



Letting light through

Some objects let light through. When these objects are perfectly clear, we call them transparent. Otherwise we call them translucent.

Most things block the light completely so that it is dark behind them. But some materials let light through. If you can see through something clearly it is called **TRANSPARENT** (Picture 1).

Air is transparent. A sheet of glass is a transparent object. Other transparent objects include water (Picture 2) and certain kinds of plastic.

Even transparent objects still block out a little light. In general, the thicker the object is, the more light is blocked. This is why you can see through a glass of water but not to the bottom of an ocean.

▼ (Picture 1) You can see through the plastic used for the case of this telephone, so it is transparent. The girl's skin and hair, her red headband and the parts inside the telephone block the light and are called **OPAQUE**.



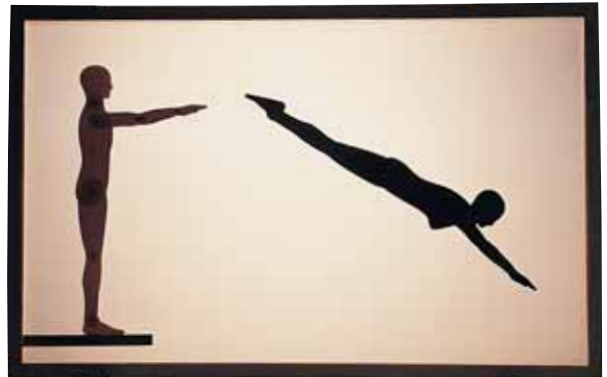
▲ (Picture 2) Water is transparent. You can clearly see the bottom of this bowl.

Translucent

A few materials let some light through but not as much as if they were transparent. Greaseproof paper is an example of this. Thin materials, such as roller blinds on windows and cloth handkerchiefs, let some light through.

You cannot see as clearly through this kind of material as you could through something that is transparent, but a bright light, like a projector, can send light right through it (Picture 3). These materials are called **TRANSLUCENT**.

▼ (Picture 3) Greaseproof paper is a translucent material. This is why you can use it to make shadow plays.



Filters

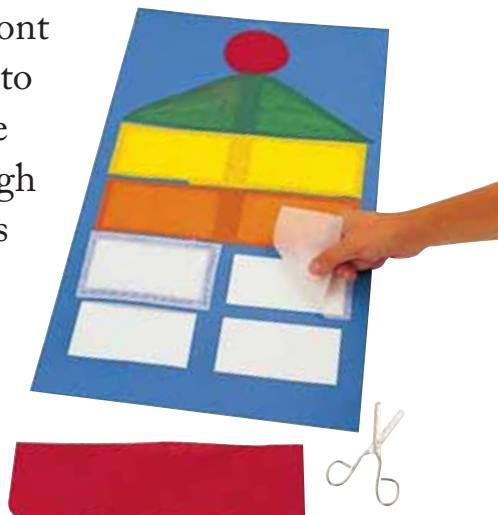
Some materials will just block out some parts of the light. If you hold a piece of red tissue paper in front of your eyes, you will be able to see clearly through it. But the only colour that comes through is red. This type of material is called a **FILTER**.

Coloured glass will only let through light which is the same colour as the glass. You can see this in some churches that have

STAINED GLASS WINDOWS

(Picture 4). You can make your own stained glass window using tissue paper.

Filters are used in TV studios, theatres and concert halls to give special coloured effects. They are also used in traffic lights (Picture 5).



▶▶ (Picture 4) Stained glass is a filter. You can make filters that look like stained glass from tissue paper.



◀ (Picture 5) Traffic lights are examples of filters. Inside each light there is an ordinary white bulb. To get the red, amber and green lights, coloured filters are placed in front of each bulb.



Summary

- A material that lets through light is called transparent.
- A material that blocks light is called opaque.
- A material that lets through some light is called translucent.
- A material that lets through only light of one colour is called a filter.