Real and Virtual Images

Apparatus

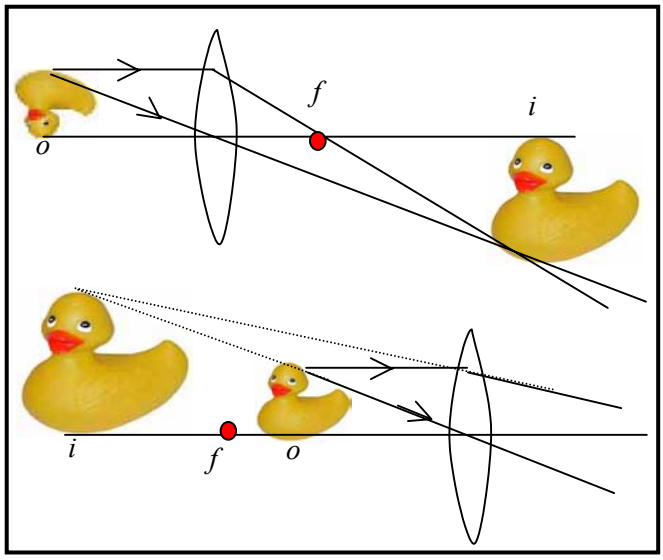
slide projector and magnifying glass

Action

The students examine both the slide projector and magnifying glass. They form an image using each, and draw a ray diagram showing how the images are formed. They then determine whether the images are real or virtual.

The Physics

A slide projector produces a real, inverted and magnified image. The image must be real, because otherwise you wouldn't be able to project it onto a screen. The image is inverted, so the slides have to be put in upside down. A projector uses a convex lens.
A magnifying glass also uses a convex lens. The image is upright, magnified and virtual. The object must be at or within the focal length of the lens.



Accompanying sheet

Real and Virtual Images

Examine the slide projector, and use it to produce an image.
Draw a ray diagram showing how the projector produces an image.
What sort of an image is this? How can you tell?

Now use the magnifying glass to produce an image.
Draw a ray diagram to show how this image is formed.
What sort of image is this one?