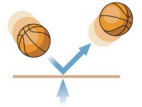




# Year 5 and 6 – Forces

## KNOWLEDGE ORGANISER



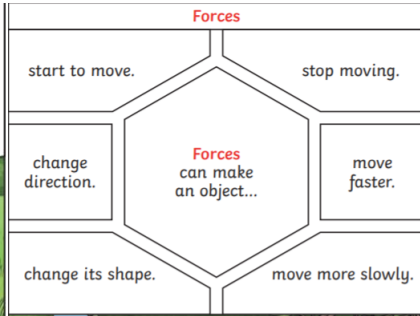
### Key Information

Unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object

The effects of air resistance, water resistance and friction, can be seen between moving surfaces

Some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect

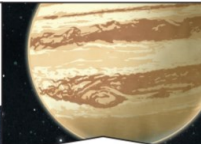
Isaac Newton is famously thought to have developed his theory of **gravity** when he saw an apple fall to the ground from an apple tree.



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.



### 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.

### Key vocabulary

force	A push or a pull	<b>Key revision vocabulary:</b>  magnet -  repel -  attract -  material -  surface -  poles -  magnetic -
gravity	A pulling force exerted by Earth (or anything else which has a mass)	
Earth's gravitational pull	The pull the Earth exerts on an object, pulling it towards the Earth's centre. It is the Earth's gravitational pull that keeps us on the ground.	
air resistance	A type of friction caused by air pushing against any moving object	
water resistance	A type of friction caused by water pushing against any moving object	
friction	A force that acts between two surfaces or objects that are moving or trying to move, across each other	
streamlined	When an object is shaped to minimize the effects of air or water resistance	

# Year 5 and 6 – Forces

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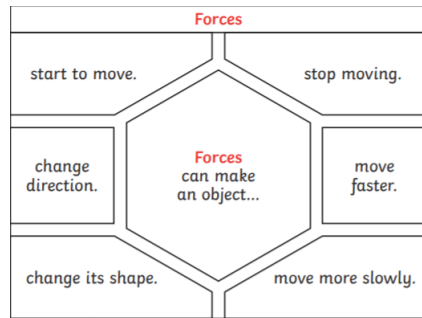
### Key Information

Unsupported objects fall towards the Earth because of the force of \_\_\_\_\_ acting between the \_\_\_\_\_ and the falling object

The effects of air resistance, water resistance and friction, can be seen between \_\_\_\_\_ surfaces

Some mechanisms including levers, pulleys and gears allow a \_\_\_\_\_ force to have a \_\_\_\_\_ effect

Isaac Newton is famously thought to have developed his theory of \_\_\_\_\_ when he saw an apple fall to the ground from an apple tree.



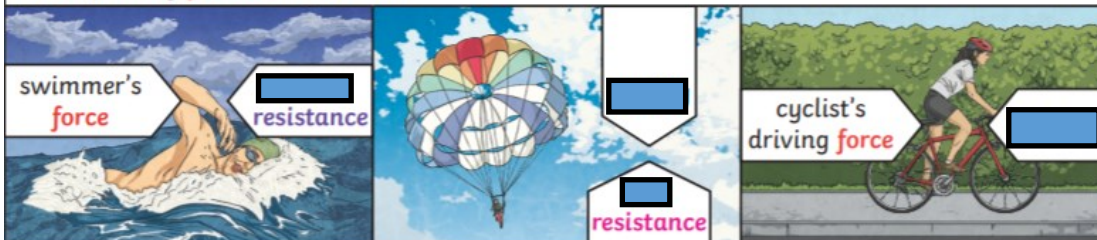
The Moon has a smaller \_\_\_\_\_ than Earth so the gravitational pull on the Moon is smaller than it is on \_\_\_\_\_



Jupiter has a greater mass than Earth so the \_\_\_\_\_ on Jupiter is stronger than on Earth.



### Examples of forces in action:



Water resistance and air resistance are forms of \_\_\_\_\_. 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 \_\_\_\_\_ to pedal so it is unhelpful.

### Key vocabulary

force		<b>Revision questions:</b>
	A pulling force exerted by Earth (or anything else which has a mass)	Name 4 different types of force
	The pull the Earth exerts on an object, pulling it towards the Earth's centre. It is the Earth's gravitational pull that keeps us on the ground.	How does gravity work?
air resistance		Can you give an example of where a lack of friction is fun?
water resistance		When is air resistance useful?
	A force that acts between two surfaces or objects that are moving or trying to move, across each other	Describe what happens when you try to run through water.
	When an object is shaped to minimize the effects of air or water resistance	