Knowledge Organiser: Year 5 - Forces

Careers connected to Forces:
Aerodynamics engineer, forensic investigator

Lesson Sequence



1. Explore gravity and the life and work of Isaac Newton



2. Examine the connection between air resistance and parachutes



3. Explore factors which affect an object's ability to resist water



4. Investigate the effects of friction on different surfaces



5. Investigate mechanism – levers and pulleys



6. Investigate mechanisms - gears

Forces in Action

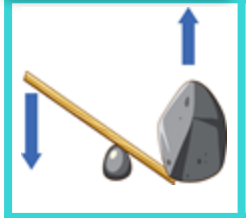


Mechanisms



Pulleys

A pulley is a wheel over which a belt, rope, or chain is pulled to lift or lower a heavy object.



Levers

Levers are a bar that rotates around a point. They make it easier to lift a heavy load.



Gears/Cogs

Gears are toothed wheels that mesh together, they rotate in opposite directions.

Mass and Weight



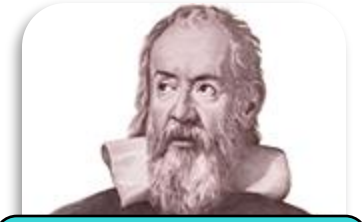
The mass of an item can be measured in **Grams/ Kilograms**.

Weight is how much force is needed to pull an object and is measured in **Newtons**.





Sir Isaac Newton developed his theory of gravity.



Galileo conducted experiments to test mass.

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Before & After Test



Record the resisting force for each of the following situations highlighted below.



Driving Force



Gravity



Paddling Force

When you measure the mass of something you can use a weighing scale. When measuring the force applied you can use a force meter.
Which units of measurement do you use when using this equipment?

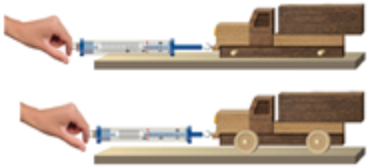


_____  _____

Charlotte wants to carry out a fair test to investigate which surface to place on a floor to prevent people from slipping. Name 2 variables she must keep the same to make it a fair test:

1. _____

2. _____

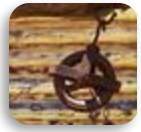


What is the variable that she must change?

_____

Draw lines to match the mechanisms to their definitions.







A wheel over which a belt, rope, or chain is pulled to lift or lower a heavy object.
A bar that rotates around a point. They make it easier to lift a heavy load.
Wheels that mesh together, they rotate in opposite directions.

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Unit Rocket Words: Year 5 - forces

Rocket Words

	Sir Isaac Newton	an English physicist and mathematician
	gravity	force which draws objects towards the centre of a planet
	Galileo Galilei	an Italian scientist, and the first astronomer
	parachute	a device, usually made from cloth, designed to create air resistance and slow descent
	water resistance	friction which acts on an object as it moves through water
	streamlined	an object that is shaped to travel through air or water with little resistance
	buoyant	to float
	upthrust	any force that is causing something to be pushed upwards
	friction	the resistance of motion when one object rubs against another
	newton	the international metric unit of force
	lever	a long arm that rests on a support called a fulcrum
	pulley	a wheel over which a belt, rope, or chain is pulled to lift or lower a heavy object

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