

Waves Before Mechanics

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Audience

- Algebra Based Introductory Physics with no Trigonometry Background

Motivation

- Acceleration – most difficult topic
- Decreased drop rate
- Related to hearing and seeing

Unit 1: Constant Motion

- Foundation for experimental expectations
- Straight line graphs
- Waves have constant velocity in a given medium

Unit 2: Waves

- Slinkys are fun!
- Improves qualitative observation skills
- Develops ability to describe the evidence to support wave properties

Unit 3: Sound

- Speed of Sound in Air investigation introduces inverse relationships
- Qualitative treatment of resonance incorporates teens love of music

Unit 4: Light (Geometric Optics)

- Plane Mirrors – Curved Mirrors
 - Ray diagram techniques encourage non-mathematical students
- Snell's Law – Qualitative or Quantitative
 - Know your audience!
- Simple Lenses
 - Ray diagram techniques encourage non-mathematical students

Unit 5: Electricity & Magnetism

- Electrostatics – Qualitative Treatment
- Circuits – Resistor
 - Coulomb’s Law included in Mechanics Unit as a type of force
- Magnetostatics Properties – Qualitative Treatment
- Reasoning for Evidence – Compare and Contrast

Mechanics

- Changing Motion and Forces
- Conservation Laws
- Gravitation – Coulomb's Law

Thank you for your attention

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