

Modern Physics Unit

Lesson 1: Duality and Models of the Atom

- Brief History
- Photoelectric Effect
- Bohr's Model of the Hydrogen Atom
 - Energy level diagrams
- Absorption and Emission Spectra
- Spectrum Tube Demos with spectroscope
- Duality and Models worksheet

Lab 1: Modern Physics Website Activity

Lesson 2: Check/review Duality and models worksheet and lab Quantum Theory part 1

- Bill Nye Theory of Relativity Video
- The electron-volt
- $E=mc^2$ lecture (mass-energy relationship)
- Uncertainty
- Mass-Energy worksheet

Lesson 3: Check/review Mass-Energy worksheet Quantum Theory part 2

- Energy of photons and planks constant
- deBroglie wavelength
- photon energy and deBroglie wavelength worksheet

Lab 2: Finish and review Quantum photon energy and deBroglie wavelength worksheet

Lesson 4: The Standard Model lecture

Four Fundamental Forces in nature

Classification of matter

Matter and Antimatter collisions (annihilation)

Photon-particle collisions

Standard Model and collisions worksheet

Lesson 5: Jeopardy Unit Review