

Dynamics and Statics

Boats: 4 Steam boat

(Czech Republic)

Background

A lit candle will heat up water in the pipes, creating a brief burst of steam that is expelled through the pipes in the rear of the boat. The force of the expanding gas (steam) pushes the boat forward.

You will need:

- ✓ Sardine can
- ✓ Copper piping
- ✓ Metal piping, hacksaw, drill
- ✓ Syringe
- ✓ Hot glue gun
- ✓ Tea light and matches

Follow these steps:

1. Shape the copper wire around a metal pipe into a coil.
2. Use a drill to drill two holes in bottom of the sardine can, right at the back.
3. Push the ends of the coil through the holes.
4. Seal the holes with glue from the hot glue gun.
5. Use a syringe to fill one end of the pipe with water. Continue to fill this pipe with water until water pours from the other end of the pipe.
6. Float the boat on the water.
7. Light a tea light under the metal coil.

So what happened?

As the water in the metal coil heats, steam will be expelled through the pipes in the rear of the boat. The force of the expanding gas will cause the boat to speed forward in the water.

What next?

Try making different shaped boats or boats from different materials that work on this principle.

