

# Telescope

## Apparatus

small astronomical (refracting) telescope, and/or cut open telescope showing the arrangement of lenses

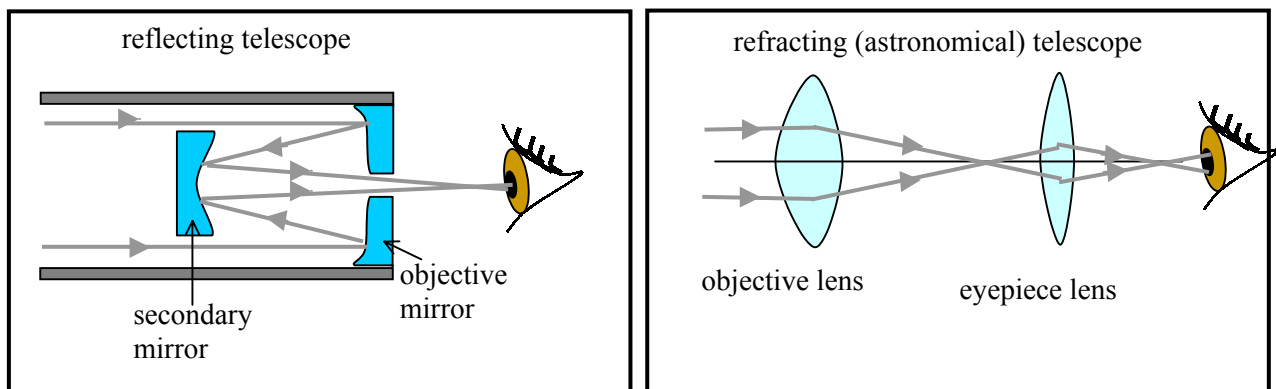
## Action

The students look through the telescope, and identify the type of image that they see. They should identify the type of telescope they have, and draw a schematic diagram showing the main optical elements.

## The Physics

A telescope is used to look at (relatively) large objects a long way away. The telescope on the left is a reflecting telescope. It uses concave mirrors to produce a real, enlarged image at the eye. Rays from a distant object come in approximately parallel and are converged by the mirrors. The telescope on the right is a refracting telescope, also called an astronomical telescope. This telescope uses a pair of convex lenses to produce a real, enlarged, upright image. The focal length of the eyepiece should be much smaller than the focal length of the objective lens.

The telescope that you used was a refracting telescope. This is the common sort of simple astronomical telescope or spotting telescope.



## Accompanying sheet

### Telescope

Look at the diagrams shown.  
What sort of telescopes are these? Explain how they work.

Now examine the telescope on display.  
Use the telescope to view a distant object out the window.  
What sort of telescope is this?