Kettering science Academy	**9I Forces and Motion**

1. Forces and Movement	
Friction	Force between two surfaces sliding across each other.
Reducing Friction	Using rollers or wheels / sleds in snowy countries
Balanced	When a force acting on an object is the same size as the force in the opposite direction.
Constant Speed	Caused by balanced forces acting on an object.
Unbalanced	Forces acting in opposite directions are not equal.
Resultant	The difference between the forward and backward force.
Accelerate	Get faster- caused by unbalanced forces.
Drag	Acts to slow down objects moving through fluids (liquids/ gases) *e.g. water resistance and air resistance*
Top Speed	Dependent on the maximum force a vehicle can move forwards an on the friction/ drag acting to slow it down.

2. Energy For Movement	
Food	Supplies humans the energy they need.
Solar Energy	Energy stored in food originally came from the Sun.
Kinetic Energy	Stored in anything that is moving.
Fossil Fuel	Fuels formed by remains of plants / animals that store large amounts of energy. *e.g. coal, oil, natural gas*
Non-Renewable	Resources that will run out one day like fossil fuels.
Using Fossil Fuels	Energy stored in oil and natural gas is used for transport. Energy released by burning fuels is transferred by heating for cooking or keeping warm
Gravitational Potential	Energy stored in raised objects.
Elastic Potential	Energy stored in stretched or squashed objects.
Thermal	Energy stored in the movement of particles. Transferred from hot objects to cooler ones by heating.
Renewable	Resources that will not run out. *e.g. wind, moving water*
Nuclear Energy	Non-renewable resource used to generate electricity.
Electricity	Cannot be stored, has to be generated by renewable or non-renewable resources.
Conservation of Energy	Energy cannot be created or destroyed, only transferred.
Efficiency	The useful energy transferred compared to the total energy transferred by a device.
Dissipated	Energy that spreads out.
Transfers	Energy is often transferred by heating or sound.

3. Speed	
Speed	How far something can travel in a certain time.
Units	Dependent on measurements taken *e.g. miles per hour, metres per second*
Speed Formula	$\text{speed} = \frac{\text{distance}}{\text{time}}$
Distance-Time Graph	Used to show how fast someone travelled during a journey. Also called a displacement-time graph
Displacement	Distance in a straight line between an object and its starting point.
Horizontal Line	Shows an object isn't moving on the distance-time graph.
Steep Line	Shows an object is moving quickly
Relative	Looking speed compared to another object which may be moving.