

Name:

Date:

Period:

SPECTROSCOPE LAB

Background: Astronomers are able to tell what stars are made of by using a spectroscope. The light from stars is gathered into the spectroscope and then broken into the individual colors that make up the light. This creates a pattern. The pattern is like a "fingerprint". It can be used to tell what gas is burning in stars that are light years away from earth!

Materials: Spectra glasses, colored pencils

Part I. Below are spaces for you to copy the complete visible spectrum of several sources of white light. Draw the complete visible spectrum EXACTLY see you see them.

1. Fluorescent Bulb

R	O	Y	G	B	I	V

2. Sunlight

R	O	Y	G	B	I	V

3. Incandescent Bulb

R	O	Y	G	B	I	V

4. LED bulb

R	O	Y	G	B	I	V

5. Cell phone screen

R	O	Y	G	B	I	V

Part II. Below are spaces for you to copy the line spectra for particular gases. Draw the visible spectrum EXACTLY as see you see them.

1. Name of Gas:

R	O	Y	G	B	I	V

2. Name of Gas:

R	O	Y	G	B	I	V

3. Name of Gas:

R O Y G B I V

4. Name of Gas:

R O Y G B I V

5. Name of Gas:

R O Y G B I V

6. Name of Gas:

R O Y G B I V

Part III. Now that you have seen 6 different gases, see if you can identify 2 Mystery Gases, based on their bright line spectra.

7. Mystery Gas #1

R O Y G B I V

8. Mystery Gas #2

R O Y G B I V

Part IV. Answer the following questions based on what you observed during this lab, AND our class discussions. You will have to THINK and make some connections on your own to come up with correct answers.

1. Why must you have a source of white light to form a complete rainbow?
2. How does a neon light (like the Open signs at businesses) work?
3. What determines if light energy is visible?
4. Describe an experience you have had with any one of the other types of radiant energy. (Besides visible light)