

# Year 6 Light

Match these words to their definitions.

light source

a ray of light that has bounced back after hitting a surface

reflection

an object that makes its own light

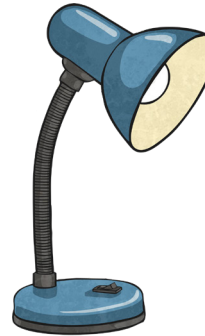
incident ray

when light bounces off a surface, changing the direction of a ray of light

reflected ray

a ray of light that hits a surface

Draw lines to show how the eye sees the book. Include arrows to show the direction of travel.



How does light travel?

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Write **true** or **false** next to these sentences.

We need light to be able to see things. \_\_\_\_\_

Light travels as a wave. \_\_\_\_\_

The straight lines that light travels in are called lasers. \_\_\_\_\_

Smooth surfaces reflect light in a specific direction. \_\_\_\_\_

Name **four** different light sources.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

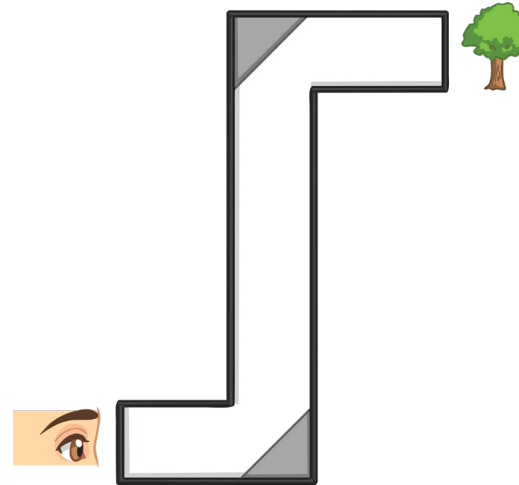
# Year 6 Light

The law of reflection says that the angle that a ray of light hits a surface (the angle of incidence) is equal to the angle that the ray of light bounces off a surface (the angle of reflection).

Draw a line showing the angle at which the ray of light bounces off the mirror, using the law of reflection.



Using arrows to show how light travels, explain how this periscope works to help people see objects higher than them.



Match these words to their definitions.

refraction

an area of darkness where light has been blocked

visible spectrum

when light bends as it passes from one medium to another

shadow

light that is visible to the human eye

Write the term for each of the definitions.

An object that lets light travel through it easily.

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An object that lets some light through but scatters it.

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An object that does not let any light pass through it.

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# Year 6 Light

Explain why the spoon appears to be bent.

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Circle the colours that are shown when a prism separates a beam of light.

- |        |        |        |        |
|--------|--------|--------|--------|
| red    | pink   | violet | black  |
| orange | indigo | white  | yellow |
| green  | grey   | blue   |        |

Explain how shadows are formed.

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Fill in the gaps by selecting the correct words from the brackets.

A shadow is bigger when an object is

\_\_\_\_\_

(closer to/further away from) a light source. This is because the object blocks

\_\_\_\_\_

(more/less) of the light.

Write **true** or **false** after each sentence.

Light travels faster than sound.

\_\_\_\_\_

The moon is a light source.

\_\_\_\_\_

Light can't travel through a vacuum (an airless space).

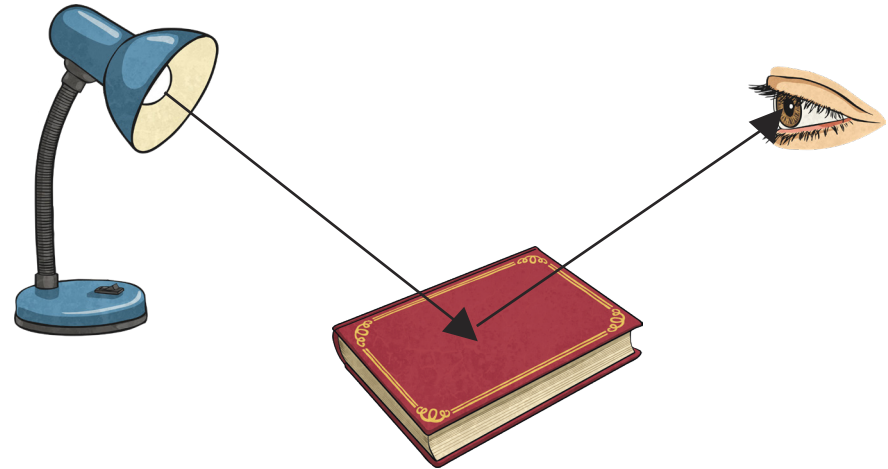
\_\_\_\_\_

# Year 6 Light Answers

Match these words to their definitions.

light source	a ray of light that has bounced back after hitting a surface
reflection	an object that makes its own light
incident ray	when light bounces off a surface, changing the direction of a ray of light
reflected ray	a ray of light that hits a surface

Draw lines to show how the eye sees the book. Include arrows to show the direction of travel.



How does light travel?

**Light travels as a wave, in a straight line. Unlike waves of water or sound waves, it does not need a medium to travel through. This means light can travel through a vacuum - a completely airless space.**

Write **true** or **false** next to these sentences.

We need light to be able to see things. **true**

Light travels as a wave. **true**

The straight lines that light travels in are called lasers. **false**

Smooth surfaces reflect light in a specific direction. **true**

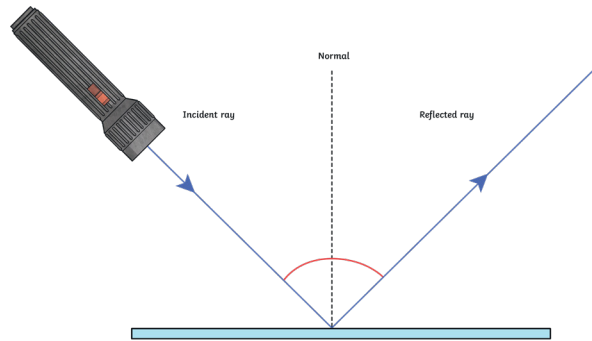
Name **four** different light sources.

**Accept any sources of light, such as the sun, fire, candles and lamps. Do not accept the moon.**

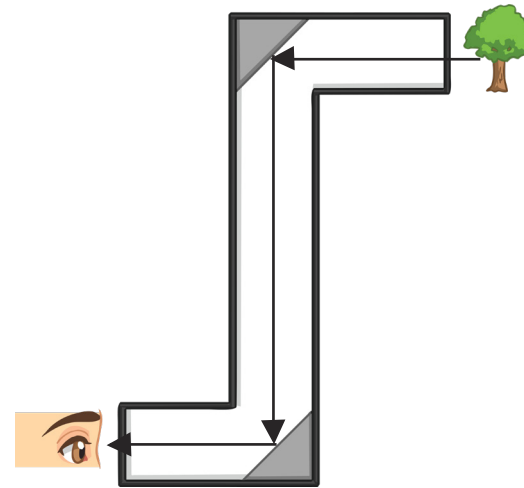
# Year 6 Light Answers

The law of reflection says that the angle that a ray of light hits a surface (the angle of incidence) is equal to the angle that the ray of light bounces off a surface (the angle of reflection).

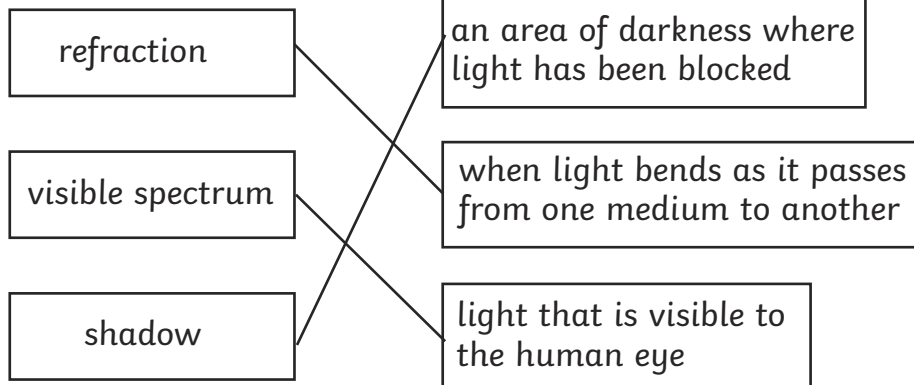
Draw a line showing the angle at which the ray of light bounces off the mirror, using the law of reflection.



Using arrows to show how light travels, explain how this periscope works to help people see objects higher than them.



Match these words to their definitions.



Write the term for each of the definitions.

An object that lets light travel through it easily.

transparent

An object that lets some light through but scatters it.

translucent

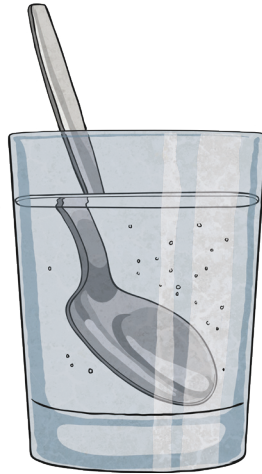
An object that does not let any light pass through it.

opaque

# Year 6 Light Answers

Explain why the spoon appears to be bent.

**Light bends when it moves from air to water, which is called refraction. This is why the spoon looks as though it is bent.**



Circle the colours that are shown when a prism separates a beam of light.

red

pink

violet

black

orange

indigo

white

yellow

green

grey

blue

Explain how shadows are formed.

**Shadows are formed when an opaque object blocks the light. A shadow is always the same shape as the object that casts it. This is because the opaque object is in the path of light travelling from a light source, blocking the light rays that hit it, while the other rays can continue travelling.**

Fill in the gaps by selecting the correct words from the brackets.

A shadow is bigger when an object is **closer to** \_\_\_\_\_

(closer to/further away from) a light source. This is because the object blocks **more** \_\_\_\_\_

(more/less) of the light.

Write **true** or **false** after each sentence.

Light travels faster than sound.

**true** \_\_\_\_\_

The moon is a light source.

**false** \_\_\_\_\_

Light can't travel through a vacuum (an airless space).

**false** \_\_\_\_\_