Prisms and Rainbows

Part 1: Using the Prism Box with light from a bulb

Observations:

Describe all the colors you see. Look carefully. You may be able to identify dozens of different colors.

List the 7 major colors in the rainbow in the order they appear.

Which color is on the top?

Which color is on the bottom?

Draw a side view of the Prism box. Imagine one of the side walls has been removed. Include the light source, the path through the prism and out the other side. Make sure you accurately show the angle of the prism to the light source that produced the clearest image of a rainbow.

Define the words:

Refraction

Prism

Spectrum

Part 2: Using the Prism Box with light from the Sun

Position the box so that Sunlight is able to pass through the prism and cast a rainbow on white paper on the bottom of the box. Draw the rainbow.

Describe all the colors you see. Look carefully. There are many more than just the major seven.

List the order of the colors you see starting with the one on top.

Draw a side view of the Prism box. Imagine one of the side walls has been removed. Include the light source, the path through the prism and out the other side. Make sure you accurately show the angle of the prism to the light source that produced the clearest image of a rainbow. Show how high in the sky the Sun was. If you had to tip the box at an angle, measure and record that angle.

Are there any differences between the rainbow from the bulb and the rainbow from the Sun? Explain your answer.

Explain why the angle of a prism to the light source determines whether it is able to cast a rainbow.