

Science- LO: I am learning about the force of gravity

(This is the start of a new science unit about forces and should take approximately 90 minutes)



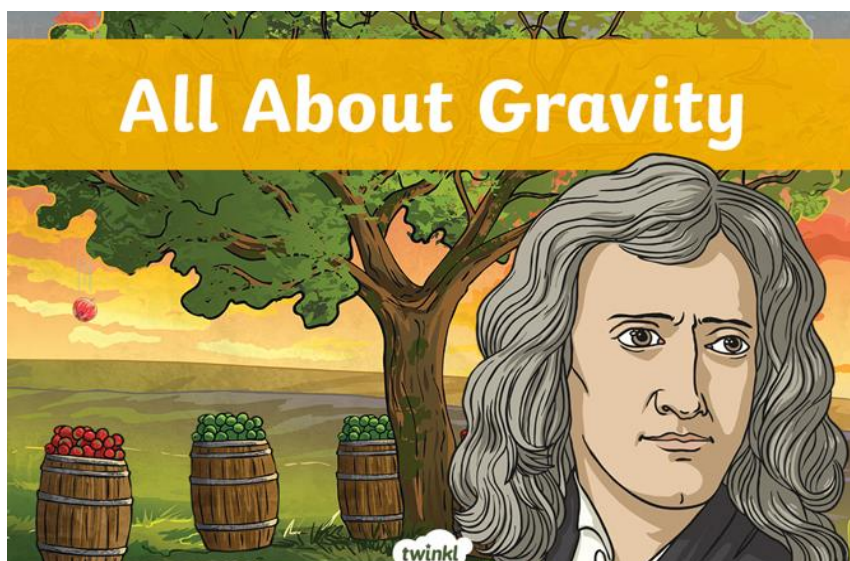
Support:

<https://www.bbc.co.uk/bitesize/topics/zf66fg8>

<https://www.bbc.co.uk/bitesize/topics/zf66fg8/articles/zqbm3k7>

<https://www.theschoolrun.com/homework-help/gravity>

- 1) Look through and discuss the 'Science - Gravity support' document on the Beechwood Website.



2) Watch this gravity experiment and if you are able to recreate it at home.

<https://thedadlab.com/experiment-with-raw-eggs/>



Now draw a series of pictures (a bit like a comic strip) of this experiment and see if you can explain scientifically what is happening in this experiment (remember we are focusing on gravity).

Experiment support for parents



What's going on?

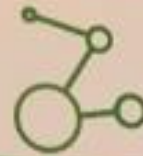
You think the eggs should be knocked sideways with the plate, right? But all objects have this property called inertia, which means that they resist changing the way they're moving. Think of a heavy weight hanging from a rope – a punchbag or a swing, say. You've got to push hard to get it to move. That 'reluctance' is its inertia.

The inertia of the eggs means that, when the plate is pushed sideways and the bottom of the toilet tube is dragged with it, the egg at the top 'wants' to stay put – so the tube topples, and the egg doesn't move sideways too. But now there's nothing holding the egg up! And so gravity pulls it down into the water directly below.

Why not try...

Before beginning a journey place a shoe box in the back of a car and place a small ball in the centre of it. When the car starts moving, see how the ball starts moving too. The ball is actually trying to stay in the same place.

You can also stack a pile of magazines and try to pull one out from the middle quickly.



Clever clogs facts

Inertia doesn't just mean that, when something is standing still then it's not easy to get it moving. It also works the other way round: once something is moving, it's not easy to stop it. That's why, when a train that you're standing on stops, your body keeps moving forward a bit. So you have to hold on to the handrail if you don't want to fall over. If a train stops really suddenly, all the stuff on a table in the carriage – books, drinks, sandwiches – might fly forward. Oops!

Inertia doesn't, then, mean a resistance to movement. It means a resistance to change in movement. Change is always a bit tough, right?



Inertia can keep a car moving in a tyre skid even if the wheels stop turning.