Science Knowledge Organiser Year 5- Feel the Force

Question for Learning: **How can we measure forces?** **Key learning;** • There are different types of forces. Some work in contact with objects, such as friction, air resistance and water resistance; others work at a distance (non-contact forces), such as magnetism and gravity. • Newton meters have two scales, one in grams and one in Newtons. The gram is the standard measurement of mass. The Newton is the unit for measuring force and weight. • Friction is a force that opposes motion between moving surfaces in contact. The size of this force depends on the properties of the surfaces.	 Noticing patterns
Question for Learning: **Why does an object fall?** **Key learning;** • When objects fall, gravity pulls them towards the centre of the Earth. • The speed of the descent is affected not by an object's mass, but by the opposing drag force – air resistance. • Without air resistance any objects dropped simultaneously hit the ground simultaneously.	 Comparative and fair testing
Question for Learning: **What makes things move?** **Key learning;** • When a vehicle is on the table, two equal forces act on it: the table provides an upwards force, equal and opposite to gravity – this is a reaction force. • It is possible to change bubbles' downward movement using another force. Bubbles are good for demonstrating 'invisible' forces because it is easy to change their speed and direction of movement by blowing the invisible air (a push force)..	 Comparative and fair testing
Question for Learning: **How can we slow down moving objects?** **Key learning;** • Some materials lack rigidity and as a result may float because they have a greater surface area. • If a small hole is cut in the middle of the parachute this will allow air to slowly pass through the hole rather than spilling out over one side. The hole should also help the parachute fall in a straight line.	 Comparative and fair testing
Question for Learning: **Does the shape of an object affect its movement in liquid?** • Water resistance is the force that opposes any movement through or on the surface of water (i.e. pushing back against the object). • The more streamlined the object, the faster it moves and the less resistance it has. • The more molecules that there are in a liquid, the thicker the liquid (i.e. the greater the effect of the resistance).	 Comparative and fair testing
Question for Learning: **How can we use levers to help us?** • A mechanism is simply a device that takes an input motion and force, and outputs a different motion and force • A lever is the simplest kind of mechanism.	 Comparative and fair testing

Key Words

surface	A layer of material of which an object can sit.
grip	effective control over something
drag	Drag is a force that acts on an object in the opposite direction than that object is moving. An object must be moving through some kind of fluid for drag to occur.
centre	The middle of something, e,g, the centre of the earth.