	<ul style="list-style-type: none"> Lab: Cloud Chambers Cloud Chambers Summary 	<ul style="list-style-type: none"> Lab Handout Cloud Chambers Lab Summary 	<ul style="list-style-type: none"> Review notes to begin preparing for the test Cloud Chambers Lab Summary (if not finished in class today)
A: 11/5 (Th)	<p>How are elements formed?</p> <ul style="list-style-type: none"> Explain how different elements are formed through nuclear reactions Write a balanced nuclear equation Describe and explain a chain reaction 	<ul style="list-style-type: none"> Lesson 16 Old Gold (maybe) 	<ul style="list-style-type: none"> L16 Old Gold 	<ul style="list-style-type: none"> Read p. 79-83 DO ex. p. 83 (#1-6)
A: 11/9 (M)	Review Day	<ul style="list-style-type: none"> Assemble Packet Unit 2 Begin Review Guide Unit 2 	<ul style="list-style-type: none"> Unit 2 Packet Organizer Unit 2 Study Guide 	<ul style="list-style-type: none"> Study for the test
A: 11/12 (Th)	Unit 2 Exam	<ul style="list-style-type: none"> Q&A and Collect Packets Take the exam 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> No new homework

Unit 2 Learning Targets: Atoms & Nuclear Chemistry (LBC Lessons 11-16):

- 2.a Atoms [ALT 2 AST 2.1]
 - Distinguish between the following atomic models: Democritus, Dalton, Thomson, and Rutherford. [Lesson 11]
 - Distinguish between electrons, protons, and neutrons; and relate particles to an element's atomic and mass numbers [Lesson 12]
- 2.b Isotopes [ALT 2 AST 2.4]
 - Compare and contrast isotopes of a given element [Lesson 13]
 - Solve for an element's atomic weight given isotopic masses and naturally occurring percent abundances [Lesson 13]
 - Predict the number of protons, neutrons, and electrons in the most abundant isotope of an atom, when given average atomic mass. [Lesson 13]
- 2.c Radioactivity [ALT 2 AST 2.5]
 - Define stable and unstable isotopes [Lesson 14]
 - Interpret a graph of naturally occurring isotopes and describe the band of stability
 - Describe the general nuclear composition of a stable nucleus
 - Distinguish between a stable isotope and a radioactive isotope
 - Distinguish between alpha, beta, and gamma decay. [Lesson 15]
 - Identify the symbol for alpha, beta, and gamma particles
 - Define half-life and use it in calculations
 - Nuclear Transmutations [Lesson 16]
 - Explain how different elements are formed through nuclear reactions
 - Write a balanced nuclear equation for alpha, beta, and gamma decay
 - Describe the mechanism for a nuclear chain reaction
 - Distinguish between fission and fusion