

Name: \_\_\_\_\_ Period: \_\_\_\_ Date Due: \_\_\_\_\_ EN \_\_\_\_

## What causes Light?

Answer all questions in complete sentences on a separate sheet of lined paper. If you need help answering questions refer to your notes and to your textbook.

1. What is a photon?
2. Why do ultraviolet photons produce sunburns but visible photons do not?
3. What color in the visible spectrum is the highest energy light and what color is the lowest energy light?
4. What is emitted when one of an atom's electrons jumps from a higher energy level to a lower energy level?
5. Draw a picture that shows this.
6. How does one atom produce light of different colors? This is the same as asking how does atom produce photons of different energies.
7. The book says that in this model, an electron can only have discrete amounts of energy. Look up and write the dictionary definition of "discrete".
8. In class we did an activity where we looked through spectrometers at the light from different elements and drew their emissions spectra on a worksheet. Find the worksheet to remind yourself of the activity and what we did. Each element makes it's own unique emission spectrum. Describe an emission spectrum using the work discrete in your answer.
9. Why do atoms produce discrete spectra of specific colors rather than a continuous spectra of all the colors in the rainbow?
10. What is a spectrometer?