

Periscope Resource



Historical Context

On the 21st November 1918 at the end of the First World War, the first 20 German U-boats surrendered to the allies, and were escorted into Harwich Port.

Over the next few days around 122 U-boats and associated craft of the fleet were brought into the port. This was a significant event marking the end of the war.

The German U-boats had a huge impact on food coming into Britain between 1914-18. 80% of wheat, 40% of flour and almost all sugar was being imported from Australia, America, Brazil, and Germany pre-war. The German Navy set in a blockade to stop imported getting to Britain, and targeted merchant shipping. Between February and April 1917, U-boats had sunk more than 500 merchant ships, meaning food rationing was vital for Britain to survive. Periscopes were the eyes of a submarine. They were invented and developed solely for the purpose of providing a means to view the surface without fear of being seen, and are still used in the Navy today alongside modern technology.

Curriculum links

- History
- Science
- Design & Technology
- Geography

The Science

- A periscope is a simple device that allows someone to see over walls or round corners. Light that travels from a source is **reflected** off the mirrors and into the viewer's eye.
- When a ray of light hits a plane mirror the angle of reflection is **equal to the angle of incidence**, therefore if a ray of light hits the mirror at 45° it will be reflected at 45° .

Make a Periscope



Materials

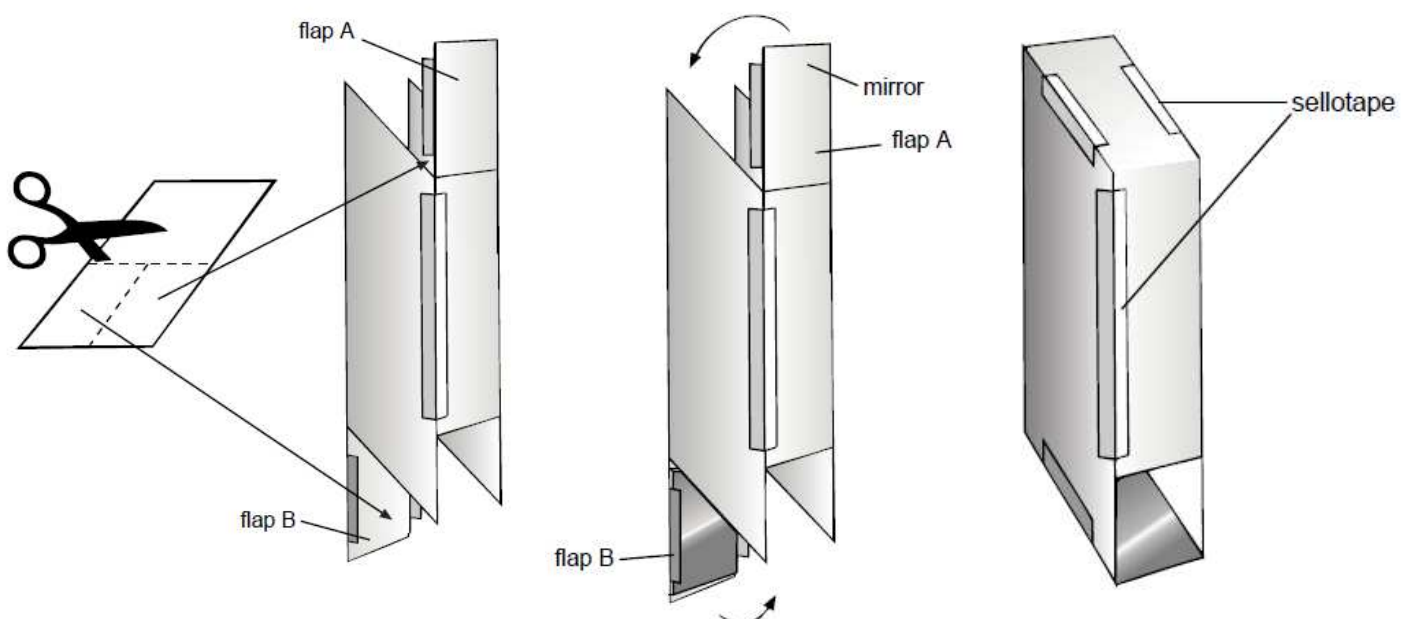
- Periscope template
- Large thick card
- Scissors
- Glue
- Tape
- Mirrors to cut to size

Making

1. Cut out the periscope template and copy onto card.
2. Cut out the cut out the card copy, and fold along the main dotted long lines.
3. Use Sellotape to hold the outside tab to the other side to make a square tube.
4. Cut mirrors to fit flaps A and B, and peel off the protective plastic coating to show the reflective mirror.
5. Glue the mirrors to the inside of flaps A and B.
6. Fix flaps A and B to the supporting tabs so that they are at 45° to the body of the periscope.

Extension

- Try out your periscope over a wall or around a corner.
- Make a longer periscope by extending the template body.
- Where else were they used during World War One? Where are periscopes used today?



Periscope Template

