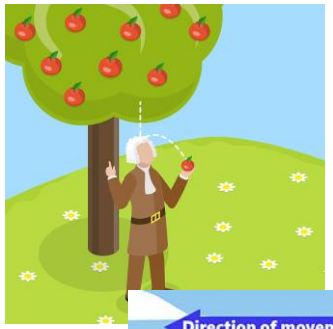
Science – Forces in Motion Knowledge Organiser

Learning Objectives	Core Knowledge
Explain that objects fall to Earth due to the force of gravity.	Gravitational force, or gravity, is a non-contact, pulling force between objects that have mass. Gravitational force increases as the mass of an object increases.
Explore and explain different types of friction such as air and water resistance.	Air resistance is a type of friction. It is a contact force and acts when an object moves through air. The air particles push against the object and slow its movement. Water resistance is a type of friction. It is a contact force and acts when an object moves through water. The water particles push against the object, slowing its movement.
Compare and describe, using toys and models, the effects of water resistance, air resistance and friction.	Friction, air resistance and water resistance are forces that oppose motion and slow down moving objects. Substances reduce the contact between two surfaces and therefore reduce frictional forces. Friction can also be reduced through streamlining,
Describe and demonstrate how simple levers, gears and pulleys assist the movement of objects.	A lever is a simple machine that provides a mechanical advantage to make it easier to lift a heavy load. A pulley is also a machine that provides a mechanical advantage to make it easier to lift a heavy load. Gears are toothed, interlocking wheels that can be place together to make a mechanism that provides a mechanical advantage.



Glossary	
Air Resistance	A frictional force that acts to slow an object's movement when it moves through air.
Friction	A force between two surfaces as they move across each other that always slows an object down.
Gravitational Force	A pulling force between objects that have mass.
Magnetism	The attraction and repulsion between two magnets or between a magnet and magnetic materials.
Streamline	Having a shape that can move quickly and effectively through a liquid or a gas.
Water Resistance	A frictional force that acts to slow an object's movement when it moves through water.