Kaleidoscope

Apparatus

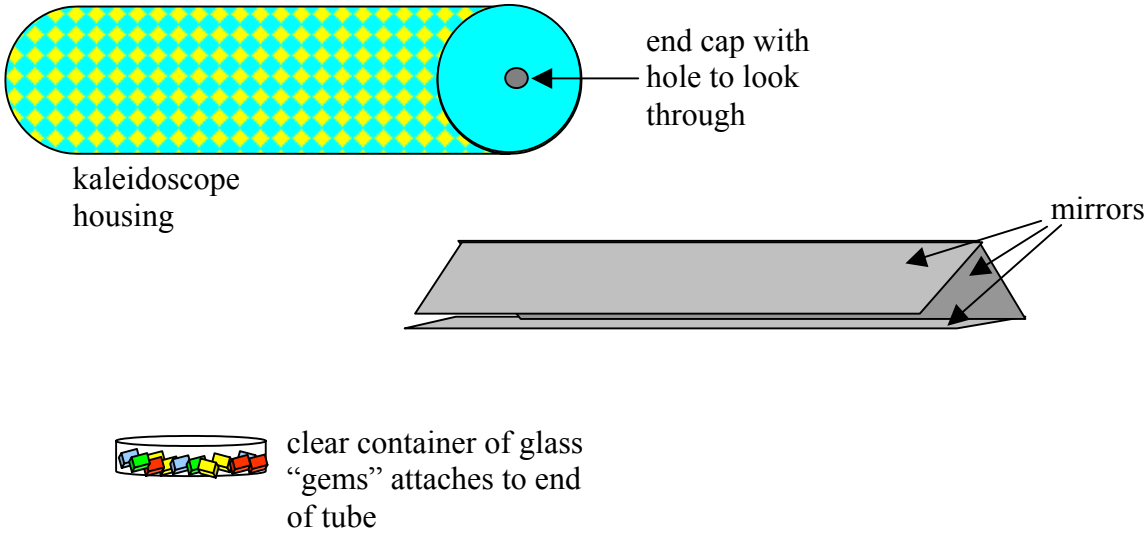
toy kaleidoscope from toy shop, light source, extra kaleidoscope, disassembled

Action

The students look though the kaleidoscope and attempt to explain how it works.

The Physics

The three mirror kaleidoscope makes a repeating pattern, with the number of images depending on the angles between the three mirrors. The two mirror kaleidoscope makes a circular pattern. Kaleidoscopes with four mirrors produce a line of images. Pictured below is the construction of a three mirror kaleidoscope. The mirrors are arranged in to form a long triangular tube with open ends which sits inside the kaleidoscope housing. When an object is viewed through the tube many images are seen, forming a pattern. Many kaleidoscopes come with an object such as a clear container of glass beads ("gems") attached to end to form sparkling patterns.



Accompanying sheet

Kaleidoscope

Look through the kaleidoscope.
What do you see?

How many images do you see?
How many mirrors does it contain?

You can check your answer by pulling apart the other kaleidoscope.