

The background is a light blue color. It is decorated with several colorful arrows pointing in different directions (red, teal, yellow, orange) and 3D rectangular blocks in blue and orange. Some of the blocks are stacked or arranged in a way that suggests movement or force.

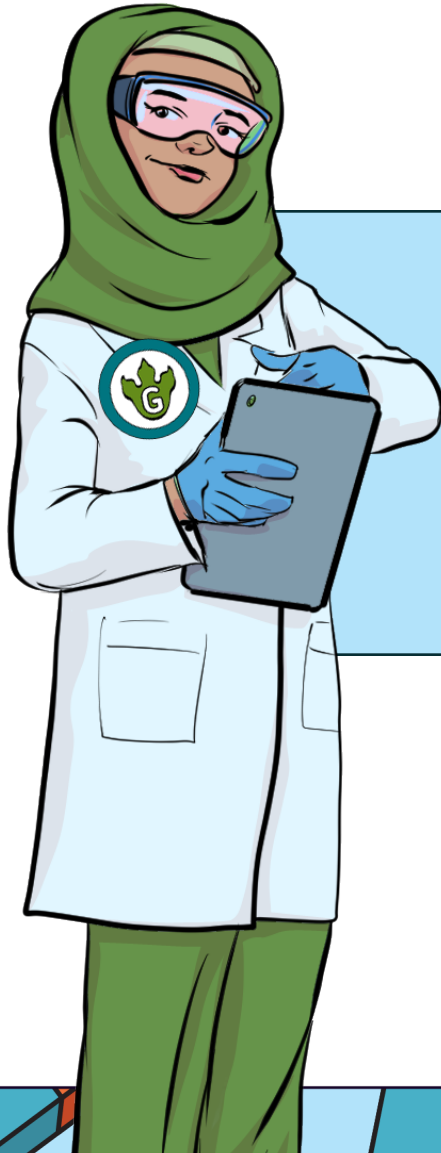
Forces

**I can identify the effect of friction
between moving surfaces.**



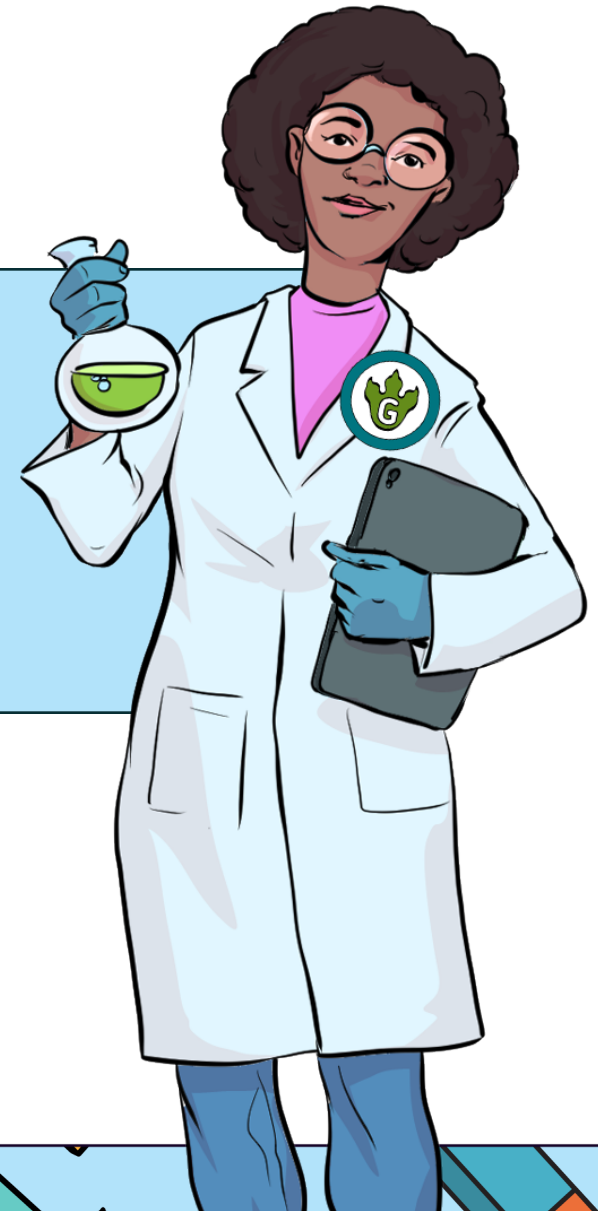
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Thinking Time



What do we mean by the
word force?

Write what you think on your
pre-assessment sheet.



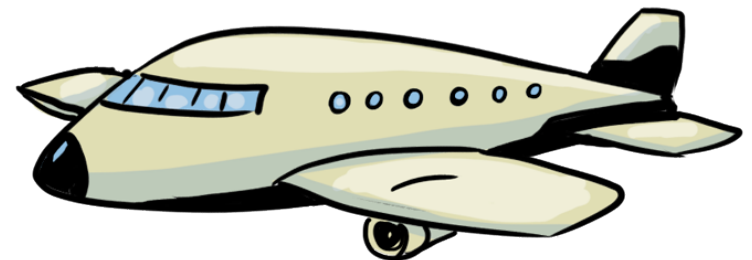
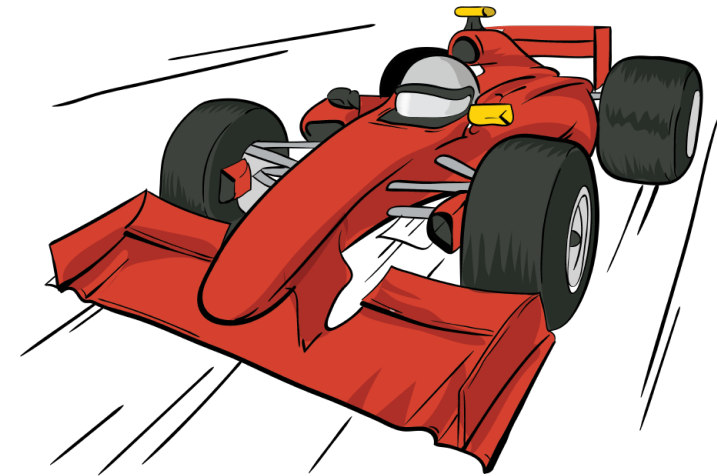
Force

We can't see forces, but they are an important part of our everyday lives.

Forces are acting on us all the time! Forces affect us when we drive to school or fly on holiday.

Because human beings have a good knowledge of forces, we can build houses that don't fall down and chairs that don't collapse. It enables us to launch satellites into orbit that can beam television signals around the world and map the planet from space!

Simple forces are **pushes** and **pulls**.



Partner Activity

On your sheet you have a person
performing an action.

There are forces acting on this person.
Annotate the picture to show which forces you think
are acting on the person.



Partner Activity

Discussion Time



Partner Activity

Discussion Time



Partner Activity

Discussion Time



Friction

Friction is **a force** created between two surfaces when **they rub together**.

Friction creates heat and always slows down an object.
Rough surfaces create more friction than smooth surfaces.

Can you think of an example of
when friction occurs?



Friction in action!

Friction is very useful. We need friction to create a **good grip between the soles of our shoes and the ground**, or between our **car tyres and the road**. At other times, friction can be something we want to reduce. **Oil or lubricants** are added to door hinges or the gears of our bicycles to reduce friction and make them **move more easily**.



Can you think of an example of when we might want to reduce friction?



Group Activity

On your table, you have two **jelly cubes** and a **pair of pencils**.
One of the jelly cubes has been **dipped in oil** and the other **hasn't**.

Your aim is to pick up the jelly cube with your pencils
(pretend they are chopsticks!)

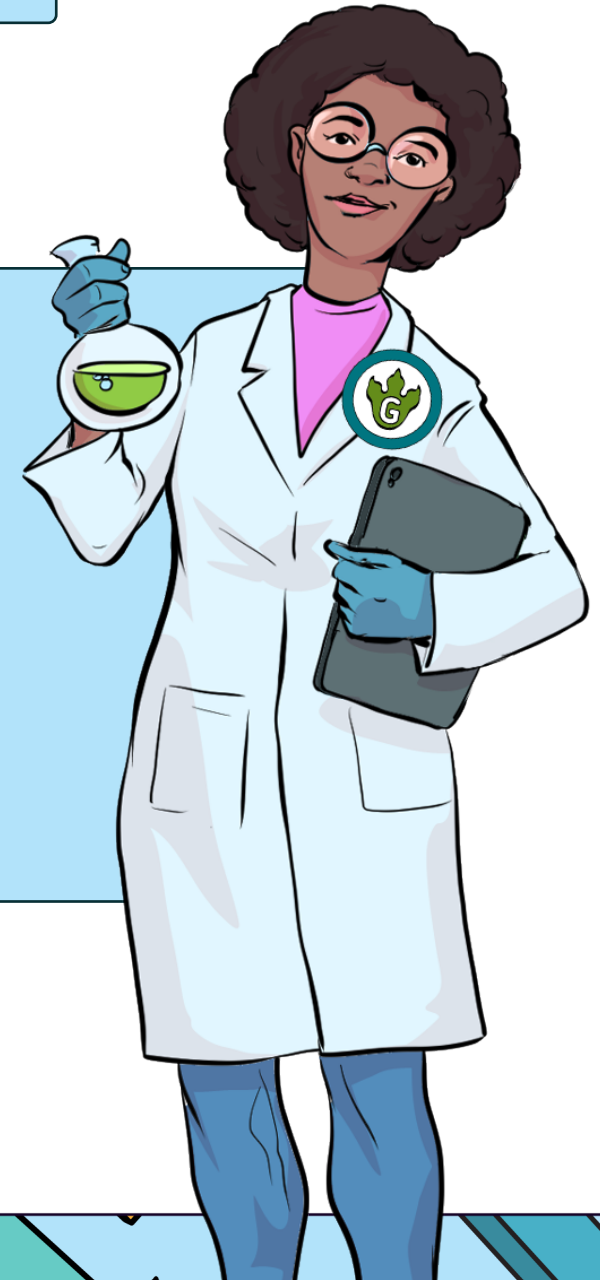
Which jelly cube do you think will
be easier to **pick up and why?**



Group Activity



Which jelly cube was easier
to pick up and why?
How does this activity
link to friction?

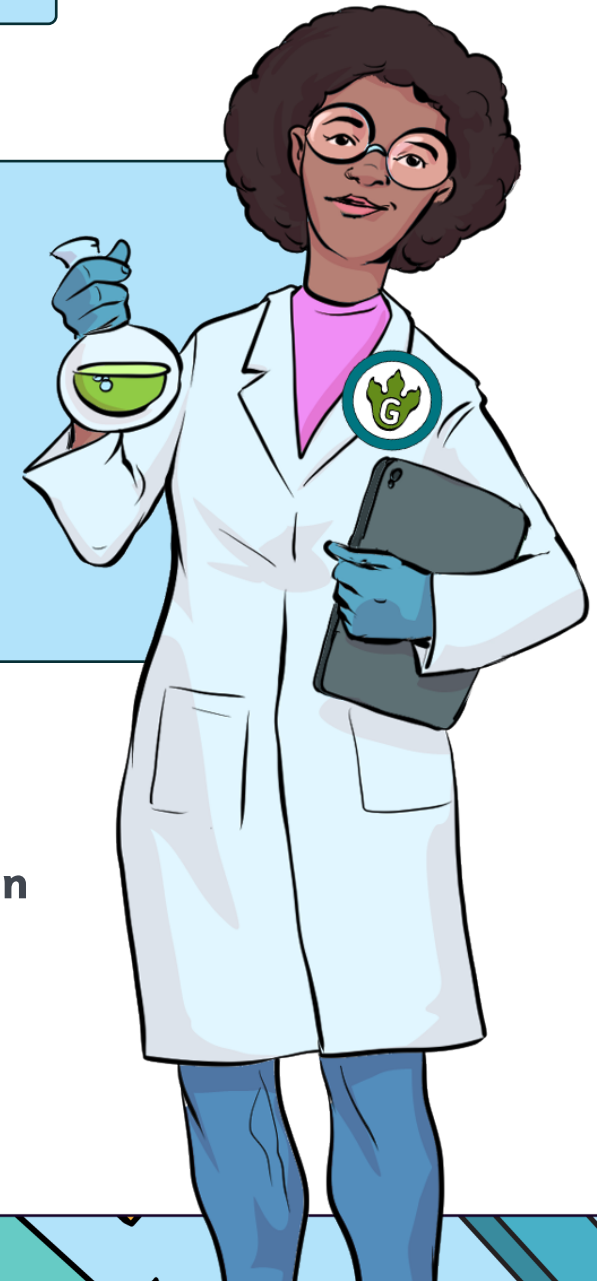


Independent Activity



You are now going to think
about friction in the
world around us.

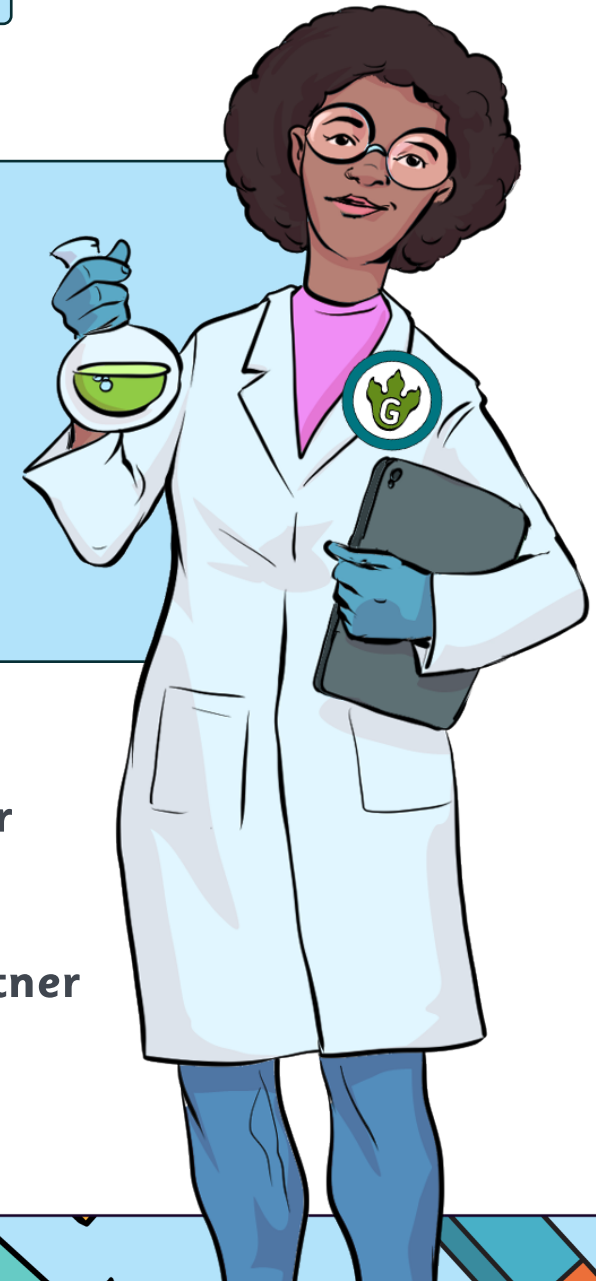
You have a variety of different scenarios.
You need to sort them into the categories on
your sheet.



What did we find out?



Today we have learnt
about friction which is a
type of force.



Partner 1 - Explain what friction is to your partner without using the word 'friction'.

Partner 2 – Explain what force means to your partner without using the word 'force'.

