Energy 2 - Light

Lesson 1

Reflection of Light

Reflection of Light

Learning Intention:

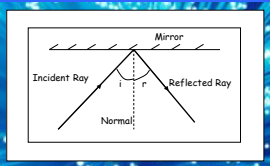
At the end of this lesson, I will understand what happens to light when it is reflected and how this is applied to everyday life.

Reflection of Light

Why study reflection

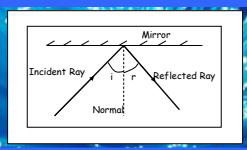
Reflection has loads of applications as we will see later, many applications are related to road safety. Can you think where?

Reflection of Light



When light reflects off a mirror, we can study what happens to it. However, we need to understand some terms first of all.

Reflection of Light



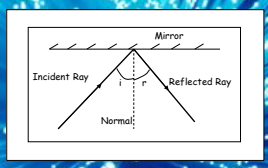
The **incident ray** is the beam of light that is being shone on to a mirror.

The **reflected ray** is the beam of light that has bounced off a mirror.

The **normal** is an imaginary line that is drawn at a right angle from a reflecting surface at the point where the incident ray strikes the mirror.

Reflection of Light

Read



The **angle of incidence** (i) is the angle between the incident ray and the normal.

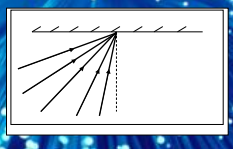
The **angle of reflection** (r) is the angle between the reflected ray and the normal.

Reflection of Light

Experiment

Follow the link below to find out how to carry out this experiment to find out the law of reflection.

http://www.youtube.com/watch?v=q_u348D5g3s



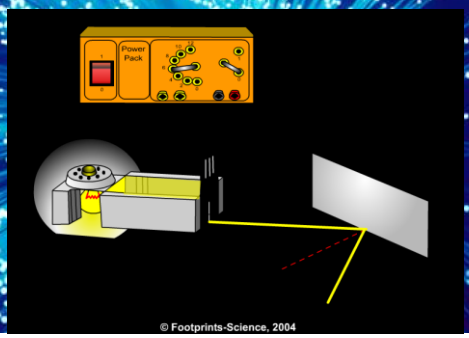
Reflection of Light

Experiment

Write out a brief scientific report in your jotter. This guide should help you:

Aim: What are you trying to find out?
Method: How are you going to carry out the experiment? A labelled diagram is needed.
Hypothesis: What do you think will happen?
At this point, you are ready to start the experiment.
Results: A table of results and a graph is often required.
Conclusion: What did you find out? Was your hypothesis correct?

Reflection of Light



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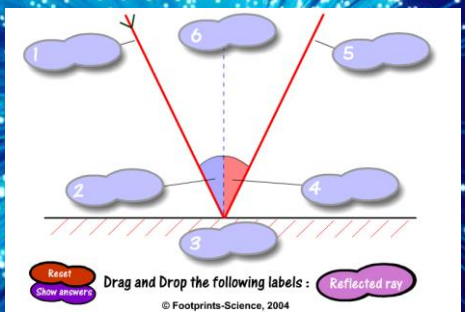

Reflection of Light

When light 1 off a 2 the 3 of incidence always 4 the angle of 5

We see objects because they reflect light into our 6

Reset
Show answers
Drag and Drop the following labels : eyes
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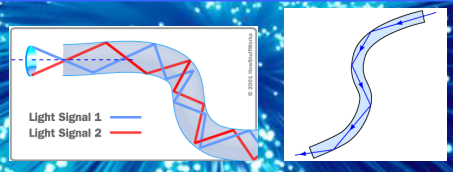
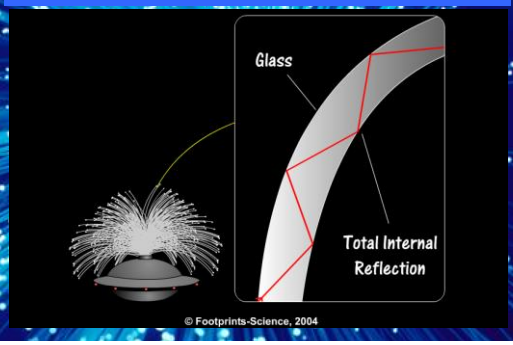
Reflection of Light

Read through pages 6 & 7 in your pupil sheets and then answer the questions about uses of reflection in every day life.



http://communication.howstuffworks.com/fiber-optic-communications/fiber-optic.htm

Reflection of Light



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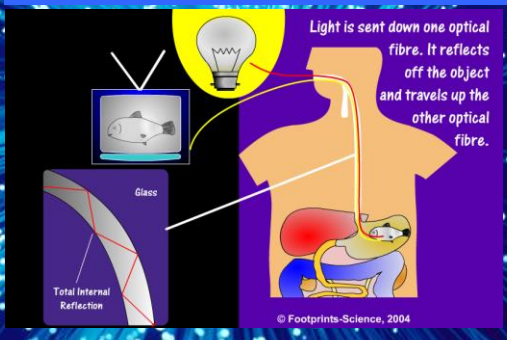


Reflection of Light

Questions

1. How are fibre optics used in everyday life?

2. Copy and complete this diagram, to show how a light signal travels along an optical fibre.

3. Give three advantages of using fibre optics over copper wires to transmit signals.

Reflection of Light

Questions

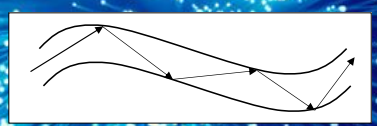
1. How are fibre optics used in everyday life?

Telephone systems, Internet and cable television.

Reflection of Light

Questions

2. Copy and complete this diagram, to show how a light signal travels along an optical fibre.



Reflection of Light

Questions

3. Give three advantages of using fibre optics over copper wires to transmit signals.

Less expensive
Thinner
Able to carry more information
Less interference
Lighter

Use of Convex mirrors

Convex mirrors increase the field of view






…and for you farmers!

Reflection of Light

Learning Intention:

I understand what happens to light when it is reflected and how this is applied to everyday life.