WJEC England Physics GCSE

Specified Practical

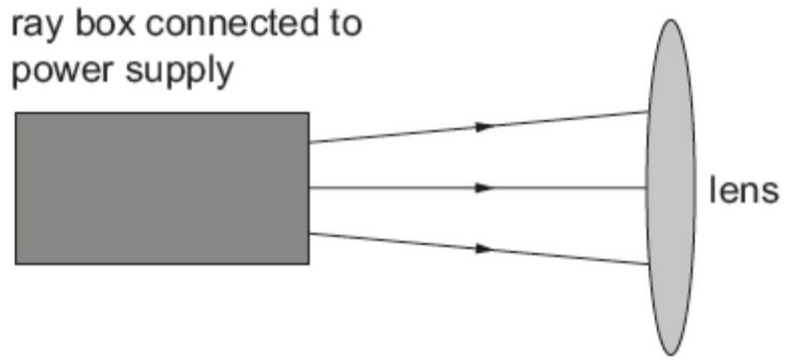
Lenses

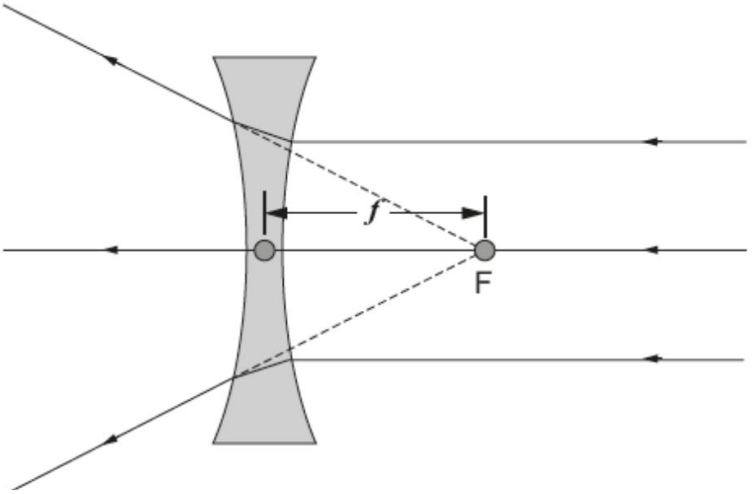
SP6.3 Investigation of the images in convex and concave lenses

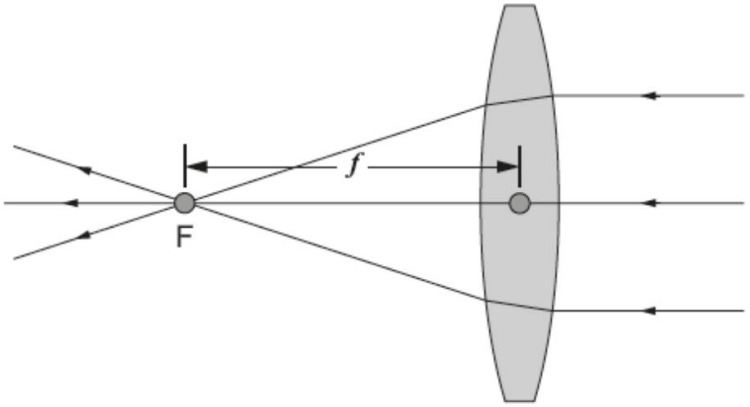
Equipment

- Ray box
- 3 slit grating
- Convex lens
- Concave lens
- 12V D.C. power supply
- Sheet of A4 paper

Diagrams







Images: Eduqas

Method

1. Set up the ray box on top of the paper with the grating in front of it so there are three clear beams of light on the paper.
2. Place the convex lens in front of the ray box and draw around it on the paper.
3. Turn on the ray box and mark dots on the paths of the light rays before and after passing through the lens and join the markings with a ruler.
4. Repeat this with a concave lens.
5. Use the diagrams on the paper to determine the focal length of the lenses.
    - This is the distance between the centre of the lens and the principal focus – the point where the light rays converge
    - The Principal focus of a concave lens can be found by extending the light rays leaving the lens backwards until they meet as seen in the diagram below

Tips

- This should be done in a darkened room so that the light beams are clearly visible.

Safety Precautions

- The room will be dark so be aware of your surroundings and ensure all trip hazards such as bags and chairs are tucked away to minimise the risk of someone falling or hurting themselves.