

World of Colours

You should complete any 2 of the following. You may complete all 3 if you wish.

1. Primary colours of light - You and two other students will take a flashlight, and cover the front of each flashlight with coloured cellophane. One of you will use red, one will use blue and the other will use green.

The room needs to be dark, and you and your partners need to stand close to a wall or have a piece of white paper taped to the wall for this to work.

1. Shine the green flashlight on the wall. Shine the red flashlight on the same spot on the wall.
2. What new colour is made in the area where the green light overlaps or partly covers the red light that is shining on the paper? Write your answer.
3. Shine the red flashlight on the wall. Shine the blue flashlight on the same spot on the wall. What new colour is made in the area where the red light overlaps or partly covers the blue light that is shining on the wall?
4. Shine the green light on the wall and the blue light on the wall. What new colour is made in the area where the green light overlaps or partly covers the blue light that is shining on the wall?
5. Try to make the light shining on the wall a white light. Explain how you did this.

2. CD RAINBOWS

1. You will be using a compact disk (CD) to look at light from several different sources. Look at the surface of a CD. In your science notebook describe what the surface looks like.
2. Move the CD and try to allow some of the light from overhead to hit its surface and produce "rainbow colours" or visible spectrum. Record all of the colours that you see.
3. Use the CD to look at light from a flashlight, a lamp with a 60 W bulb, sunlight from a window, and a candle. Record the colours that you were able to see
4. Explain why you think that the CD separates light into colours.

3. DIFFRACTION ACTION

At this centre you will be using a diffraction grating to look at different colours of light. A diffraction grating works kind of like a prism in that it will separate white light into the colours that make it up. Each colour has a certain wavelength with red being the longest wavelength and violet being the shortest wavelength. The other colours that you might see in the spectrum are usually in this order, from longest to shortest wavelengths: Red, Orange, Yellow, Green, Blue, Indigo and Violet.

As you look at each type of light with the diffraction grating you will record the colours that you see. For example, if only red, orange, yellow and green are seen when you look at a flashlight beam through the diffraction grating, record this. You can use a chart to record your data if you wish.