Forces – Year 5 Unit – Year D

| **Retrieval vocab:**
Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole
New Vocab:
Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears. | **Previous learning**
Compare how things move on different surfaces. (Y3 - Forces and magnets) • Notice that some forces need contact between two objects, but magnetic forces can act at a distance. (Y3 - Forces and magnets) • Observe how magnets attract or repel each other and attract some materials and not others. (Y3 - Forces and magnets) • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet and identify some magnetic materials. (Y3 - Forces and magnets) • Describe magnets as having two poles. (Y3 - Forces and magnets) • Predict whether two magnets will attract or repel each other, depending on which poles are facing. (Y3 - Forces and magnets) | **Links with Vision and Values.**
Stimulate in every child a sense of curiosity and excitement about the world |

	Working scientifically/ enquiry focus	**Curriculum Strand/ Focus**	**Small step objective**	**Previous learning within the unit.**	**Lesson content**	**Outcome**
1	Identify/ classify	Forces	To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object by identifying forces acting on objects.	*N/A*	What forces can we name?	The children can: Understand what a force is and name different forces.
2	Research	Forces	To explore the effect that gravity has on objects and how the first theory of gravity was developed	*Understand what a force is and name different forces.*	What is gravity?	The children can: Explain what gravity is know it was discovered by Sir Isaac Newton. Understand the difference between mass and weight.

3	Comparative/Fair testing	Forces	To identify the effects of air resistance by investigating the best parachute to slow a person down.	*As above Explain what gravity is and know it was discovered by Sir Isaac Newton. Understand the difference between mass and weight*	What is air resistance?	The children can: Understand that air resistance is the force that slows objects down as they fall. To know that the bigger the surface area the greater the air resistance.
4	Comparative/ fair testing	Forces	To identify the effects of water resistance by creating and racing streamlined boats.	*As above Understand that air resistance is the force that slows objects down as they fall. Understand that the bigger the surface area the greater the air resistance.*	What is water resistance?	The children can: Understand how best to streamline a boat by changing its shape
5	Identify/ classify	Forces	To identify the effects of friction by investigating brakes.	*As above Understand how best to streamline a boat by changing its shape.*	What is friction?	The children can: Explain how friction can affect a moving vehicle
6	Comparative/ fair testing	Forces	Plan an investigation into friction, recognizing and controlling variables. Take measurements using a range of scientific equipment.	*As above Explain how friction can affect a moving vehicle*	Whose shoe creates the most friction?	The children can: Plan an investigation to answer the question – whose shoe has the greatest friction? They will use their results to draw conclusions.
7	Identify/ classify Research	Forces	To recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect by exploring and designing a simple mechanism.	*As above Plan an investigation to answer the question – whose shoe has the greatest friction? Use their results to draw conclusions.*	What are mechanisms?	The children can: Recognise and talk about different mechanisms