

Periscope-style Spectroscope

Project Moonbase



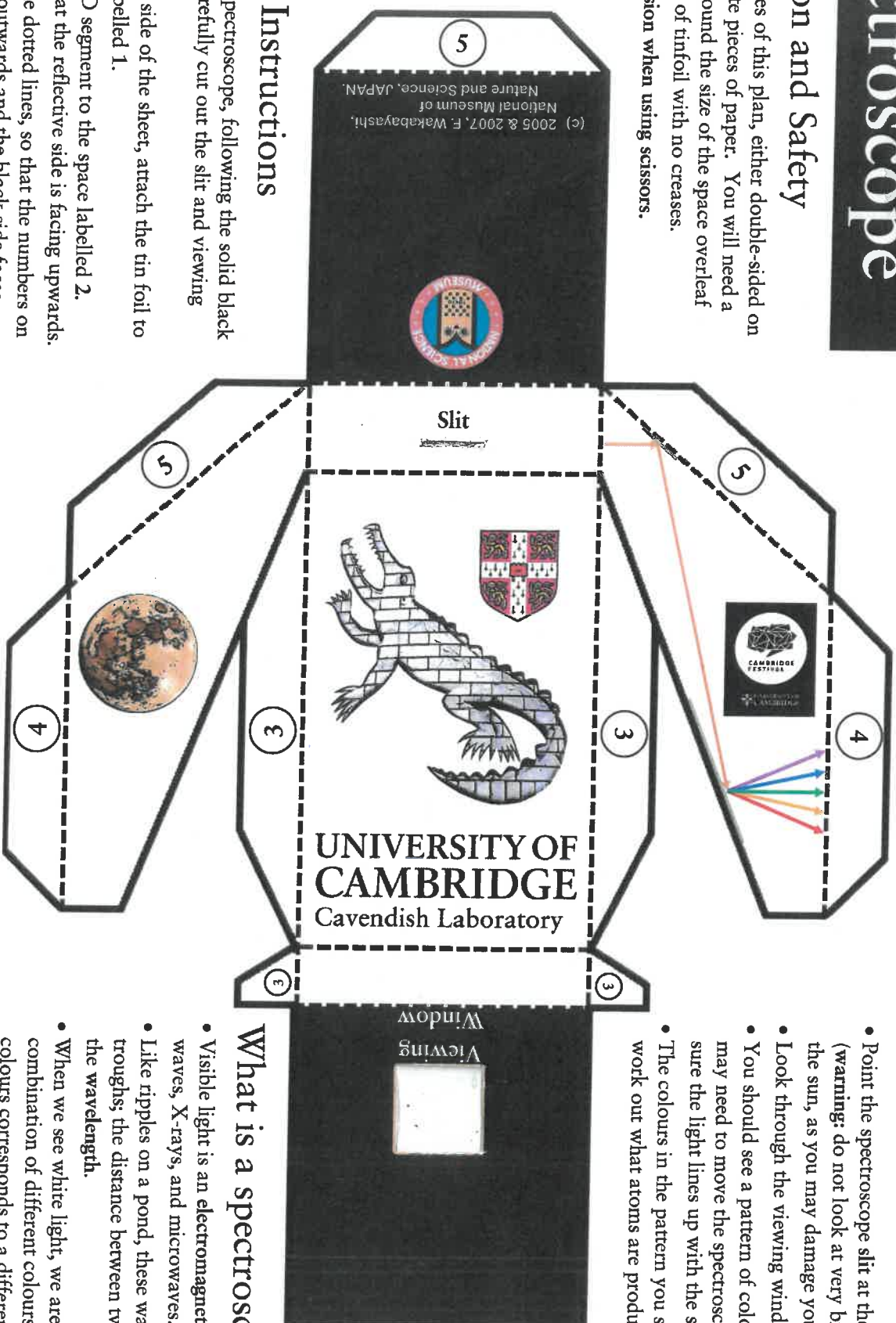
Preparation and Safety

Print out both sides of this plan, either double-sided on card or on separate pieces of paper. You will need a segment of CD around the size of the space overleaf and a 1cm square of tinfoil with no creases.

Use adult supervision when using scissors.

Building Instructions

1. Cut out the spectroscope, following the solid black lines, then carefully cut out the slit and viewing window.
2. On the black side of the sheet, attach the tin foil to the square labelled 1.
3. Attach the CD segment to the space labelled 2. Make sure that the reflective side is facing upwards.
4. Fold along the dotted lines, so that the numbers on the tabs face outwards and the black side faces inwards.
5. Following the numbered order, add tape to each of the tabs and fasten them to the corresponding number on the black side.



How to use

- Point the spectroscope slit at the light source (warning: do not look at very bright lights, such as the sun, as you may damage your eyes).
- Look through the viewing window.
- You should see a pattern of coloured lines. You may need to move the spectroscope around to make sure the light lines up with the slit.
- The colours in the pattern you see can be used to work out what atoms are producing the light.

What is a spectroscope?

- Visible light is an electromagnetic wave, like radio waves, X-rays, and microwaves.
- Like ripples on a pond, these waves have peaks and troughs; the distance between two peaks is called the wavelength.
- When we see white light, we are seeing a combination of different colours. Each of these colours corresponds to a different wavelength of light.
- A spectrometer splits light into separate wavelengths, showing us which wavelengths that source of light is emitting. This can tell us which types of atoms are producing the light.

