

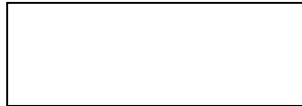
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Spectrum Activity Worksheet

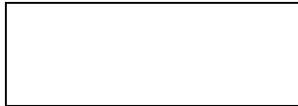
An emission spectrum is seen as bands of light caused when light is refracted through a prism or diffracted through a diffraction grating. Chemists are able to identify elements and compounds by their spectra (plural of spectrum) because the spectrum of each element or compound is unique. You can see these spectra by using a spectroscope to look at light given off by a light bulb containing gas of a specific element. A spectroscope is an instrument that causes light to be separated into its different wavelengths.

In this activity, you will try to identify some mystery elements using this method

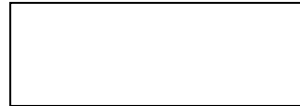
1. Observe the overhead, incandescent, and outdoor lights. Draw the spectrum of each of these.



overhead lights



incandescent light



outdoor light

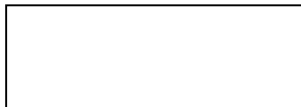
- a. Compare the spectra of the three sources?
- b. Are all colors of the visible spectrum present in all three types of light?

2. Use the spectroscope to observe a black non-reflective surface (e.g. the chalk board) where room light is not reflecting from it.

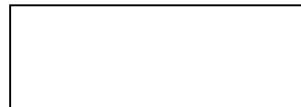
- a. What part of the visible light spectrum does it reflect?
- b. What part of the visible light spectrum does it absorb.

3. Observe the spectra from each of the light source stations.

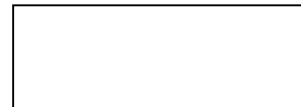
a. Draw the spectrum you see in each.



Station 1



Station 2



Station 3

4. Compare your observations with the poster.

b. What element do you think is present in each tube?

Station 1 _____

Station 2 _____

Station 3 _____

Do later:

5. Why do different elements have different spectra?

6. How is an individual line in a spectrum produced?