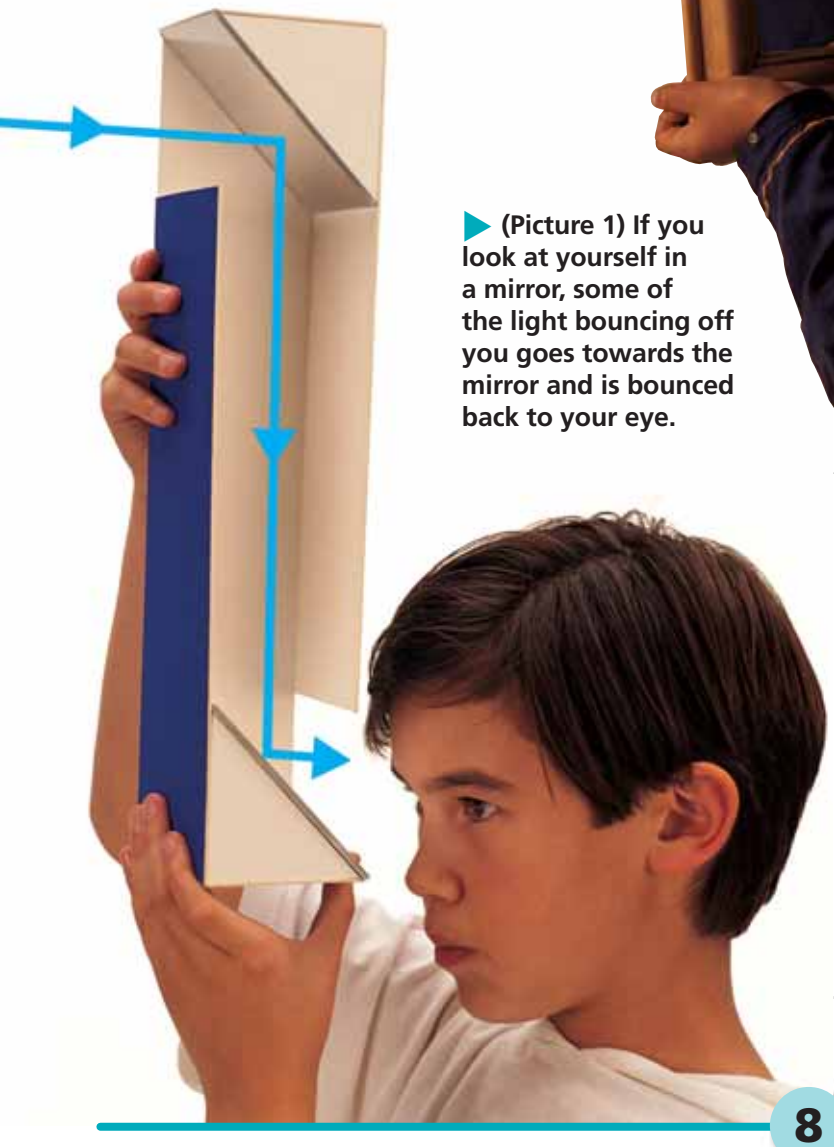
How flat mirrors work

A flat mirror is something with a shiny surface that bounces all light in the same direction.

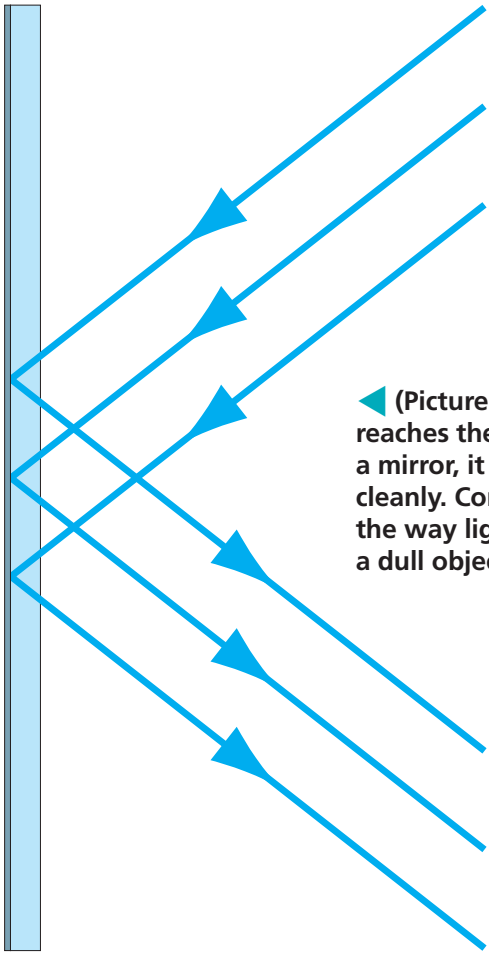
A mirror has a very flat, shiny surface that is very good at bouncing light. Most mirrors are made of glass that has a silvery coating on the back. When you face a flat mirror you can see yourself reflected very clearly (Picture 1). You also appear to be the same distance behind the mirror as you are in front of it. But everything you see is back to front.

▶ **(Picture 1) If you look at yourself in a mirror, some of the light bouncing off you goes towards the mirror and is bounced back to your eye.**

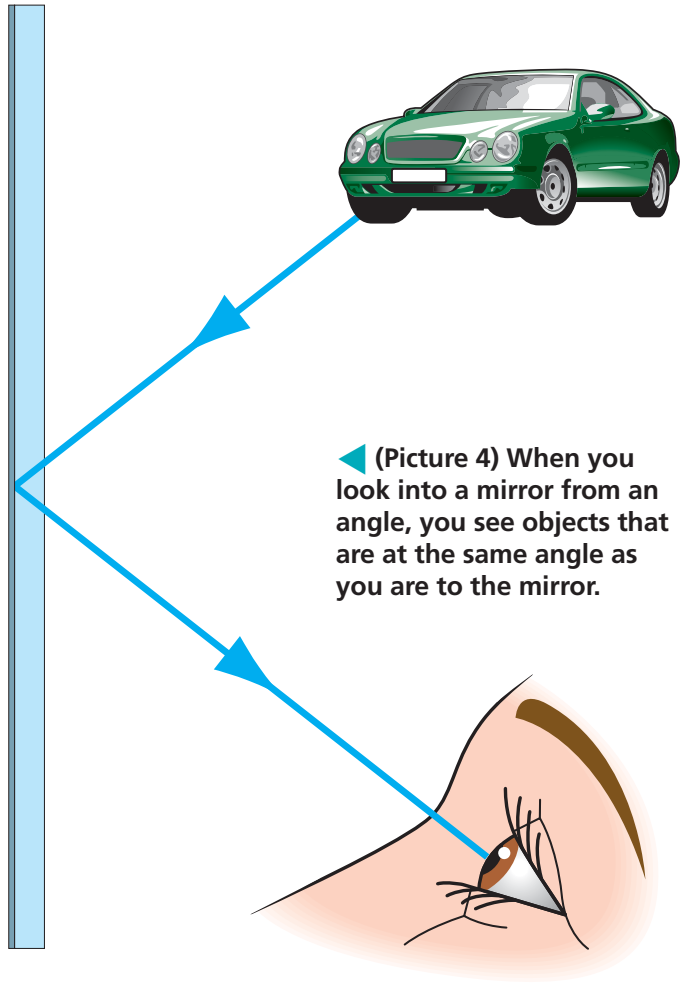
Quite often we use mirrors for looking at ourselves, but they can also be used for seeing things when our view is blocked. A periscope is an example of this (Picture 2).



◀ **(Picture 2) You can use two mirrors to make a periscope. People use periscopes to see over the heads of others in crowds, where it is impossible to get a direct view.**



◀ (Picture 3) When light reaches the flat surface of a mirror, it bounces off cleanly. Compare this to the way light bounces off a dull object (page 12).



◀ (Picture 4) When you look into a mirror from an angle, you see objects that are at the same angle as you are to the mirror.

How mirrors work

Light bounces off, or **REFLECTS** from, almost everything, but most objects are dull, not shiny like a mirror. A mirror has such a shiny surface that when light falls on it, the light rebounds cleanly (Picture 3). This means that we see a bright, clear reflection.

Angled mirrors

When you look into a mirror at an angle, you do not see yourself, but objects that are to one side of you (Picture 4). This is because the light is reflected from the mirror at the same angle as it arrives.

By turning a mirror at an angle, or looking at a mirror from the side, we can see things that would be out of our normal view. The wing mirrors on a car are examples of the way we use angled mirrors.

Summary

- **A mirror can be made of any shiny material.**
- **Light that reaches a mirror bounces off at the same angle as it arrived.**
- **You can use mirrors to look at yourself, and at things to one side or behind you.**