

Forces

The amazing swinging coat hanger and coin

Balance and centripetal force

You will need....

- ✓ a wire coat hanger
- ✓ a suitable large coin; €2 works well
- ✓ a file
- ✓ a little time and patience

Background:

This is a fun way to demonstrate circular motion using every day items.

The same forces are experienced by a sock in washing machine causing it to stick to the side of the rotating drum.

Follow these steps:

1. Keeping the hanger flat on a surface, carefully pull it out so that it forms a square.
2. File the end of the hook flat and bend it so that it points towards the opposite corner of the square.
3. Place the coin on the hook.
4. With one finger at the top carefully start to swing the hanger.

So what happened?

Amazingly, the centripetal force keeps the coin in place while the hanger swings.

What next?

1. With practise it is possible to add more than one coin and to stop the swinging hanger with the coin in place.
2. Investigate other instances of centripetal force e.g. swinging a bucket of water.

