Whizzer Wheel

Spinning this colored disc takes some practice. But once you master the art, you'll have an interesting toy that also proves an important scientific fact about light.

Materials
- stiff, white card 25cm square
- scissors, ruler and pencil
- pair of compasses and protractor
- paint brush and poster paints in red, orange, yellow, green, blue and violet
- 1 m fine string

1. Draw a circle with a radius of 10cm on the card.
2. Cut out this circle.
3. Draw a line through the center of the circle to divide it in half.
4. Measure and mark 60° angles in each half of the circle.
5. Draw diagonal lines through these marks to divide the circle into six equal segments.
6. Paint the segments of the circle in this order: red, orange, yellow, green, blue and violet.
Let the paint dry.
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7. With the tip of the scissors, make two holes, about 1.5cm apart, on either side of the center.
8. Thread the string up through one hole and down through the other.

9. Tie the ends and trim the knot.
10. Loop one end of the string over each index finger and flip the disc until the string is tightly twisted.
11. Steadily pull apart your hands to make the disc spin rapidly. Move your hands inward as the disc slows down, then pull them apart again, Practice these movements until you can keep the disc spinning.
When the disc spins quickly, you will see only a creamy color. That's because your eye cannot pick out separate colors at speed.

The disc also shows that White' light consists of several colors. In fact, all light is made up of red, orange, yellow, green, blue, indigo and violet. (If you divided the disc into seven segments and painted the seventh segment indigo, you would see pure white light.)