**Mechanical Waves Online Tutorial**

***Instructions****: Follow the links below, read the text on the page, follow the instructions given and answer the questions as directed below in your journal.* ***Formulate thoughtful responses*** *after careful study of the entire website lesson , rather than just trying to “look up” an answer.*

**Part I – The Nature of Waves**

1. Click on 🡪 [Waves](http://www.physicsclassroom.com/class/waves) 🡪 Lesson 1: The Nature of a Wave
2. [**Lesson 1a**](http://www.physicsclassroom.com/class/waves/Lesson-1/Waves-and-Wavelike-Motion)**: Waves and Wavelike Motion**
   1. Take notes in your journal. Make sure to include the following:
      1. Make a transverse wave chart and label the crests and troughs
      2. Write down the definitions of crest and trough.
3. [**Lesson 1b**](http://www.physicsclassroom.com/class/waves/Lesson-1/What-is-a-Wave)**: What is a Wave?**
   1. Take notes in your journal. Make sure to include the following:
      1. Summarize each section in 1-2 sentences.
      2. Write down the definitions to all of the words in **bold red** text.
   2. Answer the 5 **Check Your Understanding** questions.
4. [**Lesson 1c**](http://www.physicsclassroom.com/class/waves/Lesson-1/Categories-of-Waves)**: Categories of Waves**
   1. Explain IN YOUR OWN WORDS the three types of waves discussed in this section.
   2. What is the difference between electromagnetic waves and mechanical waves (we’ll go into more details when we talk about light).
   3. Check out the **Investigate!** section; write down some information on the most recent earthquakes.
   4. Answer the 8 **Check Your Understanding** questions.

**Part II – Properties of a Wave**

1. Click on 🡪 [Waves](http://www.physicsclassroom.com/class/waves) 🡪 Lesson 2: Properties of a Wave
2. [**Lesson 2a**](http://www.physicsclassroom.com/class/waves/Lesson-2/The-Anatomy-of-a-Wave)**: Anatomy of a Wave**
   1. Take notes in your journal. Make sure to include the following:
      1. Copy the transverse chart and label the different parts of the wave
      2. Write down the definitions to all of the words in **bold red** text.
   2. Answer the 3 **Check Your Understanding** questions.
3. [**Lesson 2b**](http://www.physicsclassroom.com/class/waves/Lesson-2/Frequency-and-Period-of-a-Wave)**: Frequency and Period**
   1. Write down the definition and units for frequency and period.
   2. Write down the 2 equations (using variables) at the bottom of the page.
   3. Complete the **Investigate!** section
   4. Choose 5 **Check Your Understanding** questions to answer in your journal.
4. [**Lesson 2c**](http://www.physicsclassroom.com/class/waves/Lesson-2/Energy-Transport-and-the-Amplitude-of-a-Wave)**: Energy Transport and Amplitude of a Wave**
   1. Explain IN YOUR OWN WORDS how a wave transports energy.
   2. Discuss the relationship between amplitude and energy. Write down the equation for this relationship.
   3. Answer the 3 **Check Your Understanding** questions.
5. [**Lesson 2d**](http://www.physicsclassroom.com/class/waves/Lesson-2/The-Speed-of-a-Wave)**: The Speed of a Wave**
   1. Write down the definition, units, and equation for wave speed.
   2. Discuss what variables affect the speed of a wave.
   3. Choose 6 **Check Your Understanding** questions.
6. [**Lesson 2e**](http://www.physicsclassroom.com/class/waves/Lesson-2/The-Wave-Equation)**: The Wave Equation**
   1. Take notes in your journal while reading this page.
   2. Sketch and explain the 5 “snapshots” on the right side of the screen.
   3. Write the wave equation and explain what it means.
   4. Complete the three-part activity with Stan and Anna. Check your answers!
   5. Answer the 6 **Check Your Understanding** questions.