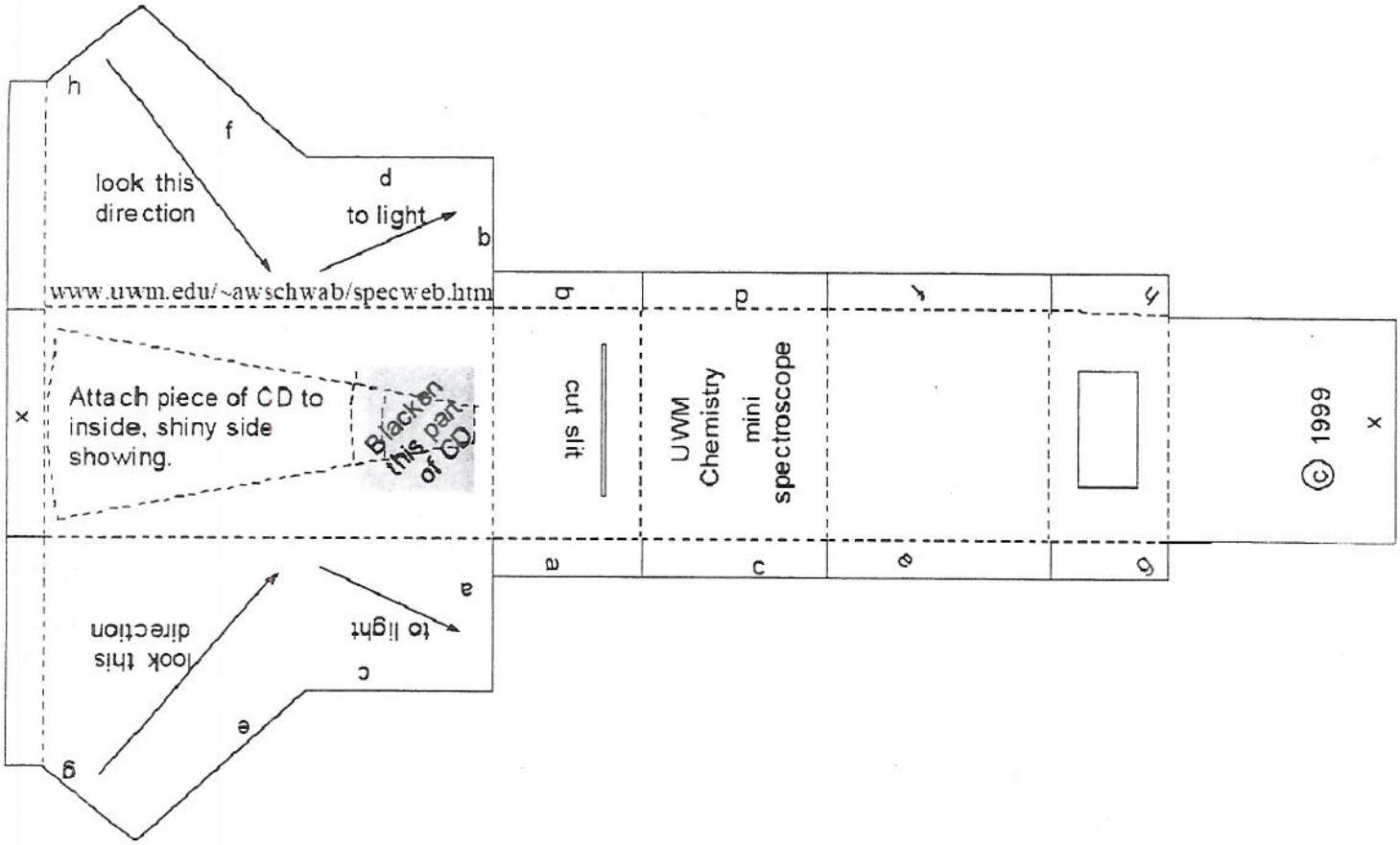


Cut on the solid lines, including the small slit, but don't cut on dotted lines. Cut the slit carefully with straight smooth edges, so as to let through some light, about 0.5 mm wide. You can cut it wider, and then form a narrow slit by the gap between two pieces of opaque tape. Crease on the dotted lines along a ruler or other straightedge, so it can fold to make a little box. Now choose a data or music CD that you don't want as a CD, such as those you get unsolicited in the mail, and cut it into wedges using a pair of stout scissors. You can get about 16 useful wedges out of one CD to use as diffraction gratings. If the CD tends to crack as it is cut, you can prevent that by cutting while it is under warm (not hot) water. Attach a wedge of CD where indicated by the dotted outline, on the side of the paper that will become the inside (usually the unprinted side). Make sure the iridescent shiny side of the CD wedge is exposed, but it's convenient to tape the narrow point to hold it on, and to cover the mirror-like bit near the tip. Crease on the dotted lines along a straightedge, and fold to make a little box with the CD piece inside on the bottom. Glue or tape edges closed (a to a, b to b, etc.) so that they don't leak light, but do not cover the slit. Unlabelled flaps need not be glued. It's convenient to tape at x less thoroughly or not at all so the back can be opened to look at or readjust the diffraction grating (CD piece). You're finished!

Name: _____ Date: _____ Period: _____

Spectroscope Activity Data Sheet

For each light source that you look at, first observe it with the naked eye (NO spectroscope) and make a prediction as what you EXPECT to see when looking through the spectroscope. Then, record what you ACTUALLY see while looking through the spectroscope.

Light Source	Describe what you EXPECT to see?	Sketch EXPECTED Spectrum	Describe what you ACTUALLY see?	Sketch ACTUAL Spectrum
Sunlight				
Incandescent light				
Fluorescent Light				
Red light				
Blue light				
White LCD Computer Screen				

Name: _____ Date: _____ Period: _____

Spectroscope Analysis

1. Compare the spectrum from the sun with the spectrum from the LCD computer screen. What is different?

   a. Why do you think this happens?

2. The spectrum of the LCD computer screen seems to only have select colors. However, the screen can produce nearly any color imaginable. How is this possible?

3. Describe the difference(s) between the spectra produced by the red and blue light.

   a. Why do you think this happens?

4. Both the incandescent light and fluorescent light sources give off white light. Compare the spectrum of the fluorescent light with the spectrum of the incandescent light. Are there any differences in the spectra? If yes, *how* do the spectra differ?

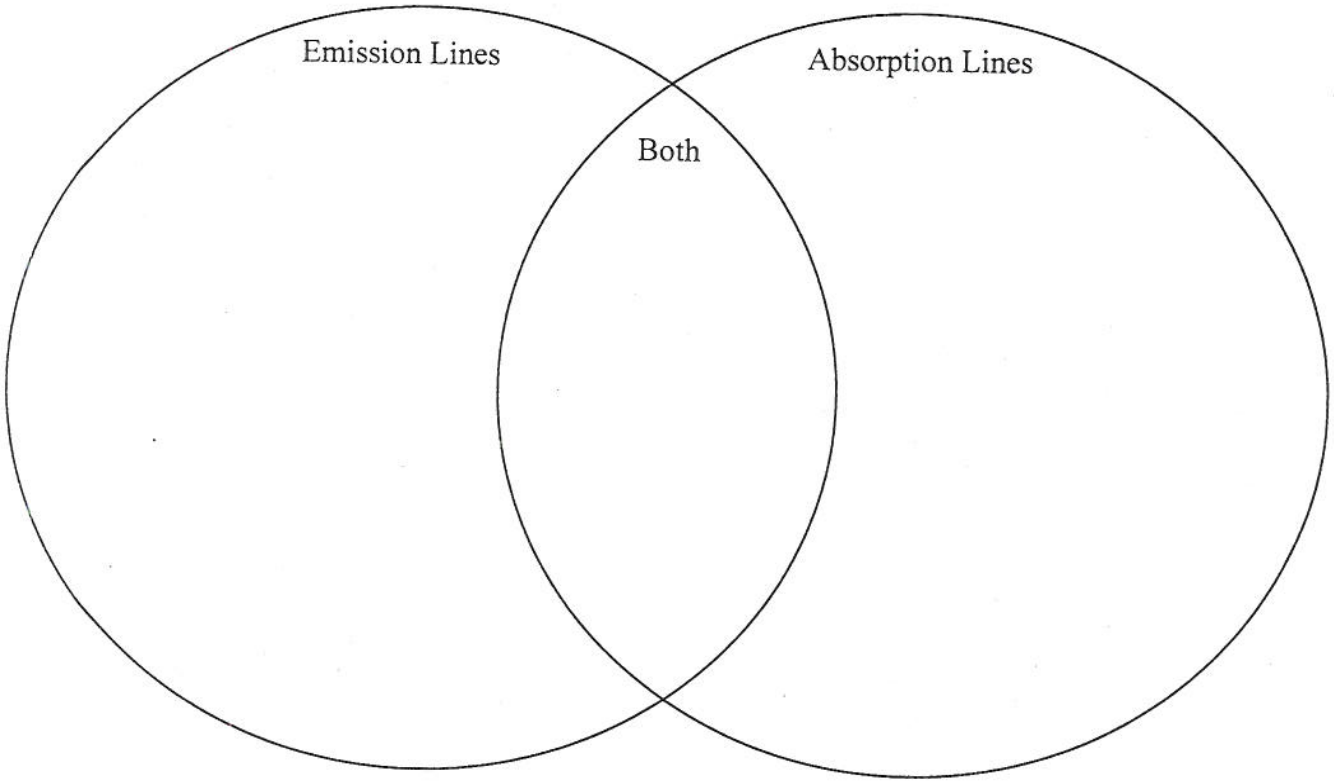
   a. What do you think causes this difference? Think about how each light source produces light.

Name: _____ Date: _____ Period: _____

Spectroscope Definitions

What is a spectrum?

Emission and Absorption Lines Venn Diagram



What is the electromagnetic spectrum?

Name: _____ Date: _____ Period: _____

Exit Survey

Star Formation

1. List three (3) properties of stars that can be measured.

2. Which two (2) properties are WE going to use to classify stars?

Name: _____ Date: _____ Period: _____

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