Hyde Park Junior School - Science

Topic: Forces	Year: 5	Strand: Physics

Enquiry Question: All objects move at the same speed whether in the air, on the ground or in water. Is this statement correct?

Key information

Force is needed to change the movement of an object.

Gravity is the **force** that pulls all things towards the Earth and makes them fall.

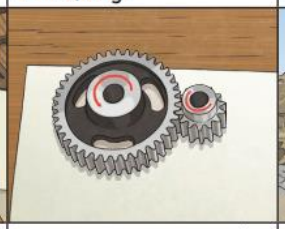
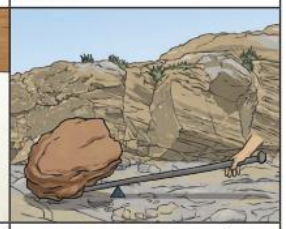
Friction is a **force** that opposes the movement of one surface across another.

Examples of forces in action

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.

Mechanisms

Pulleys	Gears/Cogs	Levers
		
Pulleys can be used to make a small force lift a heavier load. The more wheels in a pulley, the less force is needed to lift a weight.	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 can be used to make a small force lift a heavier load. A lever always rests on a pivot.

Who was Sir Isaac Newton?

Sir Isaac Newton is considered one of the most important scientists in history. During his lifetime, Newton developed the theory of gravity, the laws of motion (which became the basis for physics), a new type of

mathematics called calculus, and made breakthroughs in the area of optics.

Key Vocabulary

force	a push or a pull
gravity	a force that pulls everything down toward the centre of the Earth
friction	a force that acts between two surfaces or objects that are moving, or trying to move, across each other.
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
pressure	is measure of how much force is acting on an area
mass	the amount of matter an object contains.

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Scientific Enquiry
Questions: How does the saltiness (salinity) of water affect water resistance? How does the length of a paper helicopter's wings affect the time it takes to fall? How does adding holes to a parachute affect the time it takes to fall?

Question 1:	Start of unit:	End of unit:
What is a force?		

Question 2:	Start of unit:	End of unit:
In what units do we measure force?		

Question 3:	Start of unit:	End of unit:
Name two types of friction:		

Question 4:	Start of unit:	End of unit:
Why do people seem lighter when walking on the Moon?		

Question 5:	Start of unit:	End of unit:
What is air resistance?		