Science: Forces
Year 5 Autumn 2

Key Vocabulary

Force	Strength or energy as an attribute of physical action or movement.
Gravity	The force that attracts a body towards the centre of the earth, or towards any other physical body having mass.
Air resistance	The forces that are in opposition to the relative motion of an object as it passes through the air.
Water resistance	The forces that are in opposition to the relative motion of an object as it passes through water.
Friction	The resistance that one surface or object encounters when moving over another.
Mechanism	A system of parts working together in a machine; a piece of machinery.
Pulley	A wheel with a grooved rim around which a cord passes, which acts to change the direction of a force applied to the cord and is used to raise heavy weights.
Lever	A rigid bar resting on a pivot, used to move a heavy or firmly fixed load with one end when pressure is applied to the other.
Gears	A toothed wheel that works with others to alter the relation between the speed of a driving mechanism (such as the engine of a vehicle) and the speed of the driven parts (the wheels).

Why don't you…

Observe and name the forces affecting the things around you?

Ride a bike with gears and work out how they help you to go up a hill?

Website Links

https://www.ducksters.com/science/physics/force.php

https://www.bbc.co.uk/bitesize/topics/znmmn39

Scientific Concepts

Energy
Strength and power. There are many forms such as thermal (heat), radiant (light) or kinetic (movement).

Structure and Function
Anything composed of parts arranged together in some way has a structure. A function is a specific job or procedure.

Enquiry Questions

What would our world be like without gravity?
Which would fall quicker? A flat piece of paper or a scrunched-up piece?
What would happen to a skydiver if they had a smaller parachute?
Which is the best surface for skating on? Why?
Can you lift something heavier than yourself using pulleys, levers or gears?

Scientific Knowledge

Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.
Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater force.

Scientific Skills

Use different ideas and suggest how to find something out.
Make and record a prediction before testing.
Plan a fair test and explain why it was fair.
Set up a simple fair test to make comparisons.
Explain why they need to collect information to answer a question.
Obtaining and presenting evidence.
Measure using different equipment and units of measure.
Record their observations in different ways.
Describe what they have found using scientific words.
Make accurate measurements using standard units.
Explain what they have found out and use their measurements to say whether it helps to answer their question.
Use a range of equipment (including a data-logger) in a simple test.