

## 34 light

### How to make a wooden mirror

Slovakia

An unusual way to illustrate total internal reflection

#### You will need...

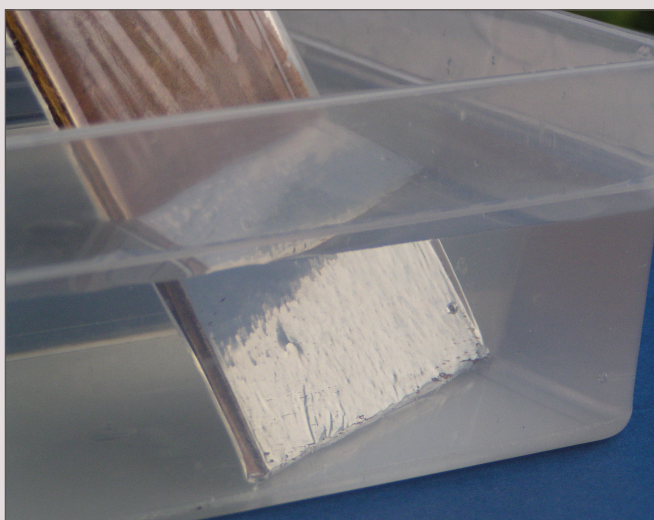
- ✓ a thin piece of wood
- ✓ a polythene pocket
- ✓ a container of water

#### Background

Total internal reflection can occur when a ray of light passes from water to air.

#### Follow these steps

- 1 Pose the question: how can you make a mirror from a piece of wood?
- 2 Place the wood in the polythene pocket and then into the water, making sure that no water is able to enter.
- 3 Vary the angle of the wood in the water. At a particular angle the part of the wood that is submerged will act like a mirror.



#### So what happened?

At a particular angle, total internal reflection occurs in the layer of air, between the wood and the polythene, so that it behaves like a mirror.

#### What next?

See what happens when you put your finger into a glass test tube and then lower it into a beaker of water.