

Dynamics and Statics

Convection current spinning wheel

A design challenge

Background

Convection currents

You will need...

- ✓ Strong copper wire,
- ✓ aluminium cake tin or similar container
- ✓ pin
- ✓ tea light candle.

Follow these steps

1. Bend the copper wire into a shape that will support the tea light.
2. Glue the pin to the top of the copper wire.
3. Cut the aluminium cake tin into a circle and then cut into the circle at an angle as in the picture.
4. Bend each edge slightly.
5. Balance the centre of the aluminium cake tin on top of the pin so that it is free to rotate.
6. Light a candle and place it underneath.

So what happened?

As the hot air rises the cake tin spins.

What next?

1. Change the design so the the wheel turns more quickly (or slowly).
2. What is the simplest shape that will turn?

