Camera Obscura

Boundary Way

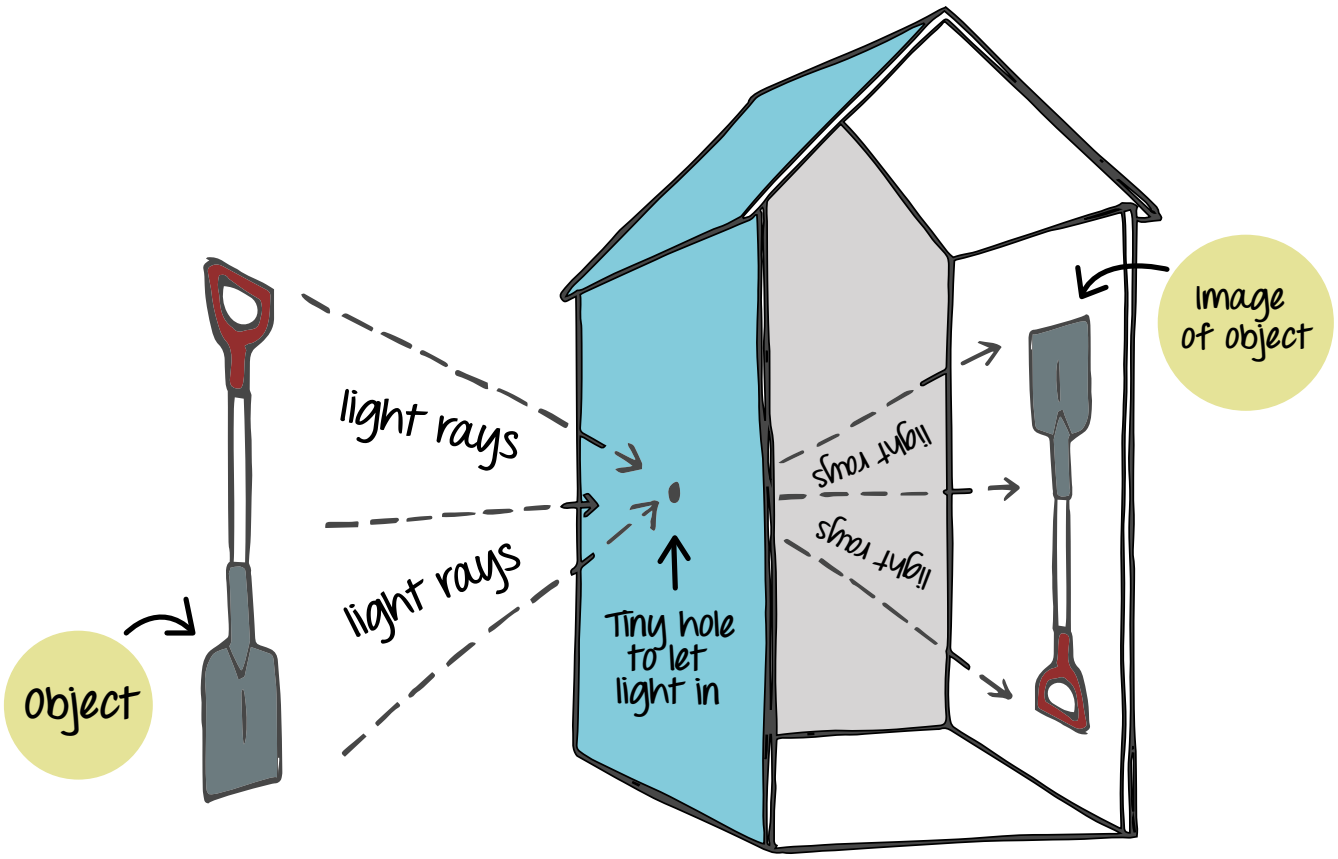

Diagram of the Shed Camera Obscura at Boundary Way

A Camera Obscura is a dark room with a hole/aperture. Because light travels in straight lines it bounces off the objects in the outside world, travels through the tiny hole and projects an upside-down image in the interior space.

You can make your own Camera Obscura by blacking out a room on a bright day and making a small hole in a window cover. Then look around you and what will you see? In full colour and upside down will be images of the moving world from outside your window. Magic!

The shed Camera Obscura at Boundary Way

History of the Camera Obscura

Stone Age
People in the Stone Age may have possibly been the first to discover upside down projected images inside their dwellings. Cave drawings may have been created in response to these inverted images.

5th Century BC
Mo-Ti the Chinese Philosopher was the first to describe the basic concept of the Camera Obscura: that light rays passing through a pinhole into a darkened room, would project an inverted image of the scene outside that room. He referred to this darkened room as a "collecting place" or the "locked treasure room."

4th Century BC
The Greek Philosopher Aristotle also understood the optical principles of the Camera Obscura. He observed the crescent shape of a partially eclipsed sun projected on the ground through the openings between the leaves on a tree. Even though the gaps in the leaves were different shapes triangular etc. the images were all crescent shaped.

10th Century AD
Alhazen of Basra, an Arabian scholar, made a dark room in the form of a tent. He conducted a number of experiments that proved light travels in straight lines.

1200s
In the 13th Century, the camera obscura was used by astronomers to view the sun. Dutch scientist Reinerus Gemma-Frisius illustrated a room that is used for observing solar eclipses. At around this time convex lenses and mirrors were added to the aperture in an attempt to reflect the image into a viewing area.

1500s
In the 16th Century the camera obscura was used as an aid in drawing. It is believed that it was used by many Renaissance artists such as Vermeer, Leonardo, Michelangelo and others to create their masterpieces. However many would not admit to this as at that time artists worried that people would think they were 'cheating'.

1600s
Johannes Kepler (1571–1630) and other astronomers used the camera obscura to observe the sun. When viewing dimmer objects a problem arised in that the tiny aperture/hole let in very little light, resulting in a dim image, however the image was sharp.

The aperture/hole can be made larger to let in more light, but this causes the image to become blurrier. Over time it was discovered that if you place a glass lens over a larger aperture/hole this will focus the light to create a bright sharp image.

In the 17th Century portable Camera Obscuras were made to be used as drawing aids.

1800s
In Victorian times, larger Camera Obscuras became popular seaside attractions, allowing groups of people to experience the phenonema together. The live images were a great source of entertainment.

At the top of Constitution Hill in Aberystwyth, Wales, is the biggest Camera Obscura in the world. The 14 inch (35.6cm) lens takes a 360 degree view of more than 1,000 square miles of land and sea, which is reflected onto the circular screen in the darkened viewing gallery below.

Consitution Hill Camera Obscura in Aberystwyth
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Image of the coastline reflected onto the viewing gallery in the Consitution Hill Camera Obscura in Aberystwyth © Ann Walker

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