



## Camera - How does a camera work?

### Fact

- Most of the inside of a camera is an empty space. That empty space is dark, because it's sealed off from the light outside.
- Light can only get in when a little door at the front of the camera is opened for a very short time.
- The light passes through a lens a bit of glass that bends it – and ends up making an image on the film at the back of the camera.
- When the light hits the film the chemicals on the film change. The more light that hits the film the darker the film goes
- And it happens very fast so that's why the door at the front of the camera is only open for a very short time.

### Do you know

- The door at the front of a camera is called the shutter.
- The aperture controls the amount of time the light is allowed in onto the film.
- The viewfinder is what you look through to see the picture you're taking.
- The flash is used when the camera needs more light to take the best picture.
- The lens bends the light and focuses it on the film at the back of the camera the way the lens in your eye works to focus the image you're seeing on the back of your retina.
- The light from the top of the image the camera is taking a picture of travels through the lens to the bottom of the film and the light at the bottom of the image travels through to the top of the film so the image looks upside down.
- The full name for a camera is a camera obscura. Camera is Latin for room and obscura is Latin for dark.

### Experiments you can do

#### Make a Camera Obscura

The first recorded use of a room like this was hundreds of years ago in 5<sup>th</sup> Century BC in China but people have been making rooms like this ever since.

#### What you need:

An adult assistant

A room with a window opposite a blank wall

A bright sunny day

A way of blocking out the light completely – we used black polythene but you might have cardboard boxes that you can break down and use or thick material that you can make a little hole in.

### What you do:

Block out all the light from the window and shut the door so that the room is as dark as possible. Then get your adult assistant to make a tiny hole in the middle of the window covering. The light that comes through the hole will land on the wall opposite the window and should make a clear picture of what's outside. But the picture will be upside down.

### **Other Investigations**

Next time the film in your camera is off to be developed and the camera is empty ask if you can have a look inside the camera. Remember you look with your eyes not your hands :o) and that's because you need to keep the inside of the camera as clean as possible!

Make sure there's no film in the camera before you open it or it will ruin the film and all the pictures that have been taken.

You'll see where the film sits in the camera and the empty space that the light travels through from the lens to the back of the camera. Get an adult to help you find all the different parts of the camera.

### **Jokes**

Why would the camera make a great detective?

It has a photographic memory