## Carr Head Primary School - Knowledge Organiser

Science Forces Year 5 Spring 2

Air-

## **Key Knowledge**

Isaac Newton is famously thought to have developed his theory of gravity when he saw an apple fall to the ground from an apple tree.

Water resistance and air resistance are forms of friction. Friction is sometimes helpful and other times unhelpful.

Pulleys can be used to make a small force lift a lighter load. The more wheels in a pulley, the less force is needed to lift a weight.

Cogs or gears can be used to change the speed, force or direction of a motion. When two gears are connected they always turn in the opposite direction to each other.

Levers can be used to make a small force lift a lighter load. A lever always rests on a pivot.

A force meter is measured in newtons and measures the weight of an object.

Any kind of force is really just a pull or a push

Magnetic force is an invisible force created by electrons. Magnetic force controls magnetism and electricity.

Frictional force is any force that is caused due to friction. An example of this might be when you put the brakes on your bike.

Gravity is the pulling force acting between the Earth and a falling object, for example when you drop something. Gravity pulls objects to the ground.

Surface resistance is the force on objects moving across a surface, such as an ice-skater skating on ice.

Air resistance is the force on an object moving through air, such as a plane

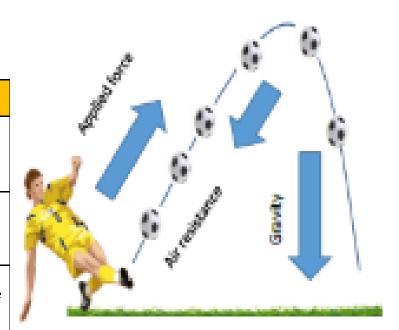
## ject. The faster an object moves, the greater the resistance air resistance The area around a large object when a weight Gravity can be felt. The sun's gravity keeps the planets orbiting around it Fric-The resistance of motion when one object rubs tion against another. Friction causes objects to slow down and the energy becomes heat. A push or pull on an object which can cause it to Force move, change speed, direction or shape. Measured in Newtons (N). Rotating machine part having cut teeth **Gears** The amount of matter contained in an object. Mass Measured in units such as g, kg. A simple machine consisting of a beam or rigid Levers rod pivoted at a fixed hinge. The frictional force of water against a moving Water resistance object. The faster an object moves, the greater the water resistance A wheel on axle or shaft that is designed to sup-**Pulleys** port movement and change of direction Buoyancy An object's ability to float upthrust A force that pushes objects up in water or air streamline To shape an object in a way that reduces the effect of air resistance or water resistance Mecha-Parts which work together in a machine. nism Device used to slow down an object that is fall-**Parachute** ing to the ground

ey Vocabulary

The frictional force of air against a moving ob-

## Know how to...

- Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
- Identify the effects of air resistance, water resistance and friction, that act between moving surfaces
- Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect



Working Scientically