Year 5 – Forces

UKS2 Autumn 1

Breadth	Concept	Milestone 3 (Years 5&6)	Knowledge	Vocabulary
Light • Look at sources, seeing, reflections and shadows. • Explain how light appears to travel in straight lines and how this affects seeing and shadows. Sound • Look at sources, vibration, volume and pitch. Electricity • Look at appliances, circuits, lamps, switches, insulators and conductors. • Look at circuits, the effect of the voltage in cells and the resistance and conductivity of materials. Forces and magnets	Working scientifically • Work scientifically This concept involves learning the methodologies of the discipline of science. Understand movement, forces and magnets This concept involves understanding what causes motion.	Plan enquiries, including recognising and controlling variables where necessary. • Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision. • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models. Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. • Present findings in written form, displays and other presentations. • Use test results to make predictions to set up further comparative and fair tests. • Use simple models to describe scientific ideas, identifying scientific evidence that has	To know that there are different forces, pushes or pulls To know that forces can be balanced To know that forces can be unbalanced To know what each of the following forces do: Gravity, friction, water resistance, air resistance To know the name of a force acting on an To know that gravity pulls objects to the centre of the Earth To know that gravity is different on other planets To know the name of mechanisms: pulleys, gears, levers	Forces Balanced force Unbalanced force Gravity Friction Water resistance Air resistance Mechanism Gear Lever Pulley Forces Balanced force Unbalanced force Gravity Friction Buoyancy Water resistance Air resistance Opposite forces Understand that some mechanisms including levers, pulleys and gears, allow a smaller force to have a greater effect.

• Look at contact and distant forces, attraction and repulsion, comparing and grouping materials. • Look at poles, attraction and repulsion. • Look at the effect of gravity and drag forces. • Look at transference of forces in gears, pulleys, levers and springs. Earth and space • Look at the movement of the Earth and the Moon •Explain day and night		been used to support or refute ideas or arguments. Magnets • Describe magnets as having two poles. • Predict whether two magnets will attract or repel each other, depending on which poles are facing. Forces • Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • Identify the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces. • Describe, in terms of drag forces, why moving objects that are not driven tend to slow down. Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs. • Understand that some mechanisms including levers, pulleys and gears, allow a smaller force to have a greater effect.	To know that mechanisms allow a smaller force to have a greater effect	
	Understand the Earth's movement in space This concept involves understanding what	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. • Describe the movement of the Moon relative to the Earth.		

	causes seasonal changes, day and night.	• Describe the Sun, Earth and Moon as approximately spherical bodies. • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.		
	Understand electrical circuits This concept involves understanding circuits and their role in electrical applications.	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. • Use recognised symbols when representing a simple circuit in a diagram.		