Wave Energy –
Sound and Light

What did the ocean say to the beach?

Nothing – it just waved

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During this unit, we will address the following Maine Learning Results:
D31. Use examples of energy transformations from one form to another to explain that energy cannot be created or destroyed.
D4a. Describe the similarities and differences in the motion of sound vibrations, earthquakes, and light waves.

…and we will take a stab at these new Next Generation Science Standards:
MS-PS4-1. Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.
MS-PS4-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.
MS-PS4-3. Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.
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Key Terms:

Wavelength	Amplitude	Frequency	Crest
Trough	Wave	Medium	Transverse wave
Longitudinal wave	Radio wave	Microwave	Infrared wave
Ultraviolet wave	X- ray	Gamma ray	Vibration
Propagation	Digital	Analog	Electromagnetic spectrum

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By the end of this unit, you will need to…
- Give examples of energy that travels in waves and energy that doesn't travel in waves, and explain how you know
- Describe, and provide examples of, one of the types of waves in the electromagnetic spectrum
- Describe transverse and longitudinal waves
- Explain how changing amplitude or frequency of a sound wave changes a sound we hear
- Explain/diagram how human eyes work with light waves to produce sight
- Compare and contrast light waves and sound waves
- Describe the difference between digital and analog signals