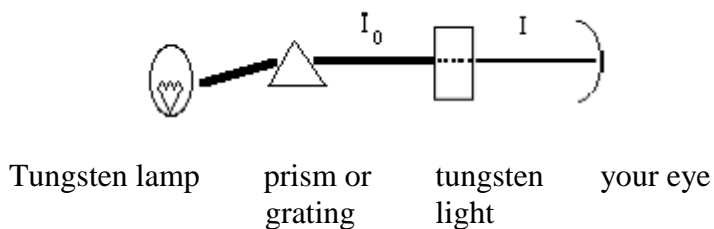


#6 Wave Lengths and Color

Purpose: You will observe the color of light emitted by a spectrophotometer at various wavelengths.

Introduction:

The prism or diffraction grating breaks white light from a tungsten lamp source into colors.



In this experiment, a piece of white chalk, placed into a cuvette (where the sample would be), is used to reflect the colors so each wavelength can be observed by eye.

Apparatus

You will be using a Spectronic-20. To use this instrument refer to the operating instructions attached.

Procedure

1. Cut or rub a 45° angle in one end of the piece of chalk. Place the piece of chalk in a cuvette angle end up.
2. Set the wavelength to 400 nm.
3. Place the cuvette in the spectrophotometer so the angle of the chalk faces to the right.
4. Open the light slit by turning the transmittance adjustment knob clockwise.
5. Look down into the sample compartment and record on the data sheet the color of the light striking the chalk. Repeat, increasing the wavelength by 25 nm until you reach 700 nm.

Drexel Science in Motion

Data and Results (Wavelength vs. Color)

Wavelength	Color
400	
425	
450	
475	
500	
525	
550	
575	
600	
625	
650	
675	
700	

Questions:

Drexel Science in Motion

Instructor's Guide *(#6 Wavelength and Color)*

Data and Results (Wavelength vs. Color)

Wavelength	Color
400	<i>light purple</i>
425	<i>dark purple-blue</i>
450	<i>purple- blue</i>
475	<i>blue-purplish</i>
500	<i>blue-green</i>
525	<i>green</i>
550	<i>yellow-green</i>
575	<i>yellow-orange</i>
600	<i>orange-red</i>
625	<i>red</i>
650	<i>dark red</i>
675	<i>very dark red</i>
700	<i>black</i>

Questions:

Time: 20 min

Equipment and Materials: Per group

Items	Number	Comment
chalk	1	
Spectronic-20	1	
cuvettes	1	