Spectroscopy Lab

Purpose: To use spectroscopy to identify unknowns
Materials: Spectrometer, various solutions, computer, disposable pipettes.

Procedure:
1. Obtain samples.
2. Log in

2. Plug Spectrometer into USB port.
3. Open Logger Pro. If Logger Pro does not auto-recognize the spectrometer, ask the instructor for help.: )

4. Choose Calibrate under the EXPERIMENT menu. (you will need highlight "spectrometer 1."
5. Wait for warm-up and then insert a blank. Finish calibration, but do NOT click the green button yet.

6. Insert sample and click on the green button. Click STOP (Red button) after the spectrum forms
7. Under the EXPERIMENT menu, choose "Store Latest Run." **Use text annotation to label the lines.**

8. Repeat with a different sample. There are 6 knowns.

9. Make separate graphs for the knowns and the unknowns.

Double click on the graph. Choose axis options. In the "X axis" section select manual scaling. Set the low range to 380 nm and the upper range to 780 nm.
This will help in identifying the unknowns during the second day of the lab.

Data: Print your graphs.

Conclusion Questions:

1. For each known solution record the wavelength and color of light that was most absorbed.

| Solution formula | | | | | | |
|---|---|---|---|---|---|---|
| Wavelength of light that was most absorbed | | | | | | |
| Color of light that was most absorbed | | | | | | |

2. In terms of electron motion, describe why the light was absorbed.