GREEN TEAM SCIENCE: Mrs. Ferdinand

Waves Unit Assessment Study Guide

Test Date: **Friday, May 18, 2018**

Vocabulary

You should know the definitions and applications of the following words:

1. Decibel
2. Longitudinal wave
3. Medium
4. Transverse wave
5. Amplitude
6. Frequency
7. Attenuation
8. Analog Signal
9. Digital Signal
10. Reflection
11. Refraction
12. Transmission
13. Visible Spectrum
14. Visible light
15. Ultraviolet light
16. Absorbed
17. Infrared radiation
18. Electromagnetic spectrum

Activity 1: It's a Noisy World

- Review Activity 1 and practice calculating the change in sound intensity
    - Example: how much will the sound intensity increase or decrease based on a given scenario

Activity 2: Making Sound Waves

- What is the frequency of a wave?
    - Frequency is related to _____.
- What is relationship between frequency and wave energy?

Activity 3: The Nature of Sound

- What is a longitudinal wave?
    - An example of a longitudinal wave is _____.
- How do the particles in a longitudinal wave move?
- Define **compression** and **rarefaction**.
- What is the amplitude of a wave?
    - Amplitude is related to _____.
- What is the relationship between wave amplitude and wave energy?
- Does a sound wave travel faster through more dense or less dense mediums?

Activity 5: Telephone Model

- What is an analog signal?
- What is a digital signal?
- Draw an analog signal vs. a digital signal.

Activity 6: Analog and Digital Technology

- What does attenuation mean?
- Draw a diagram of an attenuated signal.

Activity 7: Another Kind of Wave

- What is a transverse wave?
    - An example of a transverse wave is _____.
- How do the particles in a transverse wave move?
- How does a transverse wave differ from a longitudinal wave? (use the Venn diagram)
- How is a transverse wave the same as a longitudinal wave?
- Define wavelength.
- What is the relationship between frequency and wavelength?
- What is the relationship between amplitude and wavelength?
- How can we increase the energy in a wave?
- Give 3 examples of how light waves are different than sound waves.

Activity 8: Wave Reflection

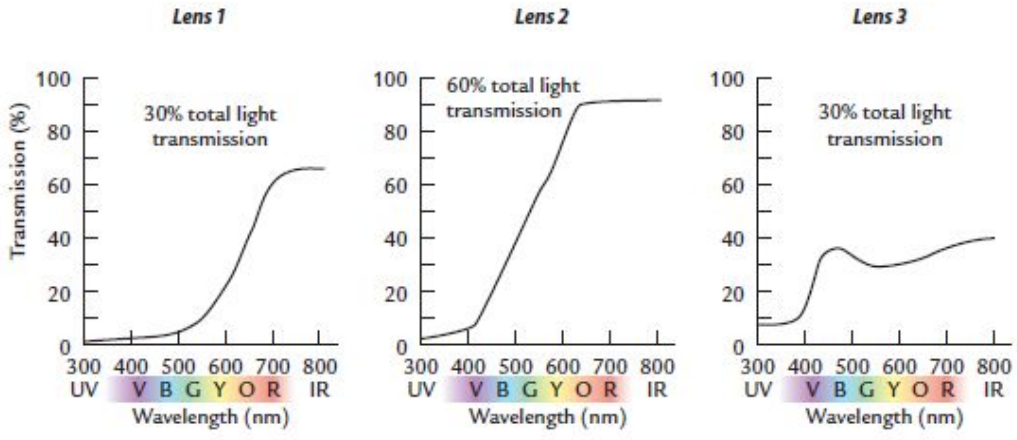
- What happens when a wave is reflected?
- What is the relationship between the angle of reflection and the angle of incidence?

Activity 9: Refraction of Light

- What does it mean that a light wave has been transmitted?
- What happens when a light wave is refracted?
- How does the speed of light change during refraction?

Activity 10: Comparing Colors

- What is the visible light spectrum?
- What colors form the visible light spectrum?
- What happens when white light shines on a film and blue light is transmitted through the film?
- Sunglasses block out white light and some other short-wavelength light that is harmful to the eyes. Looking at a transmission graph for 3 pairs of sunglasses below, how can you tell which pair of lens has the best protection for your eyes against high energy waves?



Activity 11: Selective Transmission

- What does it mean when light waves are absorbed?
- What part of sunlight is transmitted through selected films?

Activity 12: The Electromagnetic Spectrum

- What is the electromagnetic spectrum?
- Can all wavelengths on the electromagnetic spectrum be seen?
- Most of the energy that reaches the Earth is in what form?
- What is infrared light?
- What is ultraviolet light?

Activity 13: Where Does The Light Go

- What happens when direct sunlight hits a black object (example: t-shirt) as compared to a white object?
- Draw a diagram to support your answer above?
- What happens when you expose aluminium foil to direct sunlight?