Science Y3 Spring 2 – Forces

In this unit children will investigate the amount of friction created by different surfaces and use measures such as length and time to show how fast or far an object travels. They will gather and record their data in a variety of ways.

In this unit children will:

- Compare how different things move on different surfaces – find out which surface allows objects to travel the quickest or slowest and the furthest distance.
- Raise questions when carrying out their tests to find out how far things move on different surfaces, and gather and record data to find out answers to these questions.
- Notice that some forces need contact between 2 objects.

Key Vocabulary

Friction– The resistance of motion when there is contact between 2 surfaces.

Force – The pulling or pushing effect that something has on something else.

Gravity – The force which causes things to drop to the ground.

Motion – The activity of changing position or moving from one place to another.

Pull – When you pull something, you hold it firmly and use force in order to move it towards you or away from its previous position.

Push – When you push something, you use force to make it move away from you or away from its previous position.

Resistance – A force which slows down a moving object or vehicle.

Prior Learning

F.S Talk about why things happen and how things work

Y1 Materials – Know simple physical properties of a variety of materials

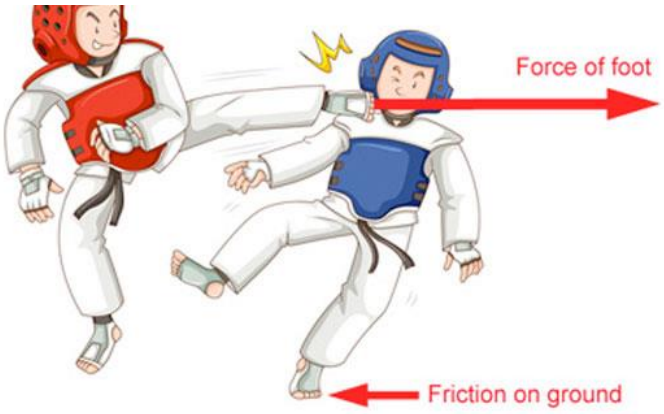
Y2 Materials – Know that the shape of some materials can be changed when they are stretched, twisted, bent and squashed.

Cross Curricular Links

Music - drumming

Key Knowledge

- Forces are pushes and pulls.
- These forces change the motion of an object.
- A force will make it start to move or speed up, slow it down or even make it stop.
- When a cyclist pushes down on the pedals of a bike, it begins to move. The harder the cyclist pedals, the faster the bike moves.
- When the cyclist pulls the brakes, the bike slows down and eventually stops.
- Forces act in opposite directions to each other.
- When an object moves across a surface, friction acts as an opposite force.
- Friction is a force that holds back the motion of an object.
- Some surfaces create more friction than others which means that objects move across them slower e.g. grass, gravel, carpet, concrete, sand, wood.
- On a ramp, the force that causes the object to move downwards is gravity.
- Objects move differently depending on the surface of the ramp.



Key Questions

- Which force pulls objects towards the ground?
- Which force acts as a resistance when one object moves against another?
- What is motion?
- Which surface would create the most friction for a cyclist riding a bike?