



Unit 4
Wave Applications
High School
Physics

Unit Length and Description:

9 Instructional Weeks

Students will use mathematical representations to support a claim regarding the relationships among the frequency, wavelength and speed of waves traveling in various mediums. Students will also evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave or particle models and that for some situations one model is more useful than the other.

Science Standards:

- HS-PS4-1** Use mathematical representations to support a claim regarding the relationships among frequency, wavelength, and speed of waves traveling in various media.
- HS-PS4-3** Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.

**Enduring Understandings-
Unit Anchor Phenomenon:**

Gamma radiation can travel through walls yet light waves cannot.

**Essential Questions-
Reflective Summaries:**

- Apply mathematical representations to support a claim regarding the relationships among frequency, wavelength, and speed of waves traveling in various media.
- Describe the reasoning behind the idea that electromagnetic radiation can be represented by a wave model or a particle model.
- In certain situations, why are some models of electromagnetic radiation more useful than the others?