

Lesson Title:	<b>Models of an Atom</b>
AP Objective(s):	<ul style="list-style-type: none"> <li>Explore and compare different models of an atom.</li> </ul>

AGENDA	KEY POINTS
1. PhET Simulation	Our understanding of an atom has evolved over time as technology has advanced. During the late 1800s and early 1900s, scientists were able to construct models of atoms that could be validated through experimentation.

Time	Learning Activity
60	<p>Students will complete the Models of an Atom PhET activity.</p> <p>In the first part of the lab, they will aim light rays at a box of hydrogen gas and make observations. They will see that photons are emitted from the gas. By changing the color or the light, they will explore the relationship between the wavelength and the amount of photons emitted.</p> <p>In the second part of the lab, students will compare the following models of the atom</p> <ul style="list-style-type: none"> <li>• Billiard ball</li> <li>• Plum pudding</li> <li>• Solar system</li> <li>• Bohr</li> <li>• De Broglie</li> <li>• Schrodinger</li> </ul> <p>They will record observations on the following</p> <ul style="list-style-type: none"> <li>• General characteristics (incl. proton and electron arrangement)</li> <li>• Undistributed behavior of electron (light off)</li> <li>• Description of what happens when a photon is absorbed/emitted</li> </ul> <p>Students will select 4 to study. At the end of class, teacher will lead a discussion on all of the models where students will share out their observations with the class.</p> <p><b>Guiding Questions</b></p> <ol style="list-style-type: none"> <li>1. What are the similarities and differences between the models?</li> <li>2. How could we describe the properties of a photon using physical variables?</li> <li>3. What is our current model of an atom?</li> </ol>