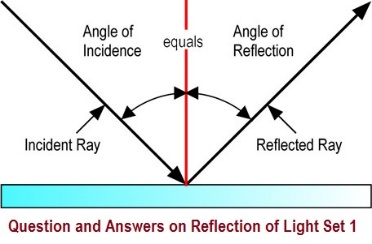
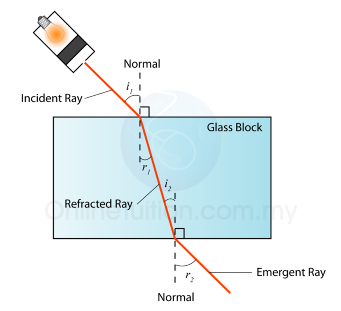
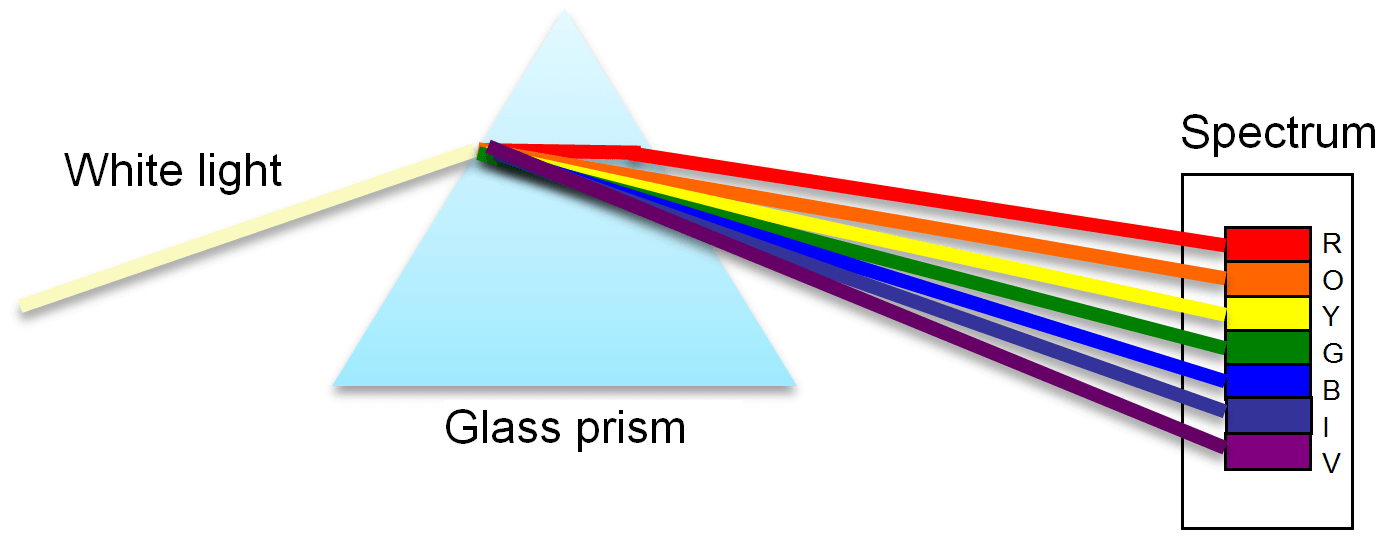
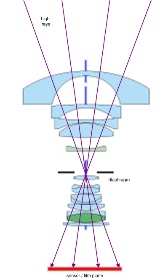
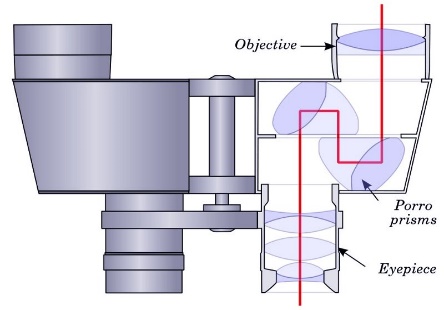
**The 6 Principles of Light**

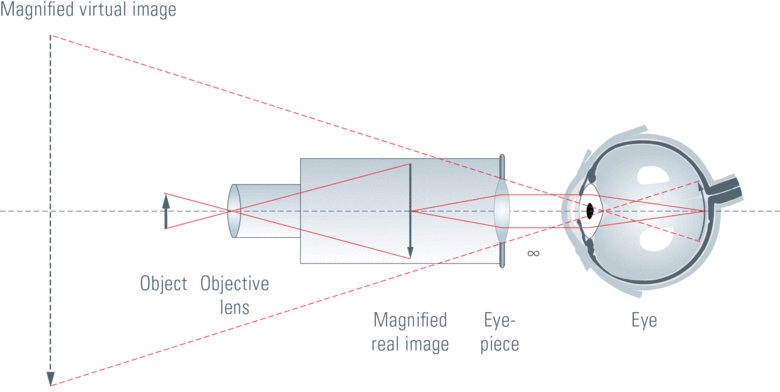
* [](http://www.google.ca/url?sa=i&rct=j&q=&esrc=s&frm=1&source=images&cd=&cad=rja&uact=8&ved=0CAcQjRw&url=http://pbl2i2.pbworks.com/w/page/36907266/Group%208%20Main%20Page&ei=a03BVIyTLoi2yQSekoHoAg&bvm=bv.83829542,d.aWw&psig=AFQjCNG8CTQuXwbArKLM66-xdIgpjlic3g&ust=1422040801978547)1. Light is a form of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* 2. Light travels in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* 3. Light travels in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at 300,000 km/sec (and in some types of media at slower speeds.)
* 4**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** – light reflects off objects (which makes them visible).
  + The angle of incidence is always equal to the angle of reflection
  + The incident ray, normal and reflected ray all lie in the same plane
* 5. **­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is the bending of a wave when it enters a medium where its speed is different.
  + The Law of Refraction: As light travels at an angle from a less dense medium to a denser medium it refracts or bends the light \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + If light is traveling at an angle from a denser medium to a less dense medium it bends/refracts \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + If a light is traveling straight into a medium, it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bend or refract.
* 6. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** – each of the colours that make up \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ refract differently and so spread apart and become visible when passing through a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

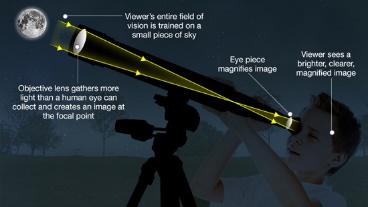
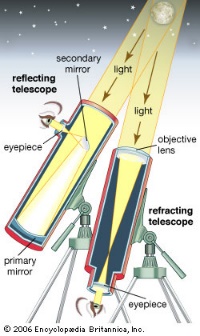


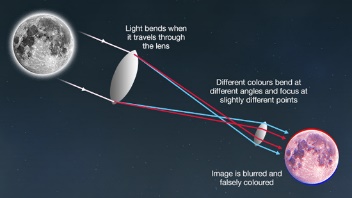
* Sir Isaac Newton discovered that dispersion happens when white light refracts through a prism. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

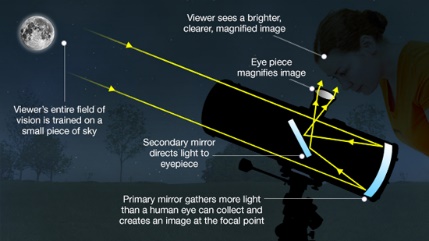
Lenses and Mirrors Technology

Microscopes: Cameras: Binoculars:

[](http://www.leica-microsystems.com/typo3temp/pics/Figure_10_3sp_02_eb6775485e.gif)

[](http://www.google.ca/url?sa=i&rct=j&q=&esrc=s&frm=1&source=images&cd=&cad=rja&uact=8&ved=0CAcQjRw&url=http://www.bbc.co.uk/science/0/20937803&ei=uT_EVPWdIYavggSU04K4CA&bvm=bv.84349003,d.eXY&psig=AFQjCNHfesF_-GDzQG_OsOACgTJ7jt51Qg&ust=1422233554909209)Teloscopes:

* 1. Refracting Telescopes – the first telescopes
  + Galileo and Kepler
  + The lenses used in these telescopes were difficult to make at the time.
  + Problems with refracting: Image is falsely coloured and blurry

Reflecting Teloscopes

* Reflecting Teloscopes: Mirrors were much easier to make than lenses…and they didn’t refract the light and distort the colours.
* Isaac Newton invented this kind of telescope.
* Another benefit of using mirrors instead of lenses is that big mirrors are easier and cheaper to make than big lenses.
* Reflecting telescopes can be much much larger than refracting telescopes and therefore look deeper into space.

The Hubble Teloscope:

