

Magical Cup Drop!

Great science often looks like magic and it's time to learn a 'magic' trick that you can use to impress your friends! - Hopefully you'll be able to tell them how it works too!

WARNING: - Don't use anything too valuable! It takes a little practice to get this one working just right!

What do I need:

- A glass
- An egg (for the brave or a small ball or water balloon for the more cautious)
- A flat lid
- Another toilet roll

How do I do it?

STEP 1 - Half fill your glass with water - so it's nice and heavy and a soft landing for your falling balloon!

STEP 2 - Stack the glass, lid, toilet roll and water balloon as shown.

STEP 3 - Pull the lid out to the side in one fast but smooth motion. This may take a bit of practice.

STEP 4 - Watch your friends gasp in amazement as the water balloon falls straight down into the water with a splash (but doesn't burst!)

What's going on?

This one is all to do with Newton's law of inertia! That's just a law that says that an object will remain at rest unless acted upon by another force. By pulling the lid away quickly very little of the force is transferred to the balloon and so it doesn't move to the side. Then gravity does its work and pulls the balloon down into the cup with a splash!

More Fun Please - Experiment like a real scientist!

- First, practise with a water balloon to get the hang of it!
- Then, move up to a real egg and impress your friends!
- Finally, use a water balloon again and experiment by filling up with lots of water (so it's really big and heavy) and then use just a little water so it's small and light.

