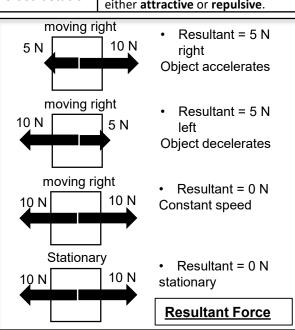
Key Word	Definition
TOPIC: FORCES INTRO	
BIG IDEA: FORCES	
MITOTILE DOL ONGAMO	- 1\

KNOWLEDGE ORGANISER

Key Word	Definition
force	A force is a push or pull between objects that cause change in speed, direction and/or shape
contact force	Contact forces act between two objects that are physically touching.
non-contact force	Non-contact forces act between two objects that are NOT physically touching.
Newton	Unit for measuring forces (N).
magnitude	The size or amount of a quantity
resultant force	Single force which can replace all the forces acting on an object and have the same effect.
equilibrium	State of an object when opposing forces are balanced.
stationary	State of motion where the object is not moving
Newton meter	Instrument used to measure the magnitude of a force
accelerate	Increasing speed
decelerate	Decreasing speed

Type of **Definition** Contact / force noncontact tension a pulling force exerted on an object by a string, rope or rod. contact a force that acts between two touching surfaces and prevents or resists them friction contact moving against each other upthrust an upwards force that acts on an object when it is in a fluid (a liquid or gas). contact thrust a driving force exerted by an engine to make an object move contact experienced by a mass when it is sufficiently close to another mass it always weight non-contact pulls two objects towards each other. It never pushes them apart. An object experiences this force as it moves through air. It acts in the opposite air contact resistance direction to movement and increases the faster the object moves experienced by a magnet or a magnetic material, eg iron, when placed in a magnetic non-contact magnetic field. This force can pull the two objects together or push them apart. When an object pushes on a surface like a table, wall or the ground, the surface normal contact pushes back on the object with a balancing force. contact experienced by a charged particle in an electric field. This force can be electrostatic non-contact either attractive or repulsive.



Free Body Force Diagrams

- e Body Force Diagrams
- · We use arrows to represent force:
 - The direction of the arrow represent the
 - direction of the force

 The size of the arrow represent the
- magnitude of the force
 We simplify scenarios by focusing on one object at a time
 Normal



becomes

Ball weight

contact

 Force arrows must be drawn from the centre pointing away from the object

Knowledge organiser Big idea:
Forces
Y7 topic: Forces intro

I have already learned:

In KS2:

Y3 – Compare how things move on different surfaces, some forces need contact between 2 objects Y5 – Objects fall to the Earth due to gravity, identify the effects of friction

This topic links to:

Y8 Forces and Motion

KS4; P1 Energy, P5 forces, P7 Magnets and Electromagnets, P8 Space

KS5; Forces and Motion, Newtonian world and astrophysics, particles and medical physics

It is important to study about forces because...

Forces cause change. Forces are encountered every day — from walking, placing an object on a surface, throwing an object in the air, and even the regular variation of ocean tides. What is force? A force is a push or a pull and a product of the interaction between two or more objects. Studying forces enables humans to understand the behaviour of objects, specifically, how it changes an object's speed, direction, size, or shape. It also sheds light on how an object behaves when interacting with another object.

Possible careers involving force are...

Engineer Astrophysicist
Race car driver Nuclear physicist

Gymnast Physio

Game developer Armed forces
Architect Tree surgeon

Astronaut Geophysicist

Construction ...and many more

Pilot

Sports player