



Construction of a spectroscope

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Material needed:

- ♦ paper tube: the inner tube of a toilet paper roll;
- ♦ 2 squared pieces of black cardboard(8cm*8cm);
- ♦ glue and a cutter;
- ♦ 2 halves of a single edge razor blade;
- ♦ scissors, black sellotape
- ♦ diffraction grating (2cm*2cm): a piece of an old CD-rom

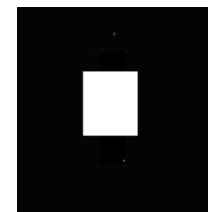
Procedure:

♦ Cut a slit 0.2 cm x 1.5 cm in the centre of one of the cardboard squares. (you can fix two halves of the razor blades together at the edges of the slit by using the black sellotape. Do it in such a way that their cutting edges are facing one another, so that the space in between is thin enough to let a piece of cardboard pass through downwards . The slit obtained in this way will be very thin and neat. But it's **not** possible with children!!!)



♦ Glue this square to one of the basis of the paper roll . Make sure the glue has dried up, then cut the square, just as large as the cylinder base . Not to let light in, seal the round piece of cardboard to the edges by using the sellotape. Light should pass only through the slit.

♦ Cut a 1-cm-square hole in the centre of the second squared piece of black cardboard.



♦ To prepare the diffraction grating you need the piece of CD. It has been obtained by peeling off the silvery and coloured film in the upper part of a CD. Be careful not to scratch it as it is very delicate.

♦ Fix the diffraction grating (the little piece of the CD) to cover the squared hole in the piece of cardboard. Seal it to the edges by using the sellotape paying attention not to cover the diffraction grating

♦ Glue this squared piece of cardboard to the paper roll, on the side of the paper roll which is still free.

♦ Now your spectroscope is ready

♦ Look through it. Point the slit towards the source of light, with the diffraction grating close to your eye. What can you see?