**Chapter 12 & 13 Wave Orientation**

*Complete the following in your notebook.*
*There will be two grades…a summative notebook entry score and a summative open-notebook quiz score*

Electromagnetic Wave Orientation (Chapter 12)

Use complete sentences or rewrite the questions.

From page 354:

1. List the basic characteristics of **sound** and **water** waves.
2. List the basic characteristics of **electromagnetic** waves.
3. What is the main **difference** between the **sound/water** waves and **electromagnetic** waves?

From page 355 and the top of 356:

Summarize the relationship between **electric** and **magnetic fields**. Include at least three major points

From page 356

Explain how **electromagnetic waves** are made.

From pages 357-358:

1. Define **radiant** energy
2. Identify the **speed** waves travel
3. What is **frequency**?

From pages 360-365:

1. Redraw Figure 8 with labels.
2. Define/describe **radio** waves
3. Define/describe **infrared** waves.
4. Define/describe **visible light**.
5. Define/describe ultraviolet waves.
6. Define/describe **X rays**
7. Define/describe **gamma rays**

Light Orientation (Chapter 13)

From page 384:

1. In general – what is the difference between ***absorb, reflect***, and ***transmi***t?
2. Compare the meanings of ***opaque***, ***transparent***, and ***translucent***
3. Give an example of each type of material

From page 385-6:

1. Compare ***regular*** and ***diffuse reflection***
2. Draw an example of each type of reflection. Be sure to identify the material that would cause that type of reflection.

From pages 386-388

1. Carefully describe the conditions which cause ***refraction***.
2. How is white light affected by refraction?
3. Specifically, what is the relationship between refraction and wavelength?
4. Draw **Figure 6** and **Figure 7 (USE COLORS!)** Indicate which color has the longest wavelength and which has the shortest wavelength.

From 389-390

What affect does a colored filter have on what we see?

From 392-393

1. Draw Figure 13 and Figure 14 side by side (use colors, that's the whole point).
2. Compare/contrast what the two figures show us. Use complete sentences.