



Pinner Wood School



Year Group	5	Term	Spring 1	Subject	Science	Topic	Forces	
							Key Question	Can you feel the force?
Prior Learning and other Curriculum Links	EYFS ELG The Natural World Explore the natural world around them, making observations; know some similarities and differences between the natural world around them and contrasting environments; understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. The World: discuss how things work Y2: materials- how materials can be manipulated Y3: forces and magnets: describe how objects move Curriculum Links in Year 5 Design Technology: using Cams to make a moving toy Science: Space- relationship between weight and mass					Target Tracker statements (Skills)	<ul style="list-style-type: none">- I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.- I can demonstrate the effects of air resistance, water resistance and friction, that act between moving surfaces.- I can show that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	

Fundamentals	<ul style="list-style-type: none"> • 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 effect. 	Key Facts/Sticky Knowledge	<ul style="list-style-type: none"> • Weight and mass are measured in Newton meters • Isaac Newton discovered gravity. • Air resistance is a type of friction between air and another material. • Friction is the resistance to motion of one object moving relative to another. • There are three types of levers and pulleys. • Balanced forces are forces where the effect of one force is cancelled out by another.
Our Curriculum Journey	<p>Journey: Children will start this topic by completing an experiment measuring how quickly objects fall from a height, focussing on the force of gravity. They will then move on to learning about levers, gears and pulleys in connection with forces. Following this, the children move on to learning about buoyancy and which keeps objects afloat as the forces are balanced. In the final lesson the children will learn about imbalanced forces and take part in a tug of war.</p>		
Key Vocabulary (revisited)	push, pull, twist, force, air, turns, fast, slow, slows down, material, surface, magnet, attracts, magnetic material, magnetism, acts at a distance, non-magnetic material, metal, non-metal, strength, north pole, south pole, repel, question, investigation, fair test, change, measure, predict, prediction, explanation, observations, draw conclusions	Key Vocabulary (new)	air resistance, balanced, balanced forces, bevel gears, clockwork, cogs, compress, extend, effort, force arm, forces, force, friction, force arrow, fulcrum, gravity, Galileo, gear ratio, gears, gear trains, lever, lift, machine, mechanisms, movement, Newton, Newton meter, pinion, pivot, pulley, pull, push, rack, resistance, rotary motion, simple machines, speed, time,

			unbalanced force, upthrust, water resistance, weight arm, wheel.
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