Inertia - Why do you have to wear a seatbelt?

Fact

- You have to wear a seatbelt, by law, to help protect you in the case of an accident.
- When your car stops suddenly inertia is the force that keeps your body moving. If you don't wear a seatbelt or something to hold you in place your body can be thrown around the car or even out onto the road.
- The faster the car is going when it stops the stronger the force of inertia working to keep your body going forward!

Do you know

Inertia is also the force that keeps still things still. This means that things are hard to get moving.
Next time someone's pushing you on a swing get them to start you off by pushing the swing not you. Do you feel the force holding you back as the swing launches off into the air – that's inertia. You can really feel it when you're sitting on a roller coaster and it starts its run.

Experiments you can do

Experiment with inertia.
What you need:
A skateboard or a ride on toy.
Some small toys that won't break when they fall.

What you do:
Find a place outside that's well away from the road. Maybe you can try this at school in the playground. You need something for the skateboard or ride on toy to "crash" into, a wall or kerb is good for this. Or have someone stop it with their hands or feet.
Place a toy on the skateboard then give it a good push towards the "crash" point. Watch what happens to the toy. Does it stay in the same place when you push the skateboard or does it move? What happens when the skateboard "crashes"?

Other Investigations

Magic Inertia
What you need:
A plastic cup.
A playing card
A 50 cent coin

What you do:
Put the coin down on the table and flick it with your finger. What happens to it? It goes flying right? Right. Now place the playing card over the top of the plastic cup to cover it. Put the coin on top. You're going to flick the card off the plastic cup to find out what happens to the coin but take a guess now. What will happen to the coin? Will it fly off in the same direction as the card? If not what will happen to it? Then try the experiment and see. This is inertia at work.

Use what you have learnt about inertia to describe what happens to you when you travel in a lift. What does your stomach feel like.