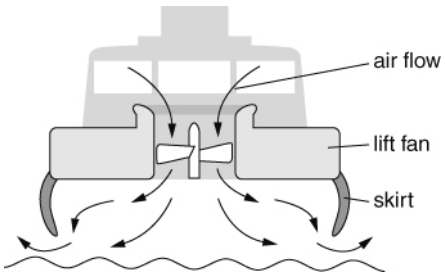
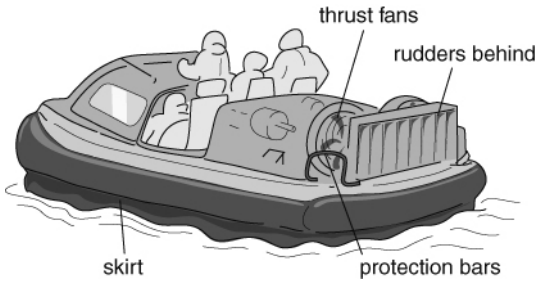
A hovercraft does not need a road or tracks because it rests on a cushion of air that spreads its weight out. It can move over bumpy fields, mud, sand, snow or water, but it can't be driven over big waves or very rough ground. Technically, a hovercraft flies, but as it can never get more than a few centimetres above the ground, people tend to think of a hovercraft as something between a land vehicle and a boat.

Hovercraft have a lift fan, which pushes air down beneath it. This air is held beneath the vehicle by a flexible skirt, and escapes from around the edges.

Hovercraft are propelled forwards by large fans. These are a bit like the propellers on some aeroplanes, but they are mounted at the back. There are rudders behind the fans that are used to steer the hovercraft. These change the direction of the air being pushed out of the fan.





A hovercraft used by the Royal National Lifeboat Institution. The RNLI use hovercraft in places like Morecambe Bay, where there are large areas of mud and dangerous quicksand at low tide.

1 What will happen if the lift fan stops working?

2 Why is it much harder to pull a hovercraft along when its lift fans are switched off than when they are switched on?

3 The axles of the lift fans and propellers need to be greased. Explain why they need to be greased.

4 Most boats are propelled by small propellers in the water. Most land vehicles are moved by making their wheels turn.

a Suggest why hovercraft need to use fans to make them move.

b Suggest why it is much harder to make a hovercraft change direction than a car.

5 **a** Why does the material for the skirt need to be flexible?

b What might happen if it was too flexible?

6 An aeroplane's propellers do not have protection bars around them, but the thrust fans on hovercraft are always put in metal cages. Suggest as many reasons for these differences as you can.

7 Optional: Find out why the RNLI use hovercraft instead of lifeboats in places like Morecambe Bay.

I can...

- describe how a hovercraft works
- explain some of the features of the design of a hovercraft.

The RNLI is a lifesaving charity, independent of Government.