



**Science Topic:** Forces

**Year: 5 Term:** Autumn 1

## Key Knowledge/Content:

- Air resistance and water resistance are forces against motion caused by objects having to move air and water out of their way.
- Friction is a force against motion caused by two surfaces rubbing against each other.
- Some objects require large forces to make them move; gears, pulley and levers can reduce the force needed to make things move

## Scientist Focus:

### **Albert Einstein (Physicist)**

Studied forces and the Universe, including the presence of gravity.

## Links to:

### Prior learning:

To look at push and pull forces in different movements.

### Future learning:

To explore Earth and Space and how gravity is different across different planets and the Moon.

## Key vocabulary with definition:

### Prior vocabulary:

- Push
- Pull
- Force- Pushes or pulls in a particular direction.
- Surface- The outer layer of an object or the ground.

### New vocabulary:

- Air resistance- Friction between air and another material.
- Water resistance- Friction between water and another material.
- Gravity- A force that pulls everything down towards the centre of the Earth.
- Friction- A force between two surfaces that are sliding, or trying to slide, across each other.
- Newton- The measure of the amount of force on an object.
- Opposing- Working in opposite directions.
- Mechanism- Something that works using forces such as pushing and pulling.
- Streamline- An object that is shaped to travel through air or water with as little resistance as possible.

## By the end of this unit

**All children can:** name the forces apparent in a situation and **understand** that gravity is pulling everything towards the centre of the Earth.

**Most children can:** investigate how friction changes with different surfaces and **explore** how air resistance works using a parachute.

**Some children can:** make accurate predictions about how forces will change in different situations and **explain** how forces can be useful in different mechanisms.

## Background understanding for teachers and parents:

This unit will look at a variety of forces including gravity, air resistance, water resistance and friction. Children will take part in a range of investigations to explore different forces.

## Curriculum Driver (one):

Communication

### Evidence outcome:

Verbally make predictions in different experiments and explain findings in group investigations.