



Autumn 1		Forces				
Prior learning						
Lesson objective	Explore gravity and the life and work of Isaac Newton.	Examine the connection between air resistance and parachutes.	Explore factors which affect an object's ability to resist water.	Investigate the effects of friction on different surfaces.	Investigate mechanisms - levers and pulleys.	Investigate mechanisms – gears.
Key vocabulary	Sir Isaac Newton, gravity, astronomy, weight, mass	Galileo Galilei, air resistance, opposing, streamlined, parachute	water resistance, streamlined, upthrust, buoyant, sink	Friction, resistance, lubricant, Newton meter, Newton	Lever, load, pivot, fulcrum, pulley	Mechanism, gear, mesh, rack and pinion, bevel gear
Creative context						
Substantive 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.	Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.	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.	Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.
Disciplinary knowledge	Identifying scientific evidence that has been used to support or refute ideas or arguments	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.



Science – Year 5



			other presentations.		other presentations.	
Recorded learning	Make prediction, record results and write conclusion for experiment.	Design investigation to test best parachute. Make a prediction, record results and write conclusion	Complete investigation on water resistance. Identify control variables, write prediction. Write conclusion.	Complete resistance experiment. Write prediction. Present results in a table and bar chart.	Design and create a pulley system. Record results and write conclusion.	Design and create 3 gears to interact. Write prediction, complete experiment
Future learning						