

**Key questions to discuss:**

- What is a force?
- What is an example of a pull force?
- What is an example of a push force?
- What can forces cause objects to do?
- What is friction?
- What type of surface has low friction?
- What are contact forces?

**Enquiry Question**

How does the material on the ramp affect the distance a car travels?

**Vocabulary**

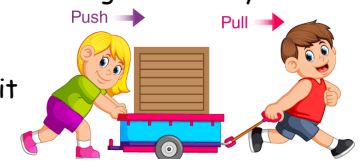
Push	to apply a force to try and move an object away
Pull	to apply a force to try and move an object closer
Force	a push or pull
Contact force	a push or a pull that affects objects which are touching
Friction	a contact force that is caused by one object being pushed across the surface of another
Smooth	an even surface
Rough	an uneven surface
Independent variable	what will change in an investigation
Dependent variable	what will be measured in an investigation
Control	what is kept the same in an investigation

**Forces**

Forces are pushes and pulls. Pushes move things away from you. Pulls move things towards you.

These forces change the motion of an object.

They will make it start to move or speed up, slow it down or even make it stop.



For example, when a cyclist pushes down on the pedals of a bike, it begins to move. The harder the cyclist pedals, the faster the bike moves. When the cyclist pulls the brakes, the bike slows down and eventually stops.

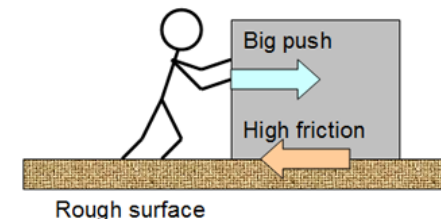
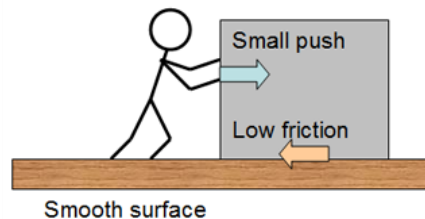
Forces act in opposite directions to each other.

When an object moves across a surface, friction acts as an opposite force.



Friction is a force that holds back the motion of an object.

Some surfaces create more friction than others, which means that objects move across them more slowly. On a ramp, the force that causes the object to move downwards is gravity. Objects move differently depending the surface, object itself and the external force.



A force can change the shape of an object.

