Waves: Day 7 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Core: \_\_\_\_\_\_\_ Date: Wednesday, March 29th

3. All matter emits this type of radiation:

a) Infra-red

b) Ultra Violet

c) Visible Light

2. This color has the shortest wavelength:

a) red

b) green

c) violet

1. These waves are dangerous to us because they have high energy.

a) UV

b) Longitudinal

c) Infra-red

Vocabulary

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: the amount of matter packed into a given space, or volume.

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: these waves, even though can be harmful to skin cells, are used to check for broken bones.

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: these waves have the smallest wavelength and the most energy.

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_: the distance between crests in a transverse wave, or between compressions of a longitudinal wave.

X-rays \* Gamma Rays \* Wavelength \* Density

* X-rays:
  + X-rays carry a lot of \_\_\_\_\_\_\_\_\_\_\_\_; enough to strip the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from atoms. DNA can be damaged by exposure to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and large doses can even kill cells. You may be able to protect yourself from UV with sun tan cream, but for X-rays you’ll need a sheet of \_\_\_\_\_\_\_\_\_\_\_\_\_\_!
  + As a rule the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the material, the more it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ X-rays. So if we shine X-rays at a person they pass through the flesh but are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by the bones. If we place a photographic plate on the other side of the person, the bones “cast a \_\_\_\_\_\_\_\_\_\_\_\_” and the shape of the skeleton can be seen.
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_ are used to kill cancer cells. To avoid damaging the healthy tissue around the tumor, \_\_\_\_\_\_\_\_\_\_\_\_\_\_ beams are passed through at different \_\_\_\_\_\_\_\_\_\_\_\_, crossing at the tumor, giving it a much \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ dose.
  + Uses [list at least 2]: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Gamma Rays
  + Gamma rays have the smallest \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (about the size of an \_\_\_\_\_\_\_\_\_\_\_\_\_\_’s nucleus!) and the highest \_\_\_\_\_\_\_\_\_\_\_\_\_\_. High levels of radiations can only be stopped by many centimeters of \_\_\_\_\_\_\_\_\_\_\_\_\_, or many meters of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ can kill living cells, a fact which medicine uses to its advantage, using \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ to kill cancerous cells.
  + As gamma rays are lethal to all living cells, they can be used to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ objects.
  + Controversially, some \_\_\_\_\_\_\_\_\_\_\_\_\_\_, especially those that spoil easily, are irradiated with \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_. This process increases the shelf life of the food by killing any fungal spores and bacteria.
  + Uses [list at least 2]: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| A: [I need to review.] Watch the BrainPop video “Eyes” and take the quiz. | B. [I’m ready to practice.] Continue working on the Wavestown coloring sheet. | C. [I’m ready for a challenge.] Write a rap or poem that explains the different EM waves and their uses. |