



Year 5
Spring term

Forces

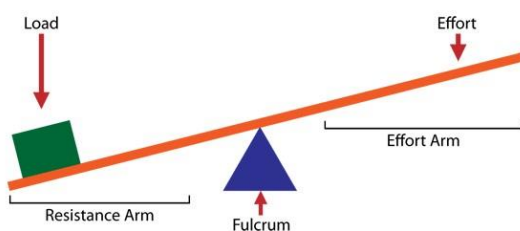
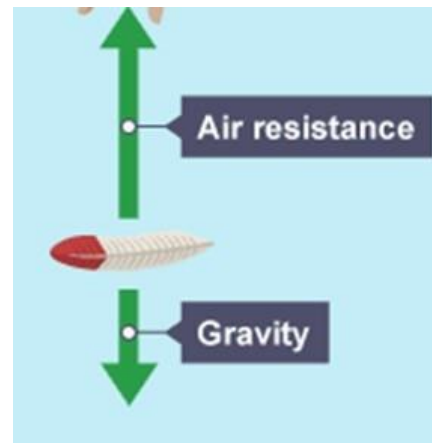
In this unit children will find out more about forces that affect their every day lives. They will explore the key scientists in this field and recreate some of their investigations.

Background Information

Forces are part of everything we do from walking to sky diving. Over the years, scientists and designers from all fields have worked together to use forces to their advantage. From overcoming gravity to allow helicopters to fly to making use of air resistance with parachutes, children will be carrying out investigations to find out how this is all possible.

In this unit, the children will:

- Explain that unsupported objects fall towards Earth because of the force of gravity acting between the Earth and the falling object
- Identify effects of air resistance, water resistance and friction that act between moving surfaces
- Find out about the way that ideas about forces have developed considering the work of scientists such as Gallileo and Newton.
- Recognise that some mechanisms including levers and pulleys allow for a smaller force to have greater effect.

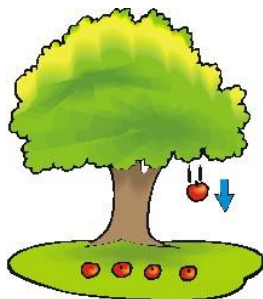


Key Skills:

- use modelling and drawing to demonstrate forces
- Research key scientists
- Carry out fair tests by controlling variables
- Present findings in different ways including using diagrams and graphs
- Observing and questioning to develop scientific knowledge.

Key Content:

- Forces can be push or pull
- Forces cause a change in motion: stop, go and turn
- Pulleys, levers and gears can reduce the force required
- Gravity is a force that pull objects towards each other
- Gravity is proportional to the mass of an object
- Friction is caused by two objects rubbing together
- Friction produces heat
- Air resistance and water resistance are types of friction
- Friction slows things down
- The importance of the work of Isaac Newton and Gallileo



Impact on Our Lives:

Developing an understanding of how forces affect our lives and how they can be overcome and harnessed.

Gaining an appreciation for the work that scientists do to and the importance of experimentation to find evidence to support theories.

Key Vocabulary:

Air resistance is force that is caused by air with the force acting in the opposite direction to an object moving through the air

Force is a push or pull upon an object resulting from its interaction with another object

Friction is the resistance that one surface or object encounters when moving over another

Gears are toothed wheels that work with others to alter the relation between the speed of a driving mechanism (e.g. engine) and the speed of the driven parts (e.g. the wheels)

Gravity is the force that attracts a body towards the centre of the earth

Levers are rigid bars resting on a pivot that are used to move a heavy or firmly fixed load

Mass is the weight measured by an object's acceleration under a given force or by the force exerted on it by gravity

Pull force to draw or haul towards oneself or itself, in a particular direction

Pulley is a wheel with a grooved rim around that changes the direction of a force applied to the cord

Push force is to move something in a specific way by exerting force

Water resistance is a force that is caused by water with the force acting in the opposite direction to an object moving through the water