

5.5P Project “Make a Kaleidoscope”

Aim: To Design, build and test a Kaleidoscope Viewer

What’s a Kaleidoscope?

Wikipedia: A **kaleidoscope** is a cylinder with [mirrors](#) containing loose, coloured objects such as [beads](#) or [pebbles](#) and bits of glass. 3 rectangular mirrors enclosed in an equilateral triangle is best. It makes multiple images that can be viewed.



Equipment:

Cylinder with lid e.g. a “Pringles Tin” or opaque cover at one end.

3 rectangular mirrors (acrylic, plastic or alfoil) to fit in cylinder

(mirrors can be made using alfoil on card or clear plastic on black cardboard strips)

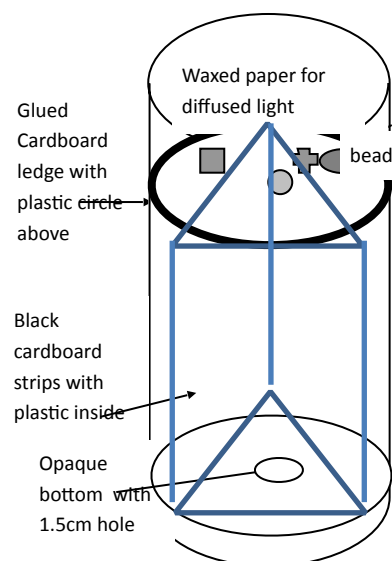
Various translucent beads, coloured paper.

Plastic wrap to contain the beads or ledge with clear plastic.

Waxed or baking paper for one end

Rubber bands or tape to fix on paper.

Nail to make pinhole



Assessment

This will be based on:

- Your Planning and improvements over time.
- Success of the design based on rating by other students.
- Your report on how its uses light for the best effects

Method

1. Decide the type of Kaleidoscope (size of cylinder, # of mirrors, type of mirrors, type of beads)
2. Decide on materials of the Kaleidoscope by what you have available.
3. Explain to your teacher your ideas (you can draw, speak or show)
4. Once you have teacher's approval, construct your Kaleidoscope!
5. Test the view using outside light and rotating the Kaleidoscope to move the beads .
6. Redesign if it doesn't seem to work well.
7. Final test – Get others to rate yours 1-10.

Assessment Sheet

List Improvements

Object	How I Improved it
mirrors	
beads	
ends	
cylinder	

My Class rating /10 :

Report on how the kaleidoscope used the mirrors to make patterns:

Series of photos



Open Cylinders with
triangular mirror
prism inside



Upside down lid with cutout triangle
matching orientation of prism inside
taped and holding coloured beads



Baking paper fixed with rubber band
around the side

Note to Teachers: Large Acrylic Mirror Sheets are available from:

The Plastic Factory : 1800 697 527

Plastic wholesale: 1800 888 752

All Star Plastics 1300 467 527

Acrylic Mirror can be cut by scoring with a cutting tool and then snapping on the edge of a table.