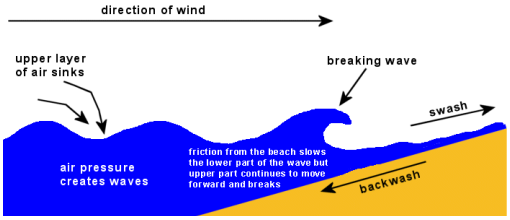
CK-12 Online Textbook – Chapter 6 – WAVES

Chapter 6 Outline – WAVES – Physical Science

- **6.1. Characteristics of Waves**
- **6.2. Measuring Waves**
- **6.3. Wave Interactions and Interference**



Chapter 6 / Section 1 (6.1) - CHARACTERISTICS OF WAVES

Directions: ***Read the section in the CK-12 Online Textbook called "Characteristics of Waves". Answer the following questions in COMPLETE SENTENCES. Type or write neatly!***

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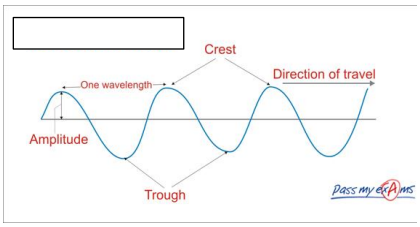
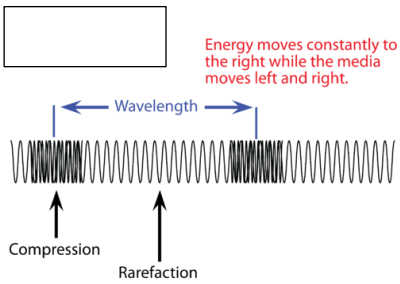
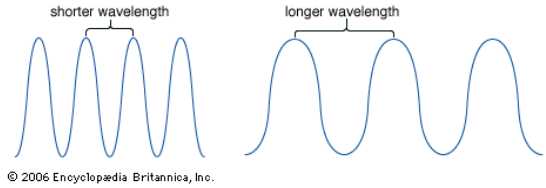


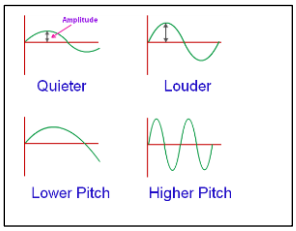


1. Give an example which illustrates the fact that *ocean waves transfer energy as they move toward the shore.*
2. What is the difference between a mechanical wave and an electromagnetic wave?
3. Give the scientific definition for mechanical wave.
4. Give 2 examples of a mechanical wave.
5. Give the scientific definition for medium.
6. Look at figure 1.1 (drop off water in a pond creating water waves) ---What is the medium?
7. Do the particles of matter (water) travel with the energy as the energy travels? Explain your answer.
8. Draw a transverse wave and label the crest and the trough.
9. On your drawing above, label the direction the medium is moving and the direction the energy is moving.
10. Give two examples of waves that are transverse.
11. Draw a longitudinal wave and label the compressions and rarefactions.
12. On your drawing above, label the direction the medium is moving and the direction the energy is moving.
13. Give two examples of waves that are longitudinal.
14. Draw a surface wave and label it.
15. On your drawing above, label the direction the medium is moving and the direction the energy is moving.
16. Give two examples of waves that are surface waves.
17. Describe how the particles of water move in deep ocean water compared to particles of water as a wave moves toward the shore.

MEASURING WAVES (6.2)

Directions: ***Read the section in the CK-12 Online Textbook called "Measuring Waves". Answer the following questions in COMPLETE SENTENCES. Type or write neatly!*** **http://www.ck12.org/user%3Aa2hlbgxpzxjad2nwc3mubmv0/book/NC-Science-6/section/6.2/**





1. What is a tsunami and what causes a tsunami?
2. How is a tsunami wave different from a surfing wave?
3. Draw a transverse wave and label the following: crest, trough, wavelength, amplitude.
4. Draw a longitudinal wave and label the following: compressions, rarefactions, wavelength.
5. If you beat on a drum with a lot of energy (as hard as you can) would the resulting wave have low or high amplitude?
6. Which wave has more energy? A wave with short wavelengths or one with longer wavelengths?
7. Draw two waves. Draw one with short wavelength and one with longer wavelength.
8. Draw a high frequency wave and a low frequency wave.
9. Frequency is measured in what unit?
10. Do waves travel faster through solids or gases? Explain your answer.

Wave Interactions and Interference (6.3)

Directions: ***Read the CK-12 Online Textbook section called "Wave Interactions and Interference". You can also find this topic by reading pages 645-647 in the RED TEXTBOOK. (The red textbook might be easier to understand but has no videos to supplement the concepts.)***

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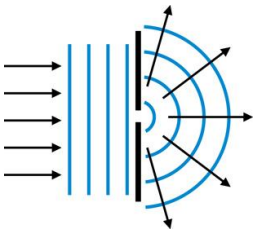

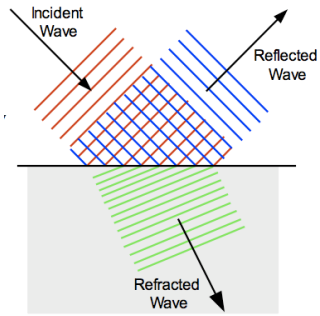

1. Define reflection.
2. Draw a picture which shows a wave being reflected.
3. Name 4 different types of waves that can be reflected.
4. What is a reflected sound wave called?
5. Define refraction.
6. Draw a picture which shows a wave being refracted.
7. Give two reasons why a wave will bend when it enters a new medium.
8. Define diffraction.
9. Draw a picture which illustrates diffraction.
10. What is wave interference?
11. When waves interfere with each other, what would cause the sound to sound louder?
12. What would cause the sound to sound softer?