

Nova's Stargazing Science: Mastering Light

Learning objective: To understand the properties of light, including how it travels, how shadows are formed, and how we see objects.

Use these flashcards to test your knowledge of light. Nova the owl suggests saying the definition aloud to help it stick in your memory!

What is a light source?

An object that produces its own light, such as the Sun, a lamp, or a burning candle.

In what path does light travel?

Light travels in straight lines, which we call light rays.

Define an opaque object.

An object that does not allow any light to pass through it, creating a dark shadow.

What is the difference between transparent and translucent?

Transparent materials allow light to pass through clearly, translucent materials allow some light through but scatter it so objects look blurred.

How do we see objects that are not light sources?

Light from a source hits the object and is reflected (bounces) into our eyes.

How is a shadow formed?

A shadow is formed when an opaque object blocks the path of light rays.

What happens when light hits a mirror?

The light is reflected at the same angle it hit the surface, which allows us to see an image.

What is refraction?

Refraction is the bending of light as it passes from one material into another, such as from air into water.

What is the visible spectrum?

The range of colours that make up white light, often seen in a rainbow (red, orange, yellow, green, blue, indigo, violet).

Why does the size of a shadow change?

The size of a shadow changes based on the distance between the light source and the object, or the object and the surface.

Explain the role of the pupil in the human eye.

The pupil is the black hole in the centre of the eye that changes size to control how much light enters.

If you are standing in a dark room with no light sources, why can you not see?

Because there is no light to reflect off objects and enter your eyes.