Do theme parks employ scientists?

St. Peter's CE Primary Academy

Forces Y5

Key scientist – LaMarcus Thompson

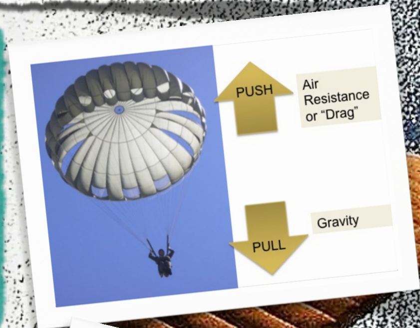
LaMarcus Thompson was a scientist who used his knowledge of gravity and forces to invent the first ever rollercoaster, which he called Gravity Pleasure Switchback Railway. He is known as the father of the American rollercoaster.

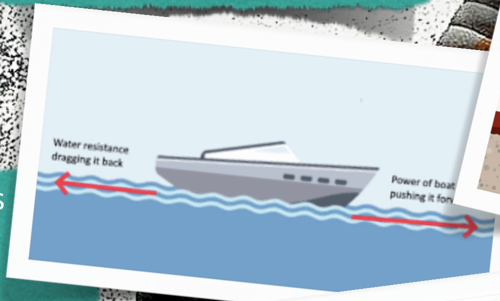
Key learning

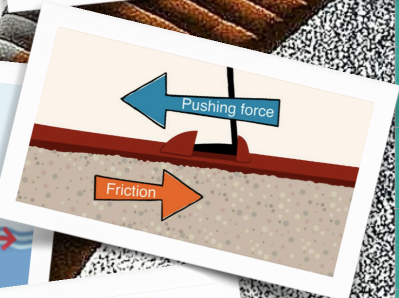
- Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
- Identify the effects of air resistance, water resistance and friction, that act between moving surfaces
- Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect

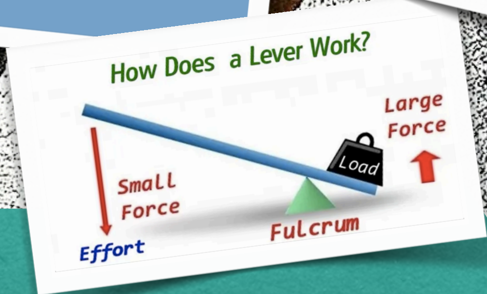
Scientific enquiry types

- Comparative and fair testing
- Pattern seeking









Working scientifically concepts

- Making predictions
- Setting up tests
- Recording data

Forces – Our Learning Journey

Year 3/4

- Compare how things move on different surfaces
- Magnets and magnetic forces
- Comparing and grouping materials based on whether they are attracted to a magnet

Year 5/6

- Explain and understand gravity
- Identify the effects of air resistance, water resistance and friction
- Mechanisms including levers, pulleys and gears

Key vocabulary

balanced forces	Forces that are the same size but acting in opposite directions
buoyant force (water resistance)	A type of force that uses friction to slow things down that are moving through water
drag (air resistance)	A type of friction between air and another material
force	A push or pull that causes things to move, change speed or change their shape
friction	A force which is the resistance of motion when when object rubs against another
fulcrum	The place where a lever pivots
gears	Wheels with teeth that slot together to increase the power of a turning force
gravity	A force that pulls anything with mass towards the centre of the earth or another object
lever	A long sturdy body that rests on a support called a fulcrum in order to lift a load
Newton	The unit of measure used to measure force
normal force	The force that surfaces exert to prevent solid objects from passing through each other
pulley	A machine consisting of a wheel (or multiple wheels) with groves and a cord used to increase the amount of weight that can be lifted
unbalanced forces	Forces that are not the same size acting in opposite directions, causing a change of motion

Ethics

How can our understanding of forces help us to save energy?