

How does light travel?

Name _____ Date _____

Predict (1)

If the holes are lined up straight then (Here the students predict what might happen, e.g. the light will travel through the holes to the book and shine on the book.)
because (Here students give the reason for their prediction. At the moment this does not have to be scientific, e.g. light travels in a straight line through the holes.)

Observe

What did you observe happening when the light was shone through the first card?
(Include a labelled diagram).

What did you observe when the string was threaded through the holes?

Predict (2)

If the holes are not in a straight line then the light will be not reach the book because it will be blocked by the other cards because light travels in a straight line and does not curve around objects.

Observe

What did you **observe** happening when the light was shone through the first card?
(Include a labelled diagram.)

What did you **observe** when the string was threaded through the holes?

Explain what your observations tell you about how light travels.

Explain

For example:

We observed that when the holes were lined up straight the light travelled through the holes until it hit the book, just as we predicted. (This is important to include to show students that they need to refer back to their predictions in their explanations.) The string was also in a straight line. When the holes were not lined up, the light did not reach the book because it was blocked by the cards. This is also what we predicted. This shows that light does travel in a straight line because the light could only reach the book when the holes were lined up straight.

Teachers Notes

Ray arrows/diagrams are used to show the path of light. The most important thing to remember is that they show the path of light **from** a source, preferably to the eye. That means the arrow is pointed towards the eye and not away from it. With further study of light these diagrams become more complex, but for Year 5 students we stay with simple ray diagrams.

Another important convention to take note of is that when light is reflected off an object (as when we see things or showing how a pinhole camera works) there are only two arrows, each coming from the extreme points of the object (see below). It is important to note that this is to make the diagram easier to read. Obviously there are many rays of light reflecting off an object or even being emanated from a light source, but it is impractical to draw all of these.