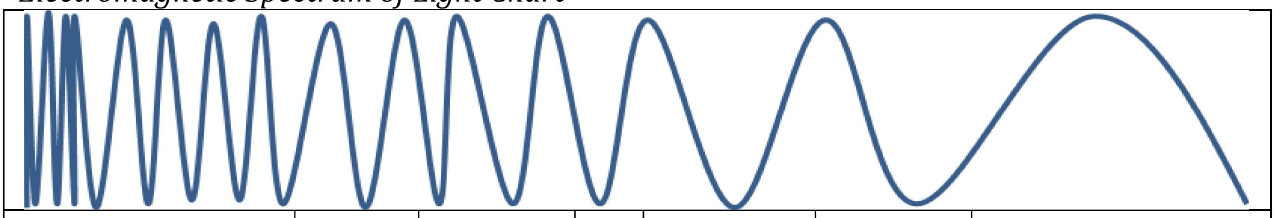
All objects in the Universe give off energy in some form of light. Let's first consider the spectrum of different forms of light, by circling the correct relative values in the table below.

Electromagnetic Spectrum of Light Chart



Gamma rays		X-rays	Ultra Violet	Visible	Infrared	Micro-waves	Radio Waves	
1.	*Circle one:* Shorter or Longer	⇦ Wavelength ⇨						*Circle one:* Shorter or Longer
2.	Higher or Lower	⇦ Frequency ⇨						Higher or Lower
3.	Higher or Lower	⇦ Energy ⇨						Higher or Lower
4.	Bigger or Smaller	⇦ Changes in Electron State ⇨						Bigger or Smaller

Your brain might hiccup when talking about light because it seems like there are two different kinds of energy being emitted: rays of photon particles and waves of light. They are both the same thing, even though astronomers use different terms to talk about different parts of the spectrum. They are all forms of electromagnetic radiation. Don't let the words cause you confusion.

One mental cartoon about how light is emitted from an atom has to do with electrons releasing energy as light when they naturally move from higher-than normal outer positions around the center to closer, lower energy positions.

5. Compared to a small change in an electron's state, a large change results in emission at:

(*Circle one*) higher energy lower energy no difference

6. Compared to a small change in an electron's state, a large change results in emission at:

(*Circle one*) longer wavelength shorter wavelength no difference

7. Compared to a small change in an electron's state, a large change results in emission at:

(*Circle one*) higher frequency lower frequency no difference

8. Compared to a small change in an electron's state, a large change results in emission at:

(*Circle one*) higher speeds lower speeds no difference