

Atomic Overview

Course Name: Physical Science, Earth Science, Biology	
Unit Title: Radiation in the Human Body	Day: 2/15
Relevant NC Standard Course of Study Goal(s): <ul style="list-style-type: none">● PSc.2.1.4 Interpret the data presented in the Bohr model diagrams and dot diagrams for atoms and ions of elements 1 through 18.<ul style="list-style-type: none">○ Describe the charge, relative mass, and the location of protons, electrons, and neutrons within an atom.○ Calculate the number of protons, neutrons, electrons, and mass number in neutral atoms and ions.○ Explain how the different mass numbers of isotopes contributes to the average atomic mass for a given element (conceptual, no calculations).○ Explain Bohr's model of the atom.	
Specific Lesson Objectives	
Students will understand: <ul style="list-style-type: none">● how electron-electron repulsion and electron-proton attraction contributes to the Bohr theory● how charge is neutralized in an atom● the relative locations of parts of an atom	
Students will know: <ul style="list-style-type: none">● the structure of the atom in accordance with the Bohr theory● the components of an element symbol	
Students will be able to: <ul style="list-style-type: none">● design a costume that represents an assigned neutral atom (isotopes for additional challenge) given number of electrons and protons and/or element name.	

Key Vocabulary/Formulae for this Lesson
<ul style="list-style-type: none">● radiation● convection● conduction● atom● element● half-life● isotope● thermal energy● proton● electron● atomic number● atomic mass● nucleus● neutron● valence

Materials
<ul style="list-style-type: none"> ● white board ● marker ● laptop ● projector ● flash cards ● textbooks ● relevant materials for Design An Atom Fashion Challenge
Technology Needs
<ul style="list-style-type: none"> ● teacher laptop ● projector ● Atomic Structure PowerPoint

LESSON ACTIVITIES			
Opening (Hook, Warm-Up, Anticipatory Set, Review, etc.)			
<p><i>Describe activity to elicit active involvement of students or refer to previous learning:</i> Students will create vocabulary flash cards (words: radiation, convection, conduction, atom, element, half-life, isotope, thermal energy, proton, electron) using their textbook as a resource (15 min)</p>			
Procedure: Include all sections that apply to this lesson; combine as necessary.			
Section	Time	What the Teacher will do:	What the Students will do:
Statement of Objective & Purpose	2 min	State the goals and agenda for the day	listen
Input, Modeling, & Check for Understanding	25 min	present Atomic Structure PowerPoint	listen, take notes in format according to teacher preference, answer when prompted, ask questions to clarify understanding
Guided Practice	45 min	monitor groups and rotations through Design An Atom Fashion Challenge	complete the Design an Atom Fashion Challenge
Closing/ Summary	3 min	assign exit ticket	complete exit ticket
Assessment of Student Learning			
<p><i>Students will have a vocabulary quiz on Day 5 and a Unit Test on the final day of the unit. The assessment for this day alone is evaluation of the assigned exit ticket and Build An Atom activity. Qualitative evaluation should be consistently carried out by the teacher in the form of leading questions and class discussions.</i></p>			