

Forces and Magnets

Learning Objective:

To explore how magnetic forces work.



What forces are in action in this picture?



What is moving?

Why is it moving?

What is in contact to create movement?

The skateboard (and therefore the woman on the skateboard) are being pulled along by the dog. In order for the force to create movement there has to be contact between the objects. The woman is standing on the skateboard, holding a lead that is attached to the dog. This allows the pull force to create movement. If the woman and the dog weren't connected, the skateboard wouldn't be moving.



Can you think of
any forces that do not
need contact to make
things move?



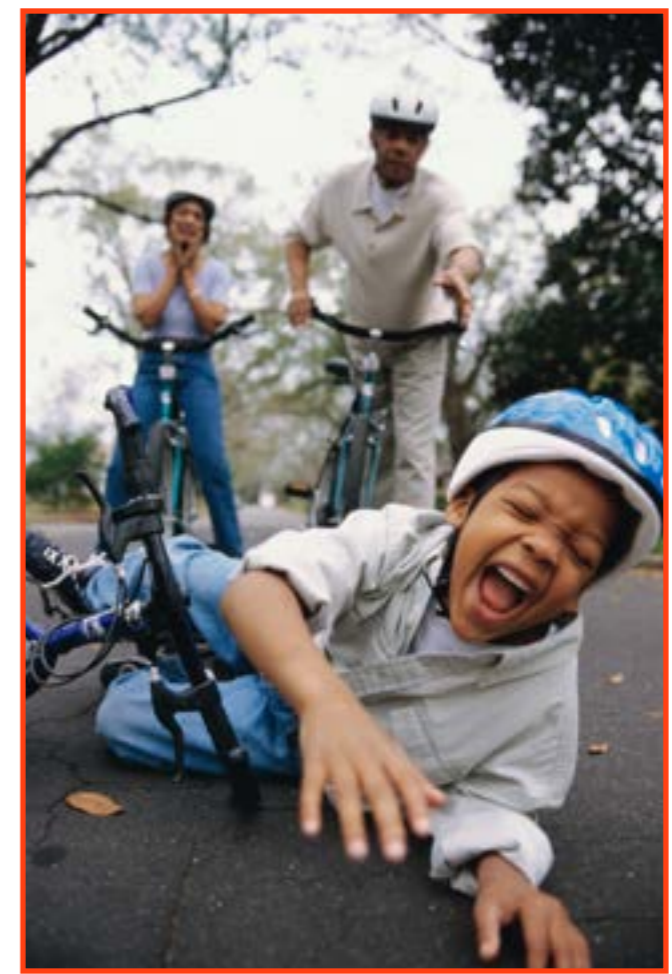
Some forces, such as gravity, do not need contact between two objects to make things move. Gravity is a force that pulls everything towards the centre of the Earth. Without gravity, everything would be weightless.



Gravity is what makes fruits fall from trees.



Gravity is what makes rain fall from the clouds.

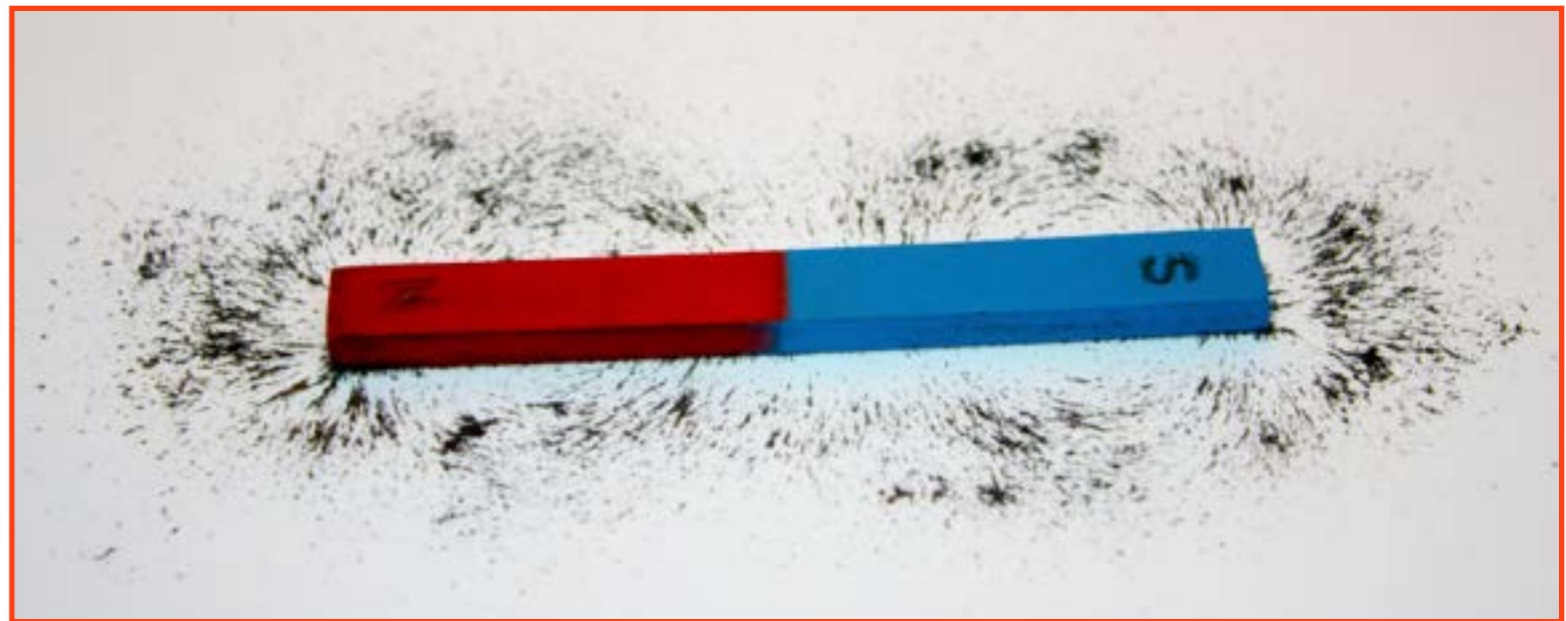


Gravity is what makes you fall downwards.



Another force that doesn't need contact between objects to make things move is magnetism. Magnets are rocks or pieces of metal that have a magnetic field around them. This means they can pull objects towards them or push objects away from them without having to make contact with the other object.

You can't usually see the force around a magnet but if you drop iron filings around one, you can see the magnetic field.





Why
do magnets have
two different
ends?



Each magnet has two poles, a north pole and a south pole. They are called the north and south poles because if a bar magnet is able to rotate, the north pole will always point north and the south pole will always point south.



This is how a compass works. When the needle on the compass spins, the north pole spins towards the north and the south pole spins towards the south. This way, you can use a compass to work out which direction you need to go.





Today you will be exploring what happens when magnets are put together. Will they attract or repel?



What would happen if a north pole was put against a north pole?



What would happen if a south pole was put against a south pole?



What would happen if a south pole was put against a north pole?