

Science Knowledge Organiser

Southwold Primary School



Topic: Forces

Year: 5

Strand: Physics

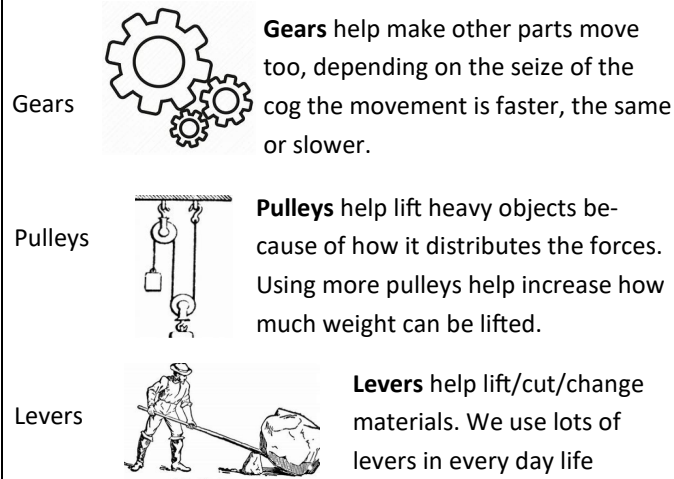
What should I already know?

- There are pulling and pushing forces. The effect of the force is a change in movement (move faster or slower and/or change direction).
- Different surfaces create different amounts of **friction**. The amount of friction created by an object moving over a surface depends on the roughness of the surface and the object, and the force between them.
- Magnets have a North Pole and a South **Pole**. Identical poles, North vs North and South vs South, **repel** each other. Different poles **attract**.

Different Forces



Gears, Pulleys and Levers



Vocabulary

applied force	A force that works on an objects.
buoyant	The force of a liquid pushing upwards on a surface, e.g. on a boat.
cog/gears	A circular shape with gaps. It helps transfer movements to slower or faster movements depending on the size of the cogs. A combination of cogs create gears.
drag	A force of air pushing upwards on a surface, e.g. on a parachute.
force	A force can be pulling or pushing.
friction	A force acting between two surfaces or objects when moving, or trying to move, across each other.
gravity	A pulling force between two objects (e.g. Earth and objects).
lever	A way of construction in tools that helps to make the effect of the applied force bigger.
magnetic	A force caused by an magnet.
Newton meter	A tool for measuring an applied force.
pulley	A way of looping rope or chain around round shapes which makes lifting weights easier.

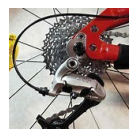
What will I know by the end of this unit?

- There are different forces.
- I understand how these forces affect an object.
- Forces can be measured using a Newton meter.
- I know that human inventions like the cog, pulley and levers make it possible to use forces for our benefit.

Working Scientifically

- Observe change and compare effects.
- Pattern seeking in results.
- Set up and performing science experiments, using tools to take measurements, presenting results in tables and graphs and draw conclusions based on outcomes.
- Making recommendations to improve the experiment.

Use of Gears, Pulleys and Levers in every day life



Cogs on a bike help us move our paddle force to our wheel using a chain. By using smaller cogs in combination with larger cogs, we can create **gears**.



Pulleys are still used on boats and are used for lifting objects in factories.



Levers are used in a lot of tools (nail clippers, scissors, hammers, nut crackers etc.).