Hillcross Primary School

Oh I do like to be beside the seaside!

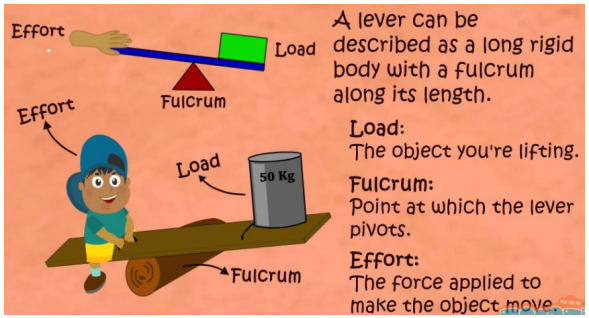
Year 5 Knowledge organisers 2024

How can I move a heavy object?

Applying past knowledge to new situations

Use what you learn!

We will apply our knowledge of **forces** from **Year 3** when we learnt about forces and magnets and the beginning of **Year 5** when we learnt about gravity, air and water resistance and friction.



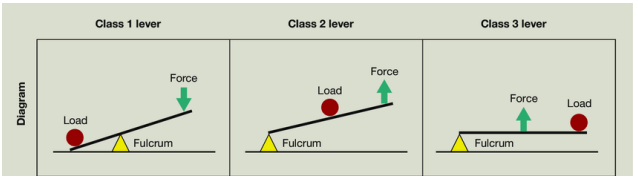
What is the purpose of a lever?

A **lever** is a **simple machine** that allows us to lift an object with **less effort.**

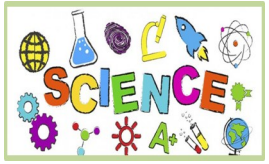
How does a lever work?

The position of the fulcrum, the load or the force applied to it tell you the type of lever and how it works.

There are three types of lever:



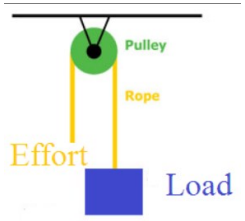
Force	Pushes and pulls that can influence an objects move-ment.
Lever	A simple machine that helps you life something using a pivot.
Pulley	A simple machine that helps you life something using a wheel.
Gear	Wheels with teeth that help change the speed or direc-tion of an object.
Effort	The amount of force applied.
Load	The weight that needs to be moved.
Fulcrum	An object used in a lever that allows the plank to pivot.
Mechanism	A device we create to help us.
Transfer	Move from one place to another

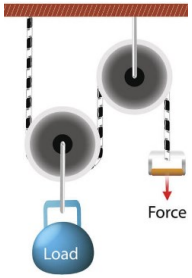


How does a funicular railway work?

A funicular railway uses a pulley system allowing passengers and cargo to be pulled up mountains with minimal energy.

Pulleys are used to make a small force lift a heavier load.





The more wheels in a pulley the less force it needs to life the weight.

Why do we have gears on a bike?

Gears are wheels with teeth that slot together. When one turns, the other turns too. They work in three ways:

1. **To increase the turning force.** Small gears turn quickly but with a smaller force, whereas large gears turn slowly with a greater force.
2. **To increase the speed.** If you connect a larger gear to a smaller gear, the smaller gear turns much more quickly to keep up.
3. **To change direction.** When you join two gears together, the second one will always turn in the opposite direction.