Waves: Day 5 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Core: \_\_\_\_\_ Date: Monday, March 27th

1. The matter in a transverse wave travels: A) In circles B) Back & Forth C) Up & Down

Learning Check

1. Sound is an example of which type of wave? A) Longitudinal B) Transverse C) EM
2. T/F: S Waves are longitudinal: A) True B) False

Transverse Wave \* Medium \*

Electromagnetic Wave \* Radio Wave

Infra-red \* Microwaves \* Vacuum



Vocabulary

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ this is the absence of matter; space.

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ these waves don’t require a medium to travel. An example is visible light.

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ these waves are caused by thermal energy and are invisible to us unless we use special equipment.

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ these waves move up and down.

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the matter a wave travels through

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ these are on the EM spectrum and have the longest wavelength.

7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ these are just radio waves with very short wavelengths.

\* NOTES \*

* All electromagnetic waves have the following properties:
	+ They can travel through a \_\_\_\_\_\_\_\_\_\_\_.
	+ They all travel at the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a vacuum: 3.00 x 108 m/s. (EM waves don’t travel this fast in other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. )
	+ They are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ waves.
	+ They are produced when \_\_\_\_\_\_\_\_\_\_\_\_ or electrons lose energy.
* Radio Waves:
	+ Have the longest \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They are used to carry radio and \_\_\_\_\_\_\_\_\_ signals.
	+ Waves with wavelengths larger than 10m can be transmitted around the earth by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ off of the upper \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (the ionosphere).
	+ Wavelengths shorter than 10m pass through the ionosphere. Since they cannot be reflected off of the atmosphere, these “\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_” need to travel to several \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that are all in “line of sight” of each other.
	+ Radio waves are not dangerous, as they carry very small amounts of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	+ Uses [give 2 examples listed]: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Microwaves:
	+ Microwaves are just very short wavelength \_\_\_\_\_\_\_\_\_\_\_\_\_\_ waves.
	+ They are absorbed by some substances such as \_\_\_\_\_\_\_\_\_\_ (this is why your food warms up in a microwave oven). They pass through glass, china, paper and plastic but are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by metals.
	+ Mobile phones are portable \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ transmitters and receivers that communicate with the nearest base station.
	+ As microwaves pass through the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, they can be used to send signals up to a satellite which then relays them around the world.
	+ Uses [give 2 examples listed]: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Activities!

A) [I need a review.] Come up to the board and watch parts 1, 7 & 8. Then, on the back of this paper, draw the wave along with an example of how the wave is used.

B) [I’m ready to practice.] Grab the coloring sheet from the front desk. In the wavestown picture, circle and label all examples of radio & microwaves. Then, color the picture.

C) [I’m ready for a challenge.] In a 5-frame comic strip, explain either how music is transferred to a radio from a radio station OR how your friend’s voice is transmitted to your cell phone.