

Practical Title: Hit the target

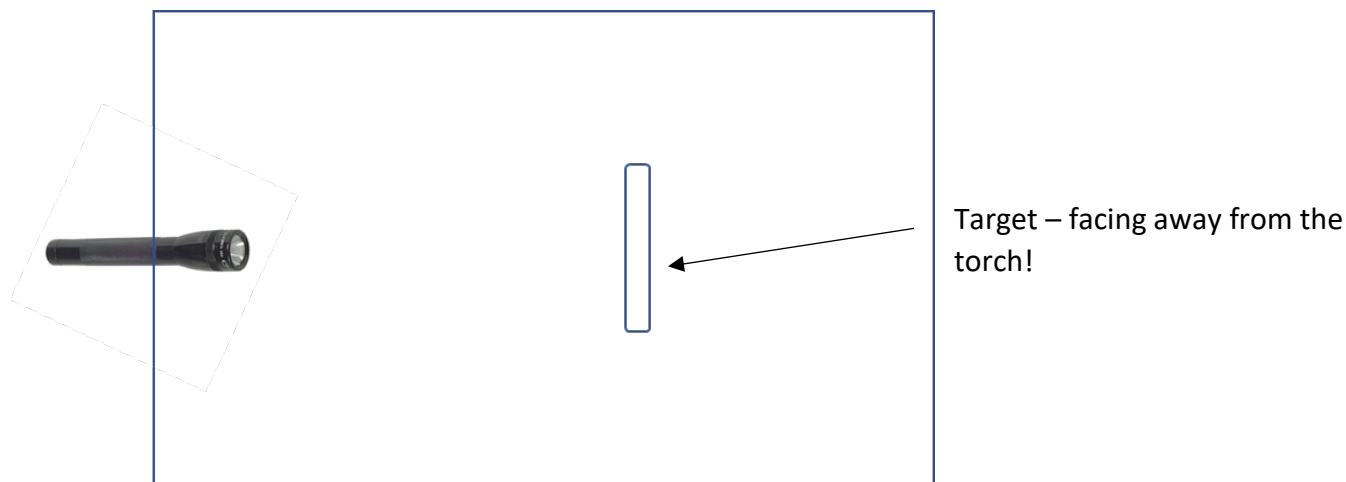
Focus and Principles: A practical challenge to reinforce children's understanding that light travels in straight lines and is reflected in a predictable way from mirrors.

Equipment: Each group needs:

- A torch that can provide a sharp, narrow beam of light
- 5 small flat mirrors **but keep these hidden so that the pupils will think about what they need and will have to ask for them if they so wish**
- 1 roll of coloured electrician's tape and 1 pair scissors – or a mark can be made on the paper with a thick coloured marker pen (cheaper) to show the position of the torch – the torch must not be moved from its fixed position
- 12 wooden pegs (with springs) – 2 to hold up the target and the others for the mirrors
- 3 sheets of flip chart paper
- 1 target printed onto 10 cm x 10 cm sheet of card – thick card (so the light does not shine through)

Suggested pupil group size: 4-ish

Further instructions: Place a piece of white flip chart paper on each table. Mark on one side of the paper the position for the torch – using either tape or a marker pen.



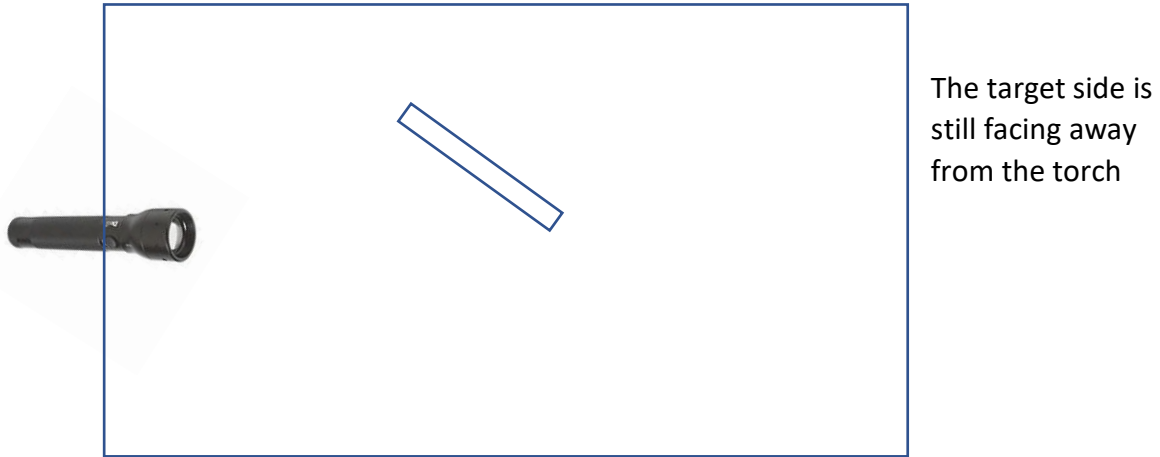
Place the target as shown, with the blank side of the card facing the torch and the target side facing away from the torch. The room needs to be as dark as possible.

The challenge for the pupils is to hit the centre of the target with the beam of light.

Do not prompt them but they can use mirrors to bounce the light in such a way that the target is hit. They can then draw the path of the light on the paper and add in arrows to show the direction. Remove the mirrors and torches (ask them to draw their positions first

though) and then you can see the path of the light clearly. This can then be their record of their work.

This practical is problem solving and is a great way of reinforcing the pupils' understanding that light travels in straight lines. Further challenge can be introduced by changing the position of the target, e.g.



Possible additional challenge: each group of pupils could then draw a maze on the paper and give it to another group who have to arrange the mirrors so that the light follows the path of the maze.

Health & Safety:

Teachers always need to risk assess practical activities for their children and defer to their health and safety advisor for the most up-to-date source of health and safety guidance.

This training cannot be relied upon as source of health & safety guidance.