Topic: **Forces**	Year: 5	Strand: **Physics**

What should I already know?

Similarities and differences between common, everyday objects (EYFS)
Compare how things move on different surfaces (Y3)
Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance (Y3)
Observe how magnets attract or repel each other and attract some materials and not others (Y3)
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)
Describe magnets as having 2 poles (Y3)

What will I know by the end of the unit?

What is a force?	A **force** is either a push or a pull A force can speed up, slow down, change shape and change direction of something
What different forces are there?	**Magnetism**: Magnets attract or repel each other or other objects **Water resistance:** Water resistance slows down moving objects, because water slows you down as you move through it. To travel faster through the water, things need to be streamlined **Air resistance:** Air resistance slows down moving objects, because air slows you down as you move through it. To travel faster through the air, things need to be streamlined **Friction**: Friction happens when two surfaces touch each other. Friction gives us grip. Friction produces heat. Rougher surfaces slow things down a lot. Smoother surfaces don't slow things down as much
What is gravity?	**Gravity** is the force that **pulls** objects **down** towards the centre of the Earth. Gravity stops things from floating away into space. When things go into the air (like a football) gravity pulls them back down.
How do **mechanisms (levers)** help us?	**Levers**, cogs and pulleys help lift heavy loads. 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.

Key vocabulary

force	a push or a pull
gravity	a force that pulls objects back down
air resistance	a force that slows down moving objects in the air
water resistance	a force that slows down moving objects in water
friction	a force that gives us heat or grip when two forces touch
lever	a rigid bar resting on a pivot
mechanism	a piece of machinery
force meter	instruments designed to determine force
Newton meter	a piece of equipment that is used to measure the forces acting on an object
balance	a state of equilibrium, an equal force on both objects
mass	the amount of matter an object contains. The more matter something has, the more it will weigh
float	to rest on the surface of or be suspended in a fluid
stream lined	a shape that reduces friction drag between a fluid, such as air or water, and an object moving through it
surface	a surface is the outer layer of an object.