





Intervention 8.2.4-

WAVES WEBQUEST

Directions- Go to dixiemiddlescience.weebly.com and follow the links under today's date.

TASK 1-

https://utah.pbslearningmedia.org/asset/lps07_int_waves/?utm_source=teachersdomain_redirect/asset/lps07_int_waves/utm_medium=teachersdomain/asset/lps07_int_waves/utm_campaign=td_redirects

1. Introduction- Describe the motion of the wave of the people and the string.
2. What type of wave is being demonstrated in these examples?
3. Demonstration- Click on the arrows going up and down:  What type of wave is this?
4. Demonstration- Click on the arrows going left and right:  What type of wave is this?
5. Water Waves- Watch the water waves animation and then explain the motion of a water wave.

TASK 2- <https://www.acs.psu.edu/drussell/Demos/waves/wavemotion.html>

6. What are mechanical waves?
7. How do transverse waves differ from longitudinal waves?
8. Draw a transverse wave.
9. Draw a longitudinal wave.

TASK 3- <http://zonalandeducation.com/mstm/physics/waves/partsOfAWave/waveParts.htm>

10. Sketch a diagram of a **transverse** wave. **Label** the crest, trough, positive amplitude, negative amplitude, and wavelength.
11. What is frequency?
12. On the website, try adjusting the frequency on the animation. Then explain how frequency and wavelength are related.

TASK 4-

http://www.classzone.com/books/ml_science_share/vis_sim/wslm05_pg18_graph/wslm05_pg18_graph.html

13. Experiment with the wave's frequency and amplitude. Make the following combinations and explain what the waves look like with each combination.

- a. Low Frequency/Low Amplitude:
- b. Low Frequency/High Amplitude:
- c. High Frequency/High Amplitude:
- d. High Frequency/Low Amplitude:

TASK 5- https://phet.colorado.edu/sims/html/wave-on-a-string/latest/wave-on-a-string_en.html

14. Set the wave to "oscillate" and draw the wave that you have created.

15. Increase the amplitude of the wave to .80 cm and press "restart", what changed about the wave?

16. Decrease the amplitude of the wave to .20 cm and press "restart", what changed about the wave?

17. Does the .80 cm wave or the .20 cm wave appear to have more energy?

TASK 6-

http://earthguide.ucsd.edu/eoc/special_topics/teach/sp_climate_change/p_emspectrum_interactive.html

Slide the green arrow to each type of electromagnetic wavelength and answer the questions below.

18. Which wavelength is used to cook food?

19. Which wavelength is used to detect Supernova?

20. Which wavelength is used in night vision photography?

21. Which wavelength is used in nuclear medicine?

22. Which wavelength is used to detect sea ice in satellites?

23. Which wavelength is used at the dentist office?

24. Which wavelength has the LEAST energy?

25. Which wavelength has the MOST energy?