

Ghostly hand

Location

First floor, Curiosity zone exhibition

In a nutshell

With this exhibit investigate how the reflection from a concave (cave-shaped) mirror is different from an everyday plane (flat) mirror. Can you shake hands with your own reflection?



What to do

Slowly move your hand towards the concave mirror, notice how the image of your hand seems to be in front of the mirror rather than behind as with a plane (flat) mirror. Try to shake hands with yourself.

Time Required

KS1 & KS2 2-3 minutes per student.

What's happening?

When you look into a plane (flat) mirror your reflection appears to be behind the mirror at the same distance as you are from the front of the mirror, this is called a virtual image. Reflections from a concave (cave-shaped) mirror are different as at certain distances from the mirror a real image is created. A real image is one that can be projected onto a screen as the light rays are focussed at a point in front of the mirror. As the image is in front of the mirror it appears you can touch it. The virtual image created using a plane (flat) mirror is the same way up as the object however the real image produced at certain distances using a concave mirror is inverted. The image produced using a concave mirror also changes in size greatly as the object's distance from the mirror changes. Using a plane (flat) mirror the image size always appears to match the size of the object with no magnification. As the object is moved closer to the concave mirror it acts more like a plane (flat) mirror with a virtual non-inverted image produced.

Curriculum links

KS1/2	Science - Working scientifically
	<ul style="list-style-type: none">- (Yr1 & Yr2) observing closely, using simple equipment- (Yr1 & Yr2) performing simple tests
	Science - Light
	<ul style="list-style-type: none">- (Yr3) recognise that they need light in order to see things and that dark is the absence of light- (Yr3) notice that light is reflected from surfaces- (Yr6) recognise that light appears to travel in straight lines- (Yr6) use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye- (Yr6) explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes
	English - Spoken language
	<ul style="list-style-type: none">- articulate and justify answers, arguments and opinions- give well-structured descriptions, explanations and narratives for different purposes, including for expressing feelings- use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas

Relates to:

Workshops & Theme Days	Shows	Trails	Other exhibits
<ul style="list-style-type: none">• Colourful Chemistry (KS2 upper)• Light and Shadow (KS2)	<ul style="list-style-type: none">• Light Fantastic (KS2)		<ul style="list-style-type: none">• Topsy turvy mirror• Focusing light• Spectra• Vein viewer• Infinity well

