

## Waves Tic-Tac-Toe

1. Question & Answer	4. Media	7. Sentences & Puzzle
2. Compare	5. Acrostic Poem	8. Graphic Organizer
3. Imagine	6. Draw & Explain	9. Design a Demo

- Question & Answer** – Create 10 possible test questions & 4 legitimate answer choices, one correct and three that are not correct but are related in some way to this chapter. Provide an answer key.
- Compare** – Give 3 characteristics that clearly distinguish the two types of mechanical waves discussed in this chapter. Your comparison should be two parts: (a) written neatly and in complete sentences (b) graphic/visual for anyone to understand – including labels to aid in explanation. **In addition**, compare mechanical waves from electromagnetic waves – define, explain and give an example of each.
- Imagine** – Imagine you are in the following situations, compare what you'd experience and why. Include scientific information in your writing, focusing IF APPLICABLE on: energy, phases, density, waves, medium, etc.
  - Snorkeling at the Great Barrier Reef vs. Diving deep in a shark cage in the Pacific
  - Sitting in your lounge chair pool side vs. submerged under water in your pool
- Media** – You are the monarch of a small island in the Pacific. You have just learned that your island sits atop of the Ring of Fire (a volatile place of Earth, created by volcanic activity and earthquakes). You have heard from a “reliable source” that a tsunami may hit in the next five years ... just enough time for you to prepare. What billboard would you create to remind all of this looming doom **and** how would your island prepare for it. Keep in mind, your islanders are sweet, hard-working people, but are also simple. (Items to keep in mind – constant energy, waves, wave-fronts, path/direction of destruction, energy conversions, destructive and constructive interference, etc.)
- Acrostic Poem** – Create an acrostic poem about the electromagnetic spectrum using the term “electromagnetic”. Use the characteristics in your text and in the chart on p. 368 for your poem.
- Draw & Explain** – Looking at the pictures on p. 374-376, explain and create each of the following: reflection, diffraction, and refraction. Use events that occur in your own life, from the kitchen to the car, to **visually** explain these terms. **And**, in complete sentences explain what is happening in each situation. **DO NOT** copy the explanations from the book and **DO NOT** copy the diagrams or figures. Be creative!
- Sentences & Puzzle** – Pick 5 vocabulary terms from Chapter 11 and use them in a sentence. **Do not use this sentence to tell the definition** – I need to know that you understand the context of the term. Then, choose 10 different vocabulary terms and create a crossword puzzle. You must provide an answer key to your crossword puzzle.
- Graphic Organizer** – Create a graphic organizer to help you better understand the differences between both types of mechanical wave. Include: major parts of each, relationship between frequency and period. **Also include** a comparison of interference and standing waves. The more information you include, the better. You will turn in a blank graphic organizer **AND** one you've filled in with the proper information.
- Design a Demo** – Design a demonstration that effectively explains the Doppler Effect. You will have to demo this for the entire class. You are responsible for taking all of your materials home on the same day. **If you leave your materials at school, you will receive a zero on this portion of the assignment.**

### Grading:

- You must choose three activities (horizontally, vertically, or diagonally across the board)
- You must date and sign indicating which of these activities you choose to do and have it signed by me. No changes can be made after Day 2 of the project.
- You will have three days in class to complete these activities, any extra work you choose to do should be done outside of class.
- The grade for each activity is based on:
  - accuracy – 5 points
  - effort regarding facts – (**subjective**) – 5 points
  - effort regarding presentation (**subjective**) – 5 points
  - following instructions – 5 points

Each activity is 20 points – a total of 60 points. Fifty (50%) is subjective and requires you to do your best. If you have any questions, you must tell me **NO LATER** than the first full day of activities.

**Your finished project MUST be turned in to me in a FOLDER. If you do not have a folder, you will lose a total of 10 points on your overall project grade.**