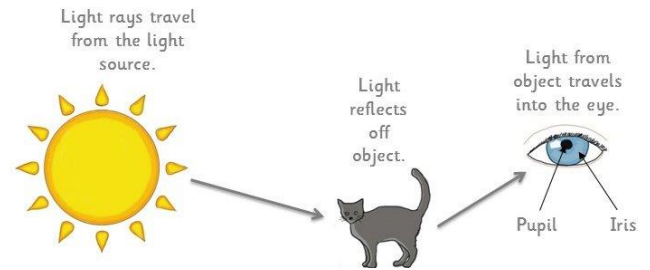# Light – knowledge organiser
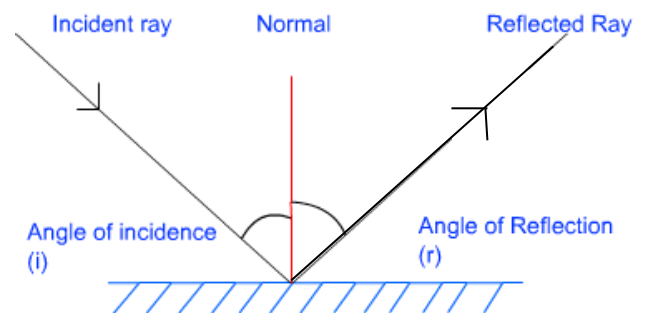
Key knowledge	
Why do we need light?	• We need light to be able to see things. Light waves travel out from sources of light in straight lines. These lines are often called rays or beams of light.
How do we see objects?	• The light ray is then reflected off the object and travels in a straight line to the girl's eye, enabling her to see the chair.
Light travels as a wave. But unlike sound waves, it does not need a medium to travel through. This means light can travel through a vacuum - a completely airless space.	
A shadow is always the same shape as the object that casts it. This is because when an opaque object is in the path of light travelling from a light source, it will block the light rays that hit it, while the rest of the light can continue travelling.	
Scientists we need to know about	
5 facts about Thomas Edison	• Thomas Edison was born February 11, 1847 • He was educated at home by his mum • When Edison was twelve, he started publishing and selling a newspaper to passengers on the train. • He worked extremely hard and registered 1,093 patents. A patent is a document granting an inventor sole rights to an invention. • In 1878, Edison invented the light bulb for which he is most famous for.

How we see

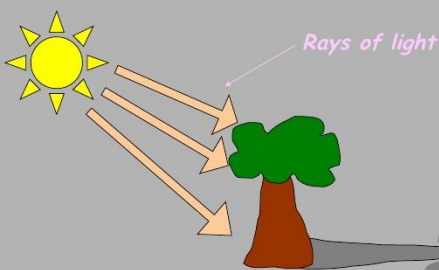iris gets bigger to let in as much light as possible. If there is no light at all, we cannot see anything.

Light rays travel from the light source.

Light reflects off object.

Light from object travels into the eye.

Pupil   Iris

Reflection

Incident ray   Normal   Reflected Ray

Angle of incidence (i)   Angle of Reflection (r)

Refraction

Shadows

Shadows are places where light is "blocked":

Rays of light

Key Vocabulary

light - A form of energy that travels in a wave rom a source.

light source - An object that makes its own light

reflection- Reflection is when light bounces off a surface, changing the direction of a ray of light.

refraction - This is when light bends as it passes from one medium to another. E.g Light bends when it moves from air into water.

visible spectrum - Light that is visible to the human eye. It is made up of a colour

shadow - An area of darkness where light has been blocked.

transparent - Describes objects that let light travel through them easily, meaning you can see through the object

translucent - Describes objects that let some light through, but scatters the light so we can't see through them properly.

opaque - Describes objects that do not let any light pass through them.