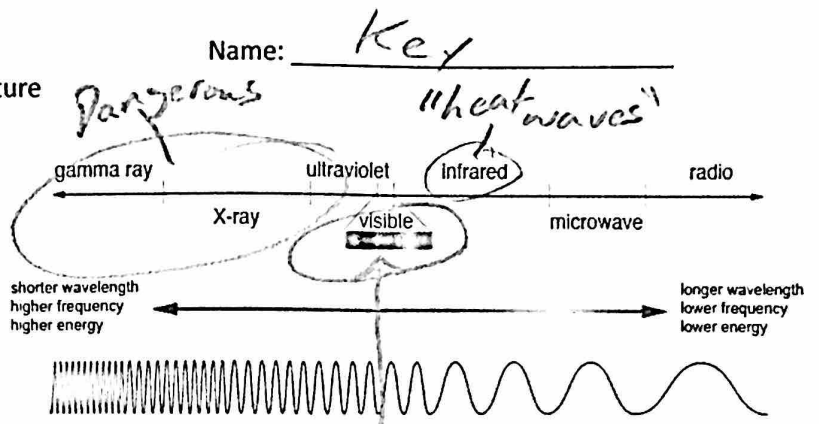


Name: Key

1. What is the general name that includes gamma rays, x-rays, ultraviolet, visible light, infrared, microwaves, and radio waves?

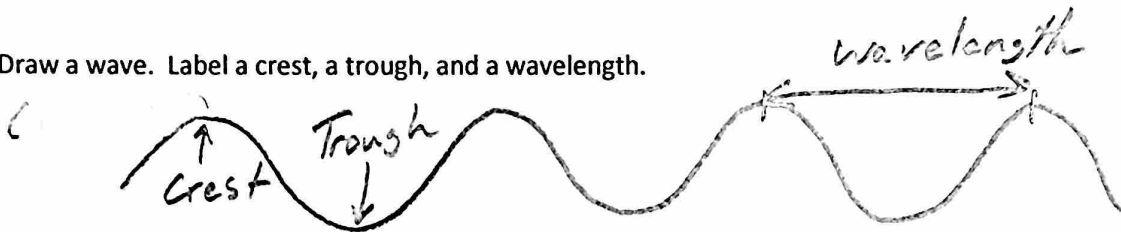
Electromagnetic Radiation



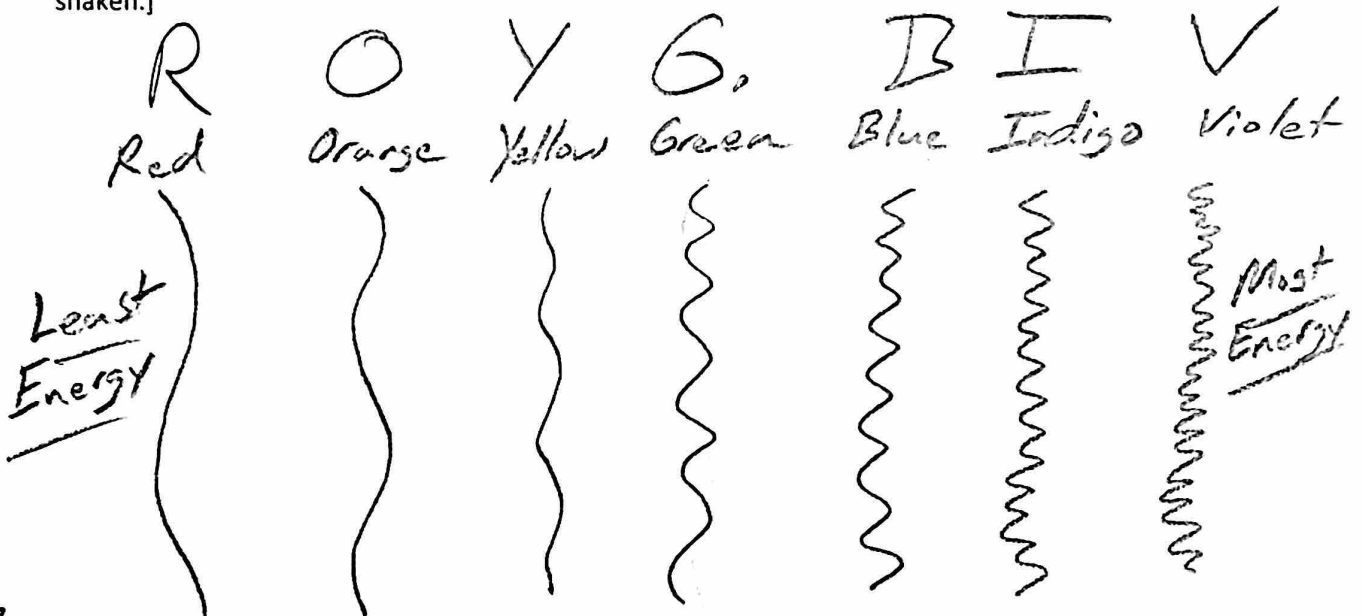
2. Stars give off many of the waves in the diagram. Which of those waves can our eyes see?

Visible Light

3. Draw a wave. Label a crest, a trough, and a wavelength.



4. a. List the colors of the visible spectrum from longest wavelength to shortest wavelength (hint: there's a good mnemonic for this. And a catchy song!)
 b. Draw waves representing those colors.
 c. Label the colors that have the most and least energy [Hint: think of the waves as ropes that are being shaken.]



5. Rank these star colors from hottest to coolest (Hint: think about wavelengths). Orange, Red, Yellow, Blue, White

Hottest \Rightarrow Blue, ^{White}, Yellow, Orange, Red \Leftarrow Coollest

6. What do you see if you mix a paints of all different colors together? Why does this happen?

A dark brownish color. Each paint absorbs some colors of light. More paints will absorb more colors and reflect less light.

7. What do you see if you mix light of all different colors together? Why does this happen?

White. Adding more colors of light makes things brighter. All of the colors, mixed together, make white.

8. White isn't exactly a color. What is it?

All wavelengths ^(colors) of light, mixed together

9. Black isn't exactly a color. What is it?

Black is the absence of light ^(no colors or wavelengths)

10. The hottest stars are Blue and the coolest stars are Red. But medium temperature stars aren't green. Why not?

A medium temperature star is "in the middle of the rainbow," so it gives off all colors; not just green. All colors mixed together makes white, not green

11. a. Which stars are the hottest, larger stars or smaller stars?

b. Why? Larger stars have strong gravity. Gravity compresses them, heating them up.

c. What color are the largest stars? What about the smallest stars?

Blue

Red

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