

# My Knowledge Journal



## Forces

Name: \_\_\_\_\_

## Pre Knowledge Quiz

Q1. What was Isaac Newton famous for?

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Q2. What is the name of the force which helps boats to float?

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Q3. What is the name of the force which slows a parachute down as it falls to Earth?

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Q4. Name the force that is slowing the bicycle down in this picture.

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# Forces Knowledge Organiser

## What should I already know?

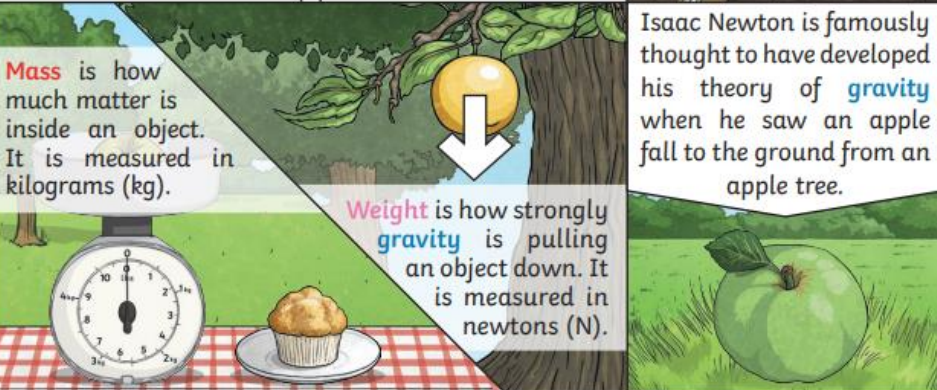
- Pushes and pulls are forces, and magnets use these forces.
- How things move on different surfaces

**Key Knowledge**

Forces		Isaac Newton
start to move.	stop moving.	
change direction.	move faster.	
change its shape.	move more slowly.	
<b>Forces can make an object...</b>		

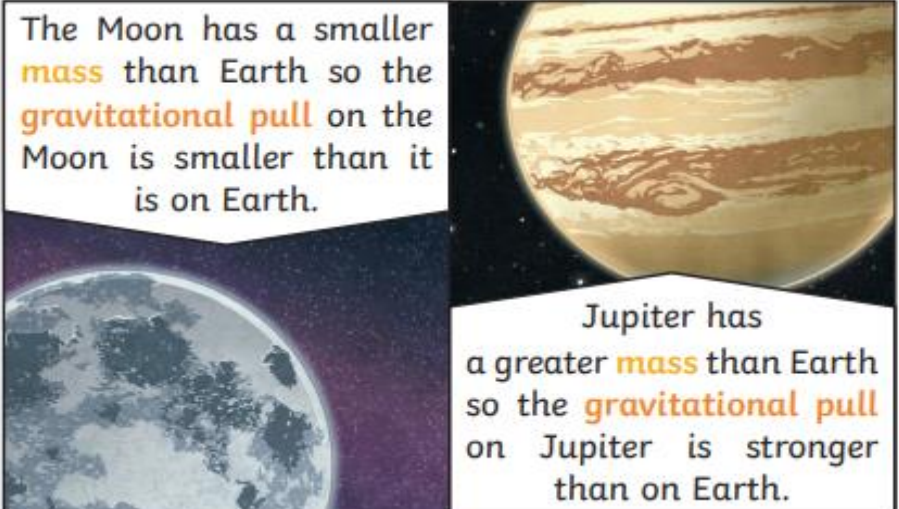
**Mass** is how much matter is inside an object. It is measured in kilograms (kg).

**Weight** is how strongly **gravity** is pulling an object down. It is measured in newtons (N).



Key Vocabulary	
forces	Pushes or pulls
gravity	A pulling force exerted by the Earth (or anything else which has mass)
Earth's gravitational pull	The pull that Earth exerts on an object, pulling it towards Earth's centre. It is the Earth's gravitational pull which keeps us on the ground
weight	The measure of the force of gravity on an object
mass	The measure of how much matter (or 'stuff') is inside an object
air resistance	A type of friction between the air and another material
water resistance	A force that tries to slow things down that are moving through water.
friction	The resistance of motion when one object rubs against another
buoyancy	The ability of objects to float in water or air
momentum	The measurement of an object of mass in motion (speed)
streamlined	When an object is shaped to minimise the effects of air and water resistance
mechanism	Parts which work together in a machine e.g. gears, pulleys, levers

The Moon has a smaller **mass** than Earth so the **gravitational pull** on the Moon is smaller than it is on Earth.

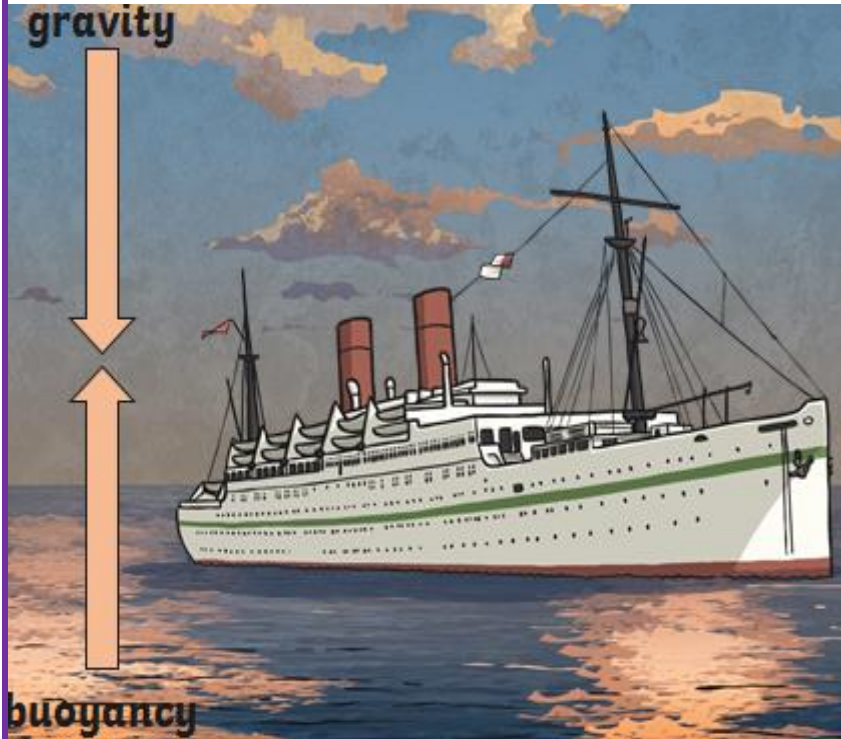


Jupiter has a greater **mass** than Earth so the **gravitational pull** on Jupiter is stronger than on Earth.

gravity



buoyancy



### Key Knowledge

Examples of **forces** in action:



**Water resistance** and **air resistance** are forms of **friction**. **Friction** is sometimes helpful and sometimes unhelpful. For example, **air resistance** is helpful as it stops the skydiver hitting the ground at high speed. **Friction** on a bike chain can make the bike harder to pedal so it is unhelpful.

This shark is **streamlined**.

It has a pointed nose to cut through the water, and a smooth, low, curved back to allow the water to flow over and around it.



It does not create much **water resistance** so it can move through the water quickly.

Pulleys



Pulleys can be used to make a small **force** lift a lighter load. The more wheels in a pulley, the less **force** is needed to lift a **weight**.

Gears/Cogs



Gears or cogs can be used to change the speed, **force** or direction of a motion. When two gears are connected, they always turn in the opposite direction to each other.

Levers



Levers can be used to make a small **force** lift a lighter load. A lever always rests on a pivot.

# My Knowledge Builder

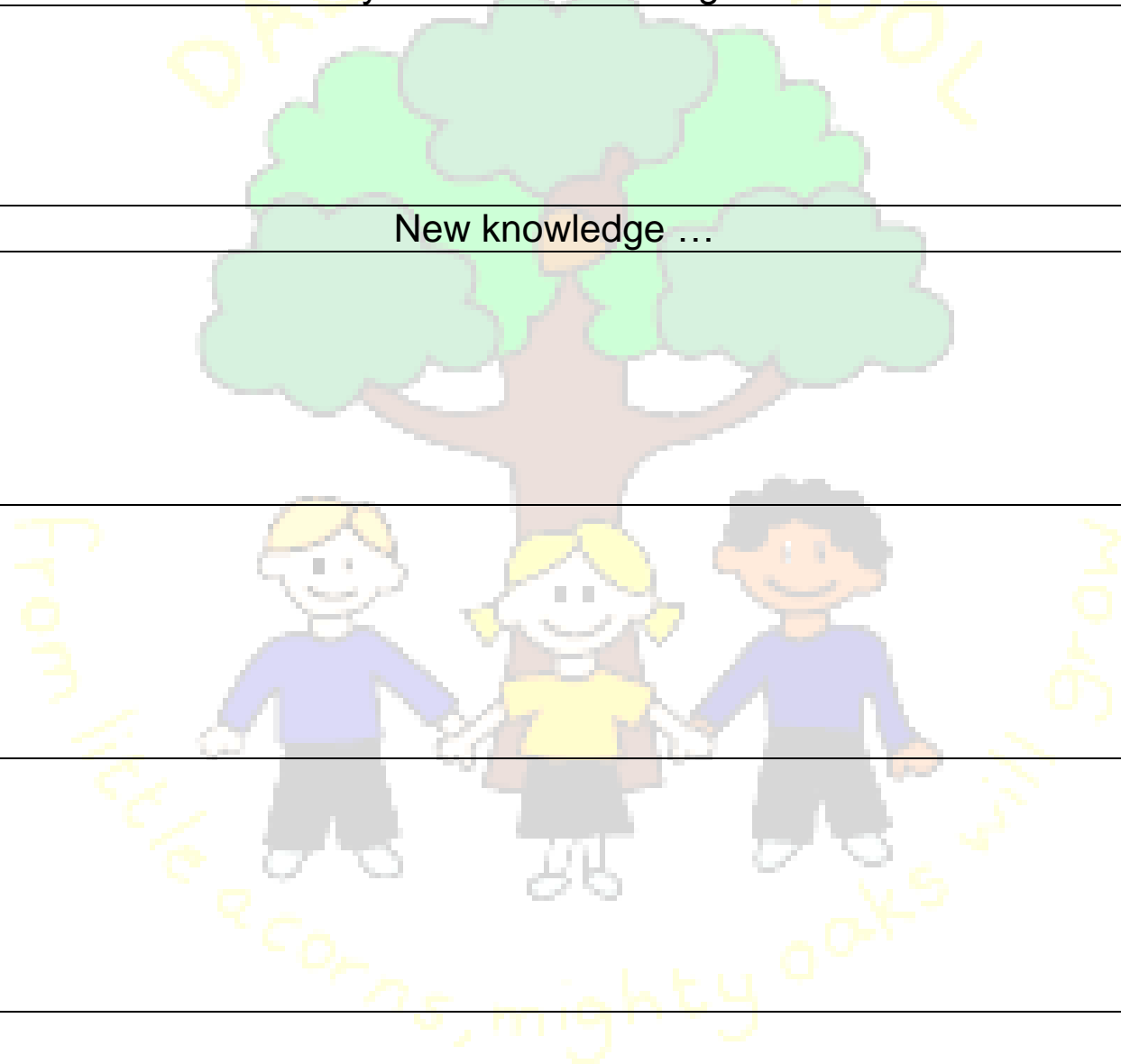
My Previous Knowledge...

New knowledge ...

Week  
1

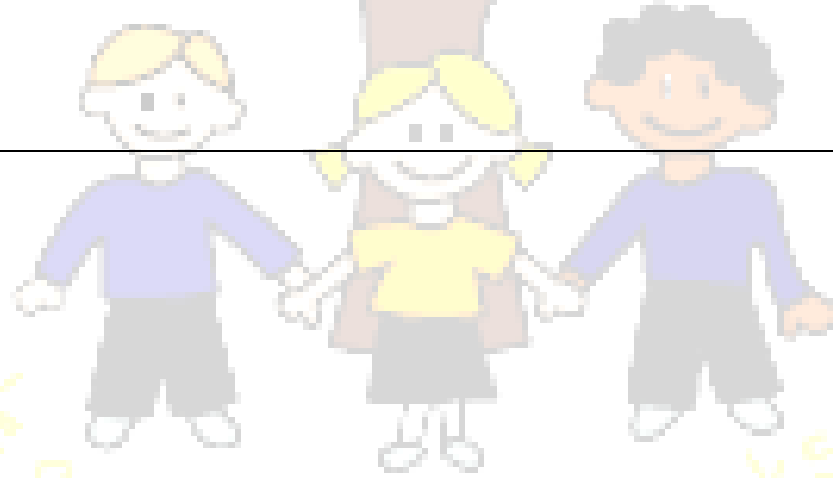
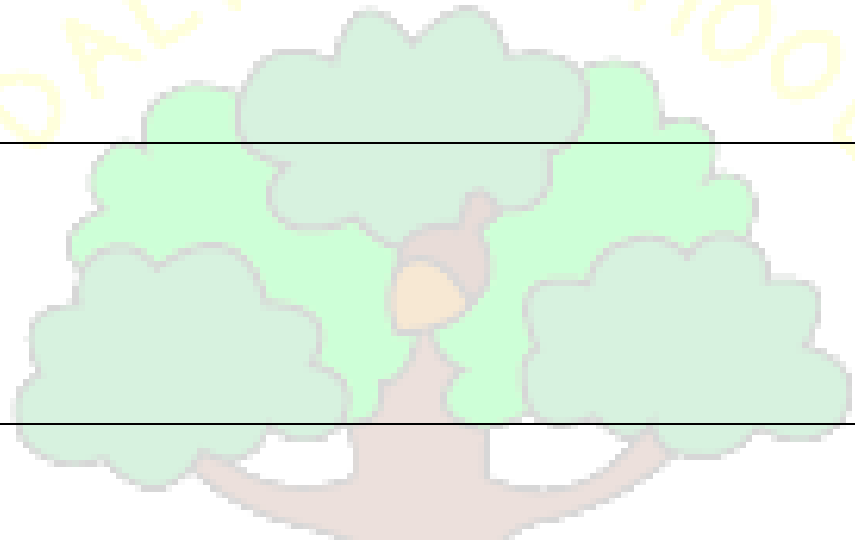
Week  
2

Week  
3



Week 4	
Week 5	
Week 6	

DALTON SCHOOL



From little acorns, mighty oaks will grow

## Post Knowledge Quiz

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