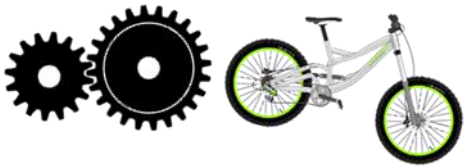
Roby Park Primary School Year 5

Physics

Forces



What we already know:

✓ The shape of some materials can be changed when they are stretched, twisted, bent and squashed.

We are learning to;

- Compare how things move on different surfaces.
- Notice that some forces need contact between two objects, but magnetic forces can act at a distance.
- Observe how magnets attract or repel each other and attract some materials and not others.
- Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.
- Describe magnets as having two poles.
- Predict whether two magnets will attract or repel each other, depending on which poles are facing.
- 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.

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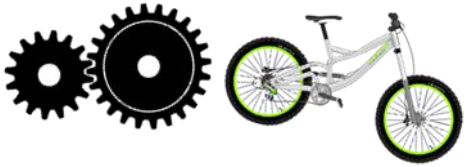


What we already know:

- ✓ The shape of some materials can be changed when they are stretched, twisted, bent and squashed.

Key Vocabulary

Force – A push or pull upon an object resulting from its interaction with another object.

Gears – A toothed wheel that works with others to alter the relation between the speed of a driving mechanism (e.g. engine) and the speed of the driven parts (e.g. the wheels)

Mass – The weight measured by an objects acceleration under a given force or by the force exerted on it by gravity.

Pull force – To draw or haul towards oneself or itself, in a particular direction.

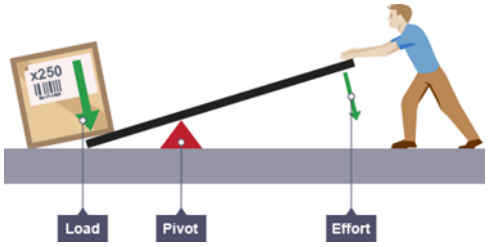
Push force – To move something in a specific way by exerting force.

Water resistance - A force that is caused by water with the force acting in the opposite direction to an object moving through the water.

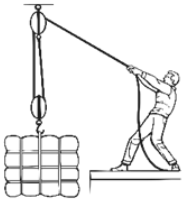
Spring - a spiral of wire which returns to its original shape after it is pressed or pulled

The Power of Five

Levers A lever is a simple machine that makes work easier to do. Examples of simple levers include cutting with scissors, or lifting the lid on a tin of paint with a screwdriver. Levers reduce the force needed to perform these tasks.



Pulleys
Used like levers to lift loads with less effort but for longer distances.
Rope is passed through a pulley which is attached to an anchor point and returned back to the ground to be pulled.



Gravity is a force that holds things to Earth's surface and prevents things from floating off into the atmosphere.

Air Resistance
Air resistance acts against gravity on falling or moving objects. It's what you feel on your hair when riding fast on a bike.

Friction
When objects are pushed or pulled, an opposing force can be felt. This opposite force is called 'friction'. Friction causes things to slow down or stop.

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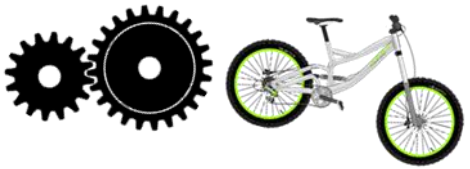

5Ws

What do we use to measure gravity?

Who first identified the force of gravity?

Which force pulls objects to the ground?

What is air resistance sometimes known as

What is water resistance a type of?

3 2 1

List 3 manmade things that can be used to make a force lift or change direction

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List 2 ways water resistance can be unhelpful.

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Recall I way air resistance can be helpful

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List 5 forces

VOCABULARY UNSCRAMBLE

r f c i i t n o
Acts between two surfaces as the move across each other

i r a e r s i s a t n e c
The force air exerts on a moving object.

i k o l r g m a s
Unit of measure used to measure and object's mass

Speedy Pencil. Write as much as you can remember in 5 minutes

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