### ***Homemade spectroscope***

This is an activity for students to create their own spectroscope to observe the diffraction of light and compare light spectra from a range of sources.



**Equipment**:

* Box (e.g. biscuit or cereal box)
* Marker pen
* Ruler
* Craft knife (may need teacher’s assistance)
* Old CD (or DVD) that is no longer needed

**Method**:

1. Use the marker pen and ruler to mark where you will cut holes in the box as pictured below:
	1. **CD slit,** to hold the CD at an angle of 30°-45°
	2. **Narrow slit,** directly opposite the CD
	3. **Viewing hole,** directly above the CD, approximately 2 cm x 2 cm in size



1. Use the craft knife to carefully cut the holes and slits as marked.
2. Slide the CD into the angled slit with the reflective side facing the viewing hole.
3. Point the narrow slit towards a light source (e.g. fluorescent light) and change the position slightly until a clear spectrum appears on the CD when viewed through the viewing hole.

**Note**: A cleaner edge can be made for the narrow slit by cutting a wider hole and covering it with a narrow slit made using aluminium foil or cardboard held in place with sticky tape.

**Extension**:

* Use the spectroscope to look at different sources of light e.g. hydrogen lamp, helium lamp and neon lamp and compare the different spectra.

**Adapted from**: <https://www.youtube.com/watch?v=ZowYVDQDDZ4>