

Health of Humans and Animals	Light and Astronomy	Forces and Magnets	Electricity	Our Environment and Living Things	Sound	Material Properties
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Year 5 Science: How can we get things moving?

Work Together Concept: **Forces and Magnets**

Crucial Knowledge:

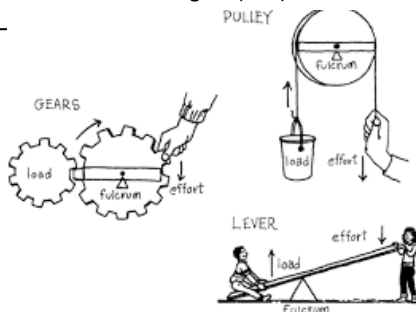
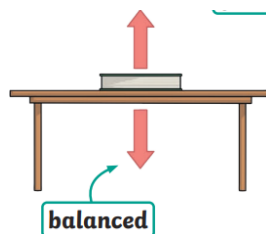
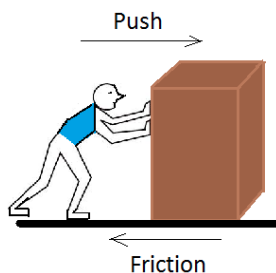
- Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
- Identify the effects of air resistance, water resistance and friction that act between moving surfaces.
- Recognise that some mechanisms, including levers, pulleys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

Prior Knowledge

- Compare how things move on different surfaces. (Y3 - Forces and magnets)
- Notice that some forces need contact between two objects, but magnetic forces can act at a distance. (Y3 - Forces and magnets)
- Observe how magnets attract or repel each other and attract some materials and not others. (Y3 - Forces and magnets)
- 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. (Y3 - Forces and magnets)
- Describe magnets as having two poles. (Y3 - Forces and magnets)
- Predict whether two magnets will attract or repel each other, depending on which poles are facing. (Y3 - Forces and magnets)

Future Knowledge

- Forces as pushes or pulls, arising from the interaction between two objects. (KS3)
- Using force arrows in diagrams, adding forces in one dimension, balanced and unbalanced forces. (KS3)
- Moment as the turning effect of a force. (KS3)
- Forces: associated with deforming objects; stretching and squashing – springs; with rubbing and friction between surfaces, with pushing things out of the way; resistance to motion of air and water. (KS3)
- Forces measured in Newtons, measurements of stretch or compression as force is changed. (KS3)



Vocabulary:

Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears

Key Learning

A force causes an object to start moving, stop moving, speed up, slow down or change direction. Gravity is a force that acts at a distance. Everything is pulled to the Earth by gravity.

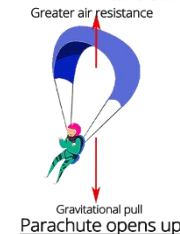
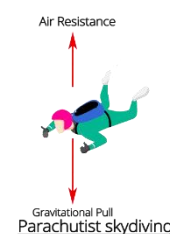
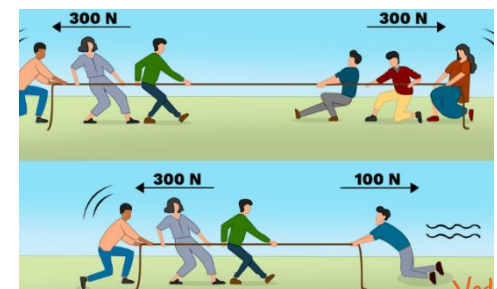
This causes unsupported objects to fall. Air resistance, water resistance and friction are contact forces that act between moving surfaces.

The object may be moving through the air or water, or the air and water may be moving over a stationary object.

A mechanism is a device that allows a small force to be increased to a larger force. The pay back is that it requires a greater movement. The small force moves a long

Aim High:
To know about Isaac
Newton's laws.

Shine Bright:
To make a moving
vehicle using pulleys.



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