

Sequence 1: images in everyday life



Sommaire des activités ETLV :

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Objective: to learn the standard vocabulary related to geometric optics used commonly in optical instruments.

In optics, an **image** is defined as the **collection of light rays** coming from an object. A **real image** is the collection of focus points actually made by converging rays. In other words, it is an image which is located in the **plane of convergence** for the light rays that originate from a given object. Examples of real images include an image on a **cinema screen** (the source being the projector), the image produced on a **detector** in the rear of a camera, and the image produced on an **eyeball retina** (the camera and eye focus light through an internal convex lens).

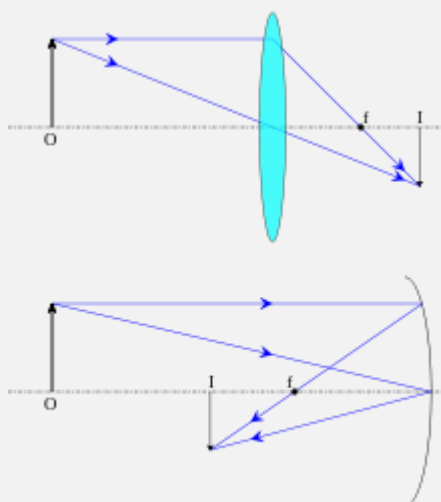
Real images can be produced by mirrors and **converging lenses**.

Real images may also be inspected by a second **lens** or lens system. This is the mechanism used by **telescopes**, **binoculars** and **light microscopes**. The objective lens gathers the light from the object and projects a **real image** within the structure of the optical instrument. A second lens or system of lenses, the **eyepiece**, then projects a second real image onto the **retina** of the eye.

DOCUMENT 1: formation a real image

Top: The formation of a real image using a lens.

Bottom: The formation of a real image using a mirror. In both diagrams, f is the **focal point**, O is the object, and I is the image. Solid blue lines indicate light rays. It can be seen that the image is formed by actual light rays and thus can form a visible image on a **screen** placed at the position of the image.



Source: Wikimedia commons

■ Acquiring vocabulary:

Using the previous documents, find a translation for the following words:

English	French
real image	
plane of convergence	
cinema screen	
detector	
eyeball retina	
converging lens	
binoculars	
eyepiece	
focal point	

Connaissances et capacités à maîtriser

Ce qu'il faut savoir faire :

Compétences	Capacités à maîtriser	Où dans cette séquence ?
APP	Utiliser du vocabulaire spécifique	Activité 1
	Lire et comprendre des documents scientifiques	Activité 1
COM	S'exprimer à l'oral en utilisant le vocabulaire adapté	Activité 1