

ENGINEERING  
CHALLENGE

07

# CARDBOARD BOAT



THE  
JAMES  
DYSON  
FOUNDATION

# CARDBOARD BOAT

## ENGINEERING CHALLENGE 07

Designed by Ben,  
Design engineer at Dyson

### The brief

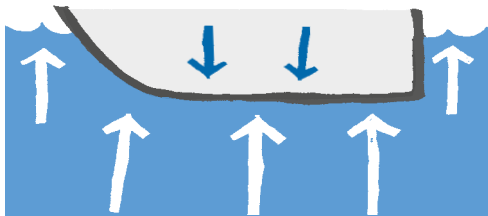
Construct a boat to support up to 1/2lb without sinking.

### The method

1. Draw out the basic shape of your boat on the cardboard, and cut it out.
2. Create walls for your boat from more cardboard.
3. Stick the bottom of the boat and the walls together with tape or glue.
4. Back everything with wax paper or foil – be careful not to leave any gaps where the water can get in.
5. Place the 1/2lb weight in the boat.
6. Set your boat afloat.

### Top tip

Think about stability. Some shapes are more stable than others when a load is applied.



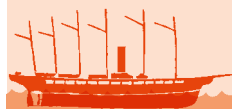
### How does it work?

When a boat is placed in water, it displaces an amount of water equal to the boat's weight – as long as the object is less dense than the water, it will float.

### Materials

- Cardboard
- Wax paper
- Tape or glue
- Rubber bands
- Foil
- Scissors  
(with adult supervision)
- Craft knives  
(with adult supervision)
- A 1/2lb weight

### Design icons



The SS Great Britain was the first iron steamer to cross the Atlantic. Designed by Isambard Kingdom Brunel in 1845, it was the first ship to combine an iron body with a screw propeller.