

By the end of this marking period we will have covered Chapters 14, 15, and 16.  
We have already had a test on chapter 13. We will have at least two more tests.  
The textbook covers a lot of extra material. You will want to know the essential material.

### **Here is a study guide for Chapters 14 and 15**

#### **Ch 14: Sound**

Key ideas: Longitudinal wave, Constructive and Destructive Interference, Beats, Doppler Effect  
Use of formulae:

Calculate the number of beats given two frequencies.

Doppler effect only qualitatively, not quantitatively.

Intensity (of point source) inversely proportional to distance<sup>2</sup>

Problems:

velocity = frequency \* wavelength

Period = 1/frequency

Link to numerical problems:

<https://ionaphysics.org/classroom/lessons/Sound%20problems.docx>

Link to multiple choice type questions

<https://ionaphysics.org/classroom/lessons/Ch14Review.pdf>

Which of these travel at the speed of sound? (infrared, ultraviolet, red, blue, green, radio, microwaves, sound, x-rays)?

#### **Ch 15: Light**

Key ideas: Transverse wave, visible light is only a small part, different colors are just different wavelengths, (Do NOT worry about polarization at this time, we will hit it later),

Problems:

Velocity = frequency \* wavelength

Which of these travel at the speed of light? (infrared, ultraviolet, red, blue, green, radio, microwaves, sound, x-rays)?

Problems:

Multiple Choice Review sheet for chapters 14 and 15 combined:

<https://ionaphysics.org/classroom/lessons/Ch14-15Rev.pdf>

Given a frequency, calculate the wavelength, or given the wavelength, calculate the frequency.

#### **Ch 16: Reflection**

Key ideas: Incident ray, reflected ray, angle of incidence, angle of reflection, law of reflection

### **The test on the above material is scheduled for Thursday, March 12.**

Before the end of the marking period

There will also be a lab, which will count as a 10-point test.

There will also be a smaller test involving a curved mirror and light rays for 10 points.