

Grade 10/11/12

Distance Learning Module 2: Week of: April 6 - April 10

Wave Particle Duality / Electromagnetic Spectrum

**Content Area: Honors Chemistry - Modified from [Unit 6 - Atomic Structure, Electron Configuration & Periodic Relationships](#)**

**Targeted Goals from Stage 1:**

**Content Knowledge:** Energy can be described on a microscopic level which describes the motion/behavior of the particles. The structure and interactions of matter are determined by electrical forces within and between atoms. Electrons can display energy changes as movements between energy levels. Wavelength, frequency, and amplitude are properties of a wave that determine its characteristics such as color and energy and are used in everyday scientific application.

**Vocabulary:** wave, wavelength, frequency, photon, quantum, atomic emission spectrum, electron configuration, principal energy level, sublevel, orbital, periods, groups, valence electrons, ionization energy, atomic radius, and electronegativity

**Skills:** Describe and calculate wavelength, frequency, and energy of a photon.

- Describe the energy change that happens during an absorption spectrum.
- Perform calculations of wavelength, frequency, or energy, given any one of the three variables.

**Expectation:**

<b>Description of Task (s):</b>	<b>Resources and Materials:</b>	<b>Daily Checks (Return to Google Classroom or snapshots from a cell phone at end of the week)</b>
Monday: <i>Students can set their own pacing, but make sure to meet the weekly expectations shown below:</i> <ul style="list-style-type: none"><li>● Watch Edpuzzle Video on EM Waves</li><li>● Watch Edpuzzle Video on Intro to Duality of Light</li><li>● Watch Edpuzzle Video on Wave-Particle Duality and the Photoelectric Effect</li></ul>	<u><a href="#">DL Objectives Module 2 Unit 6 Objectives Wave Particle Duality (Sections 7.1-7.4)</a></u>  Edpuzzle Video EM Waves Edpuzzle Video - Intro to Duality of Light Edpuzzle Video - Wave-Particle Duality and the Photoelectric Effect	Submit ONE or MORE of the following to Google Classroom each day: <ul style="list-style-type: none"><li><input type="checkbox"/> pictures of your notes from Edpuzzle Videos or Unit 6 Wave Particle Duality PowerPoint</li><li><input type="checkbox"/> answer embedded multiple choice while watching Edpuzzle videos</li><li><input type="checkbox"/> picture of or electronically submitted completed Summarizing Notes</li></ul>

Description of Task (s):	Resources and Materials:	Daily Checks (Return to Google Classroom or snapshots from a cell phone at end of the week)
<ul style="list-style-type: none"> <li>Complete Summarizing Notes document to organize new info</li> </ul>	<u>Summarizing Notes.docx</u>	document (You may need to consult PowerPoint to complete)
<p>Tuesday:</p> <ul style="list-style-type: none"> <li>Read through Unit 6 PowerPoint Slide Show &amp; take notes</li> <li>Complete Wkst 7-1 sample problems</li> <li>Electron Energy &amp; Light POGIL is an Optional Extension Activity - Completion is optional.</li> </ul>	<u>DL Module 2 Unit 6 Wave Particle Duality (Sections 7.1-7.4)</u>  <u>WKST 7-1 Wavelength Frequency and Energy</u>  <u>KEY 7-1 and 7-3.pdf</u>  <u>12 Electron Energy and Light POGIL (Optional Extension Activity)</u>	Submit ONE or MORE of the following to Google Classroom: <ul style="list-style-type: none"> <li><input type="checkbox"/> pictures of your notes from Edpuzzle Videos or Unit 6 Wave Particle Duality PowerPoint</li> <li><input type="checkbox"/> picture of or electronically submitted completed Wkst 7-1 on Wavelength, Frequency, &amp; Energy Calculations</li> <li><input type="checkbox"/> picture of completed Electron Energy &amp; Light POGIL - <b>OPTIONAL</b></li> </ul>
<p>Wednesday:</p> <ul style="list-style-type: none"> <li>Watch Edpuzzle Video on The Bohr Atom</li> <li>Watch Edpuzzle Video on Calculations involving the Rydberg equation &amp; Hydrogen</li> <li>Read through Unit 6 PowerPoint Slide Show &amp; take notes</li> </ul>	Edpuzzle - The Bohr Atom Edpuzzle - Calculations involving the Rydberg equation & Hydrogen <u>WKST 7-5 Electron Excitation Problems</u>  <u>KEY WKST 7-5 Excited Electrons.pdf</u>	Submit ONE or MORE of the following to Google Classroom: <ul style="list-style-type: none"> <li><input type="checkbox"/> pictures of your notes from Edpuzzle Videos or Unit 6 Wave Particle Duality PowerPoint</li> <li><input type="checkbox"/> picture of or electronically submitted completed Wkst 7-5 on Excited Electrons Calculations</li> </ul>
<p>Thursday:</p> <ul style="list-style-type: none"> <li>Watch Edpuzzle Video on Atomic Emission Spectrum</li> <li>Complete Virtual Flame Test Lab Simulation</li> <li>Read through Unit 6 PowerPoint Slide Show &amp; take notes</li> </ul>	Edpuzzle - Atomic Emission Spectra <u>DL Module 2 Mystical Fire Phenomenon &amp; Flame Test Virtual Lab</u>	Submit ONE or MORE of the following to Google Classroom: <ul style="list-style-type: none"> <li><input type="checkbox"/> Completed Virtual Flame Lab document</li> <li><input type="checkbox"/> pictures of your notes from Edpuzzle Video or Unit 6 Wave Particle Duality Powerpoint</li> </ul>

Description of Task (s):	Resources and Materials:	Daily Checks (Return to Google Classroom or snapshots from a cell phone at end of the week)
<p>School is closed for Good Friday. We have provided some optional activities for interested students. There is no obligation to complete any of these activities and students will not be behind their classmates if they do not complete them.</p> <p>Friday:</p> <ul style="list-style-type: none"> <li>● Complete Virtual Flame Lab Content Check</li> </ul>	<p><u>Resource posted in Google Classroom</u></p>	<p>Submit ONE or MORE of the following to Google Classroom:</p> <ul style="list-style-type: none"> <li>☐ picture of or electronically submitted Virtual Flame Lab Content Check</li> </ul>

**Week criteria for success** (attach student checklists or rubrics): By the end of this week, students should have:

- ☐ watched Edpuzzle videos and responded to embedded video questions where appropriate
- ☐ taken notes on Edpuzzle videos **or** Unit 6 Chapter 7\_Wave Particle Duality PowerPoint Slide Show (Sections 7.1-7.4)
- ☐ completed Summarizing Notes
- ☐ completed Wavelength, Frequency & Energy Practice (Wksht 7-1)
- ☐ **OPTIONAL** -- completed Electron Energy & Light POGIL
- ☐ completed Electron Excitation Problems (Wksht 7-5)
- ☐ completed Mystical Fire\_Flame Test Virtual Lab & responded to questions
- ☐ completed Virtual Flame Lab Content Check

**Supportive resources and tutorials for the week** (plans for re-teaching):

- online virtual Q and A help sessions (see Google Classroom for times and invite codes)
- read and re-read the textbook
- watch and rewatch Edpuzzle videos
- practice worksheets and corresponding answer keys in Google Classroom