Item #: _____ Electromagnetic Spectrum (Radiation) Name: _____

Procedure:

1) Log-in to the Chromebook/Computer and go to the internet.
2) Under each section, complete the activities and answer the questions.

Introduction to the Electromagnetic Spectrum

1) Google Search: NASA Video Tour Electromagnetic Spectrum
2) Click the first link
3) Watch the 5-minute video: Introduction to Electromagnetic Spectrum
   **TURN ON THE CLOSED CAPTIONS---IT HELPS!!! ☺ [CC]

1. Explain/describe (in your own words) the electromagnetic spectrum.

2. Why can we ONLY see visible light and not radio waves, microwaves, etc....?

3. How do we see color?

The Electromagnetic Spectrum

1) Google Search: What is the Electromagnetic Spectrum? Using the "video" search
2) Click on the first link (video time should be 2:13) Again, turn on CLOSED CAPTIONS!
3) Answer the following questions using this video.

Radio Waves

4. What has the longest wavelength and lowest frequency in the spectrum?

5. How long can radio waves be?

Microwaves

6. How do microwaves differ than radio waves (explain in terms of wavelength/frequency).

7. List three things that use microwaves:

   a.
   b.
   c.

Infrared

8. Name three things that produce infrared light:
   a.
   b.
   c.
9. How do WE notice infrared radiation?

Visible Light

10. Describe the size of visible light on the spectrum (large part? Small? Medium? Etc....)

11. List the colors of visible light in order from longest wavelength to smallest wavelength.

Ultraviolet Light

12. What do humans receive when exposed to UV light?

13. What happens if your skin receives too much UV light?

X-Rays

14. What can x-rays pass through?

15. What can x-rays NOT pass through?

16. List two ways x-rays are used.

Gamma Rays

17. How small are gamma ray wavelengths?

**FYI about Gamma Rays---these are the most dangerous. Gamma Rays can cause cancer cells, however, they also can destroy them when used correctly/specifically.

BrainPop

1. Google search: BrainPop Electromagnetic Spectrum
2. Watch video by clicking on the "Play" button. Username: hrms; password: patriot

Using your knowledge now about the EM (Electromagnetic Spectrum), complete the matching below:

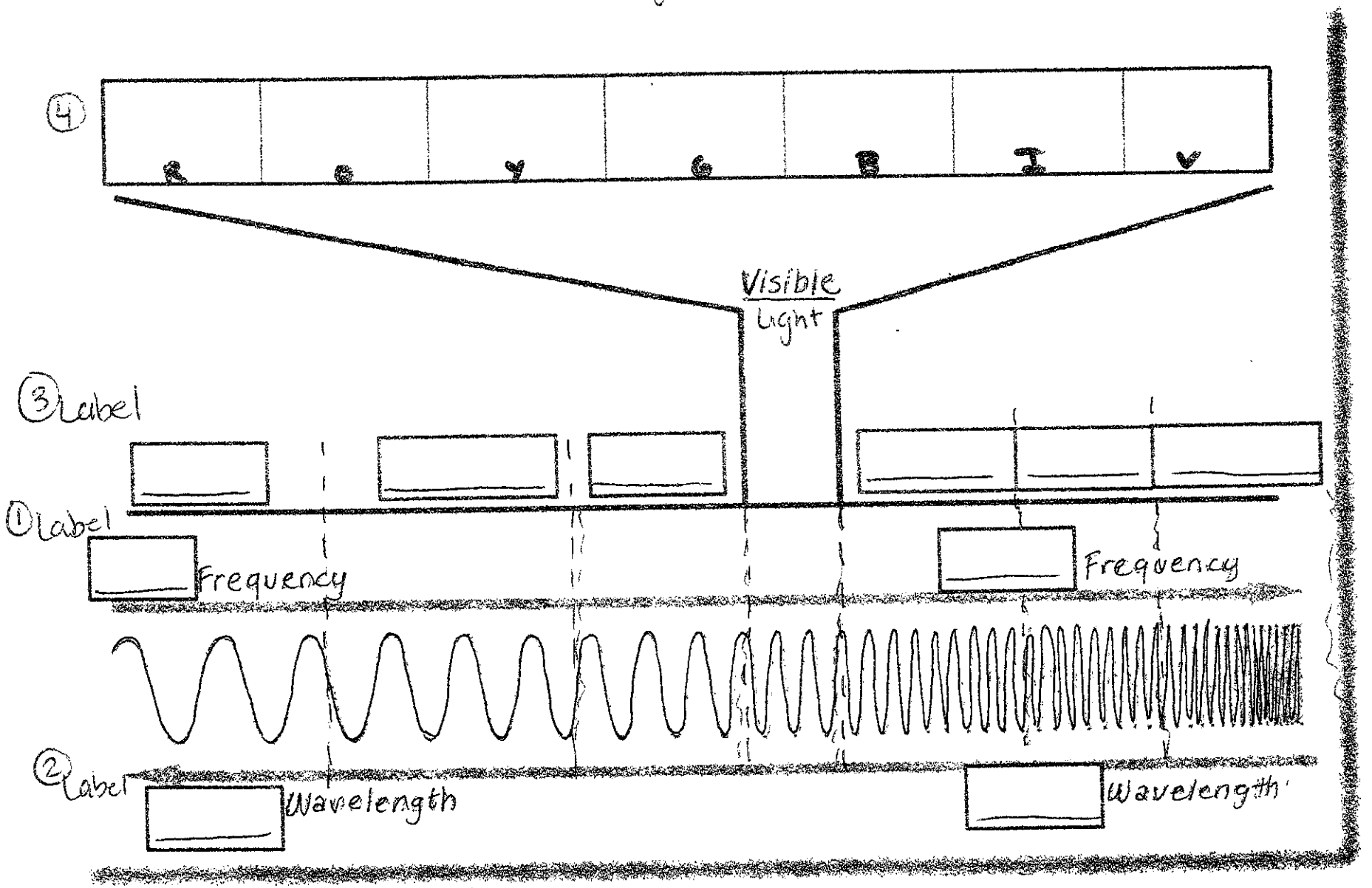
_____ Radio Waves	A. Helps you change the channels on your TV
_____ Microwaves	B. Found in space and nuclear explosions
_____ Infrared	C. Used to see your bones
_____ Visible Light	D. Used to pop popcorn
_____ Ultraviolet (UV)	E. Sometimes it behaves like a wave, sometimes like particles
_____ X-Rays	F. Used to transmit radio and television signals as well as cell phone signals
_____ Gamma Rays	G. Contains the colors of the rainbow
_____ Radiation	H. Occurs naturally in sunlight; most of it is blocked by ozone layer

Now complete the back: DO IN ORDER - Like uh, how you follow a procedure!

1) **Label high/low frequency of the EM wave.**
2) **Label short/long wavelength of the EM wave.**
3) **Using the EM wave that you just labeled, label the EM spectrum with the correct types of waves (visible light has been done for you).**
4) **Color in the visible light section accordingly.**

Finished? Raise your hand and show your teacher then complete the "Wavestown" sheet.

Electromagnetic Spectrum



Saying to help remember order: _____