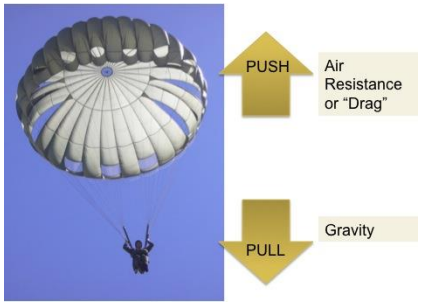
Weston Turville CE School Primary School – Year 5 Science

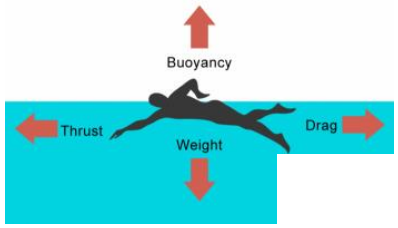
Topic: FORCES	Year:5	Strand: Physics

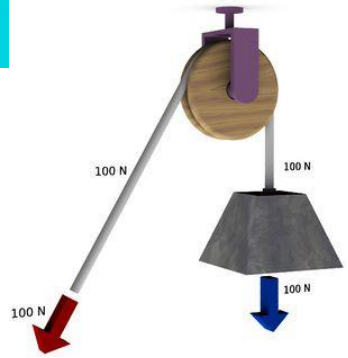
What Should I Already Know?

Forces are pushes and pulls
Magnets create force
Forces cause objects to start moving, change direction, change shape, speed up, slow down, start and stop moving.

Diagrams







Main Information

The Moon has a smaller mass than Earth so the gravitational pull on the Moon is smaller than it is on Earth.

Weight is how strongly gravity is pulling and object down. It is measured in newtons (N).

Water resistance and air resistance are forms of friction. Friction is sometimes helpful and sometimes unhelpful. For example, air resistance is helpful as it stops the skydiver hitting the ground at high speed. Friction on a bike chain can make the bike harder to pedal so it is 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.

Gears or cogs 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.

Vocabulary

Forces	Pushes and pulls
Gravity	A pulling force exerted by the Earth (or anything else which has mass).
Weight	The measure of the force of gravity on an object.
Mass	A measure of how much matter (or 'stuff') is inside an object.
Friction	A **force** that acts between two surfaces or objects that are moving, or trying to move, across each other.
Air resistance	A type of friction caused by air pushing against any moving object.
Water resistance	A type of friction caused by water pushing against any moving object.
Buoyancy	An upward force that a liquid applies to objects.
streamlined	When an object is shaped to minimise the effects of air or water resistance.
Newton meter	Instrument for measuring the amount of force
Gears and cogs	Gears or cogs can be used to change the speed, force or direction of a motion
Pulleys	Pulleys can be used to make a small force lift a lighter load.
Levers	Levers can be used to make a small force lift a lighter load.
Mechanism	Parts which work together in a machine. Examples of mechanisms are pulleys, gears and levers.
Gravitational pull	The pull that Earth exerts on an object, pulling it towards Earth's centre.

1. Forces can:	Start	End
Slow objects down		
Speed objects up		
Change objects shape		
Cause objects to change direction		

2. Gravity is a force that:	Start	End
Makes people float		
Pulls objects down		
Causes boat s to float		
Slows objects down		

3. The force that acts between surfaces is called	Start	End
Gravity		
Magnetism		
Buoyancy		
Friction		

4. Friction can:	Start	End
Slow things down		
Speed things up		
Cool things down		
Warm things up		

5. Air resistance is:	Start	End
A push force		
A pull force		
A magnetic force		
A form of gravity		

6. A streamlined shape:	Start	End
Will increase friction		
Will increase gravity		
Will move slowly through water		
Will move easily through water		

7. Pulleys are useful because	Start	End
They make objects change direction		
They reduce friction		
They need only a small force to lift a load.		
They increase friction		

8. Gears and cogs	Start	End
Can be used to speed up objects		
Can be used to change the speed, force or direction of a motion		
Can slow down motion		
Can help objects float		

9. Force is measured in:	Start	End
Grams		
Centimetres		
Kilograms		
Newtons		