

Week commencing Monday 15th June 2020

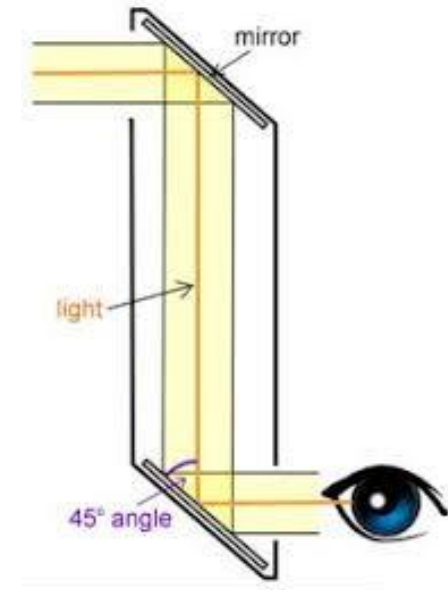
LO: To design and build your own periscope

What is a periscope?

A periscope is an instrument people use to look at things from a hidden position. The device has a long tube with parallel mirrors situated at both ends at a 45-degree angle.

What was it used for?

The main purpose of the development of the periscope was to provide a way to see above the surface while still above ground, on the water's surface or underground.



James Dyson Foundation: <https://www.youtube.com/watch?v=ra1HmKMxmGY>
Make a periscope <https://www.youtube.com/watch?v=uRa5l30Vhj0>

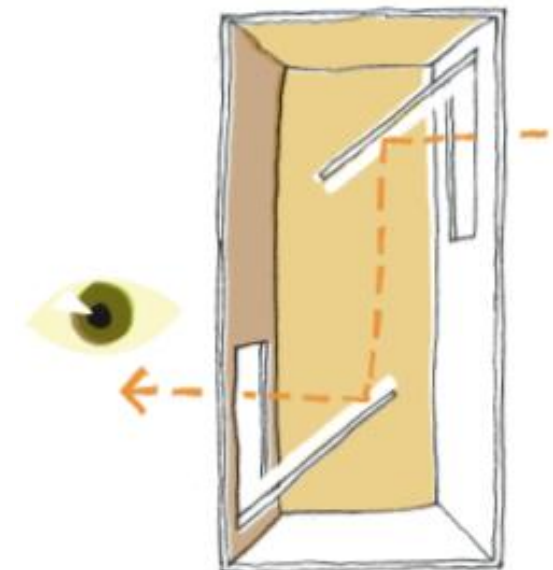
Task: You are going to design and build your own periscope to see around corners. Follow the instructions on the sheet or watch the video link above. **You can record the outcome of your task however you like e.g. pictures, photos, video, writing, tables, diagrams.**

The method

1. Remove the box lid.
2. Place one mirror on the side and near the bottom of the shoebox and trace around it. Place the second mirror at the opposite end of the shoebox and trace around that too. [L] [SEP]
3. Cut out the traced sections to make a door flap. Slant the doors at 45-degree angles. [L] [SEP]
4. Tape the mirrors onto the slanted doors. [L] [SEP]
5. Adjust the mirrors. Keep moving them into place until you can see out of the top hole when you look in through the bottom hole. [L] [SEP]
6. Seal the mirrors into place using PVA glue. [L] [SEP]
7. Glue the shoebox lid back on.

You will need:

- Showbox
- Two small mirrors
- A pencil
- Scissors
- Tape
- PVA glue



Findings:

What did you discover?

Did your periscope work?

How were you able to use your periscope?

What things didn't work?

If you did this again, what changes would you make?

How does it work?

Light reflects away from a mirror at the same angle that it hits the mirror. In your periscope, light hits the top mirror at a 45 degree angle and reflects away at the same angle, which bounces it down to the bottom mirror. The reflected light hits the second mirror at a 45 degree angle and reflects away at the same angle, into your eye.

