Science

Forces

Summer 2021

Class Lynher

We thought about the forces we had learnt about before.

Talk about Forces

To identify forces acting on objects.

Read the story together. Highlight or underline examples of forces in the story. Then, in the second column, briefly explain the forces that are being applied in each example. The first one has been done for you.

The magician reached inside her magic box and lifted up a gigantic magic wand high into the air.	**The magician's force is lifting it up and gravity is pulling it down to Earth.**
She pushed her very heavy magic box along the wooden floor so that it was by the side of the stage.	Pushing force ✓
Next, she juggled with silk handkerchiefs. After she threw them into the air, they fell gently downwards for her to catch.	Gravity letting them fall and air resistance making the scarves go down. ✓
After, she lifted a robot penguin out of the box. She held it high in the air.	The magician force is lifter up the robot ✓
There was a screen behind the magician and she pushed the screen to one side. Behind the screen was a paddling pool. The magician placed the penguin into the water and it started to swim a length of the pool.	The magicians force pushed the screen and boyancy lit the penguin swim. ✓
The children laughed and cheered, although they weren't sure what was magical about the robot swimming in the pool! The magician ended her show by popping a big party popper. The popper shot long strips of colourful paper into the air, which then fell softly to the ground.	Gravity pulls the string down and air resistance makes it go slowly. ✓

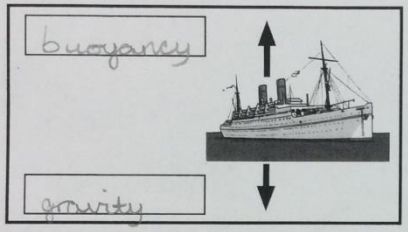
Forces in Action

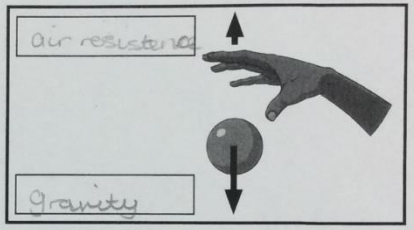
SA: I have used confidence to identify forces acting on objects.
WS: To find out more about forces.
Megan 23.6.2021 confidence

To identify forces acting on objects.

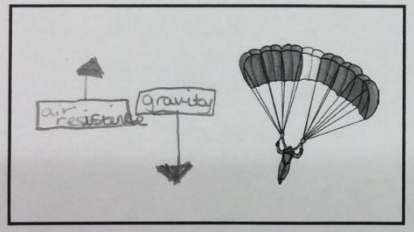
In the two pictures below, the arrows represent forces acting.

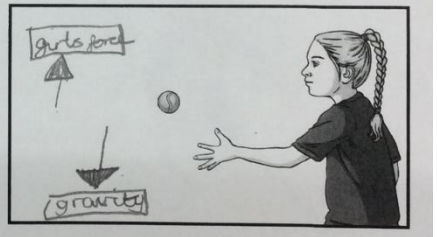
Write the names of the forces in the boxes.



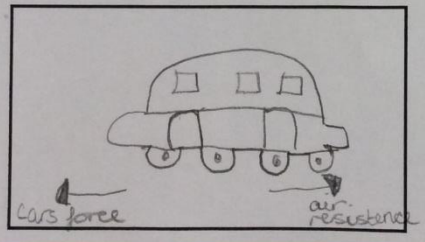


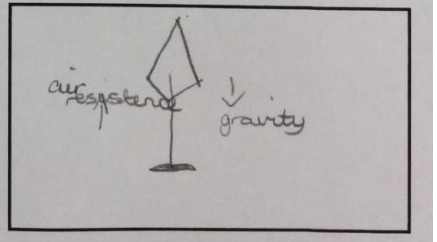
Draw your own arrows and label them to show the forces acting.





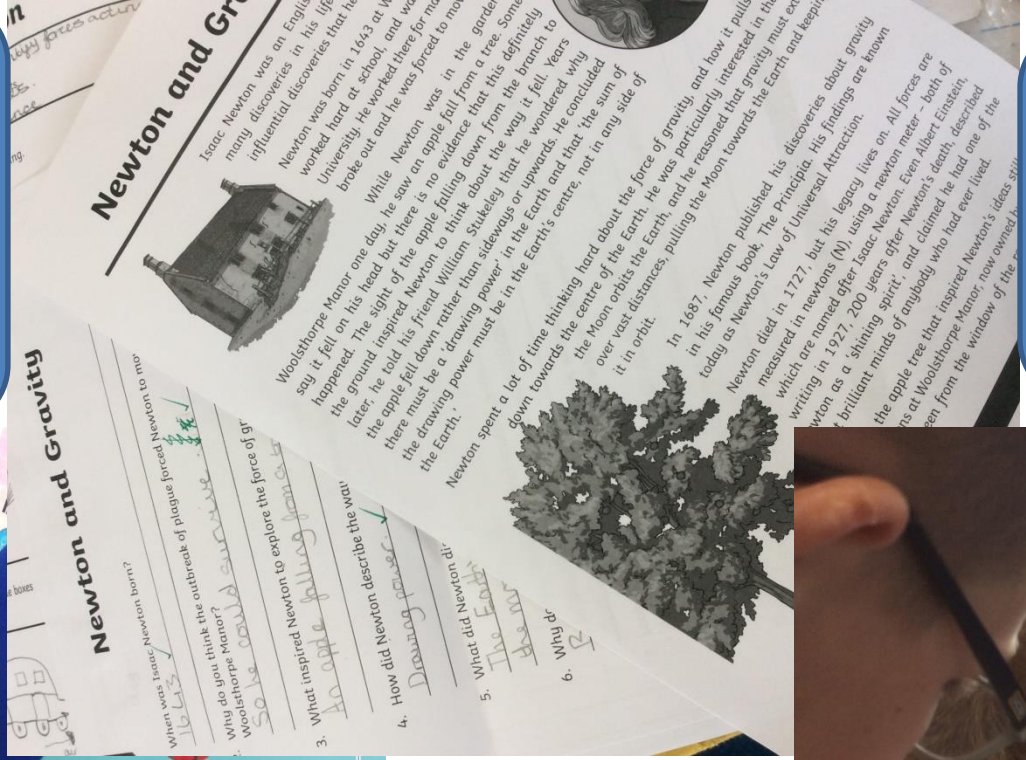
Draw your own pictures in the boxes below. Then label and draw your own arrows to show the forces acting.





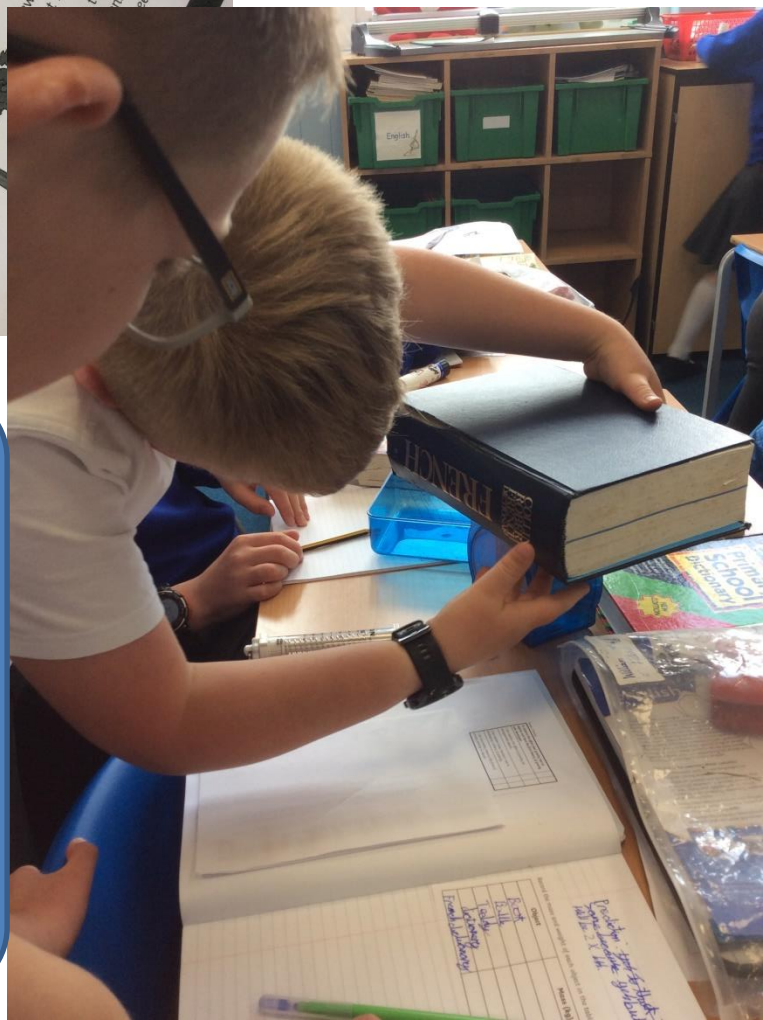
Then we identified forces in action both in writing and pictures.

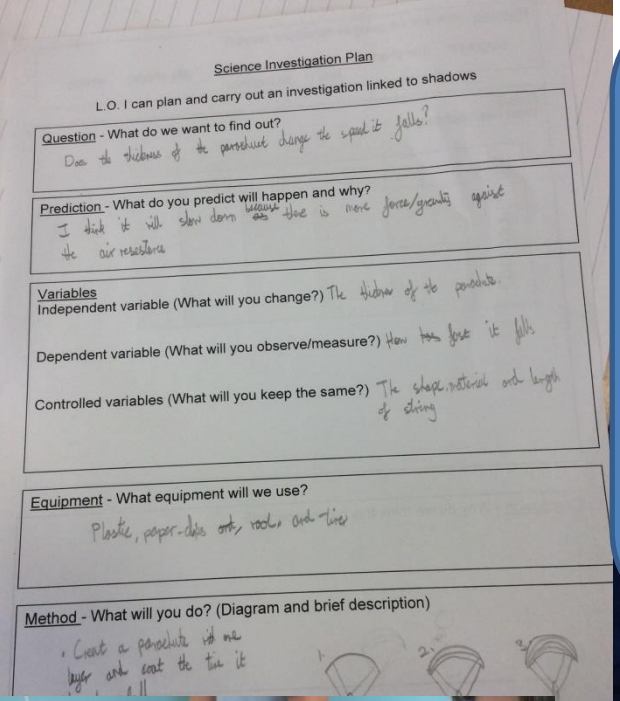
Why is an apple important to the history of gravity?



We learnt the difference between weight and mass.

We used a Newtonmeter to measure weight.




Science Investigation Plan

L.O. I can plan and carry out an investigation linked to shadows

Question - What do we want to find out?

Does the thickness of the parachute change the speed it falls?

Prediction - What do you predict will happen and why?

I think it will slow down because there is more force/gravity against the air resistance

Variables

Independent variable (What will you change?) The thickness of the parachute

Dependent variable (What will you observe/measure?) How fast/how long it falls

Controlled variables (What will you keep the same?) The shape, material and length of string

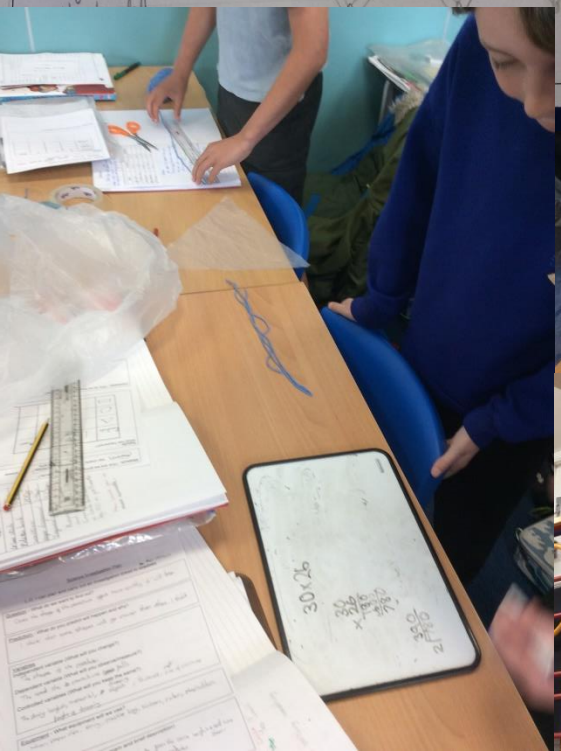
Equipment - What equipment will we use?

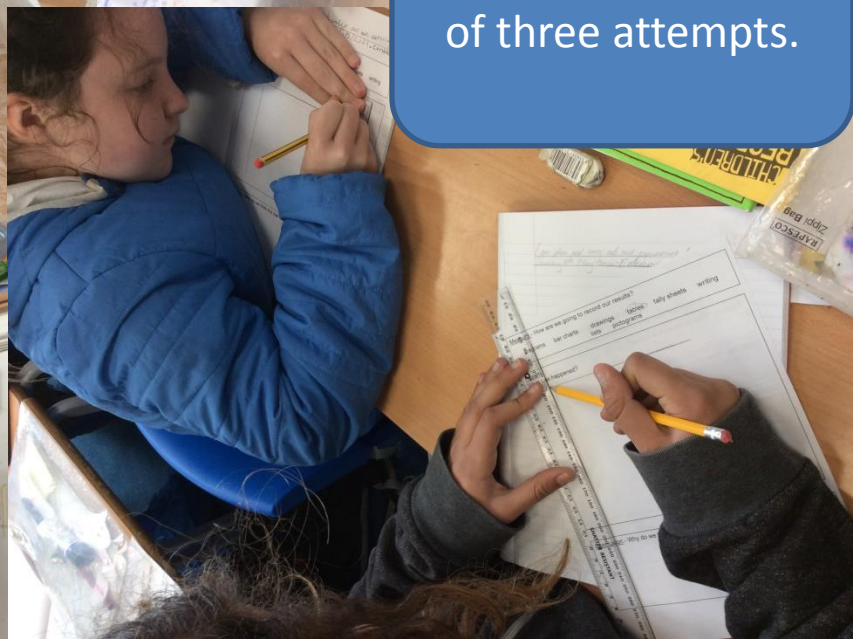
Plastic, paper clips, rocks, and tape

Method - What will you do? (Diagram and brief description)

- Create a parachute with one layer and coat the tape it

We planned an experiment to test air resistance using parachutes. We thought about what we could change and thought of size, shape and thickness.





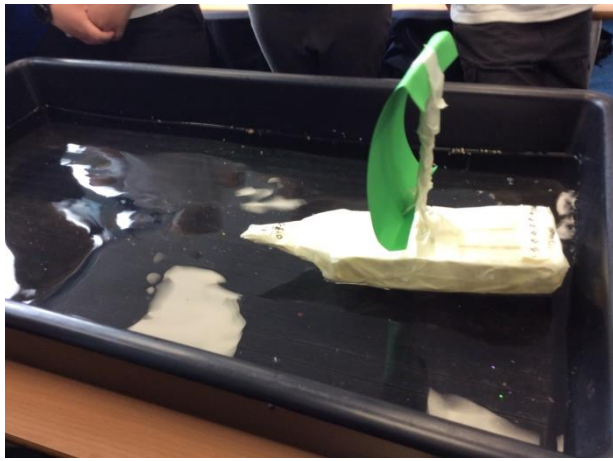
We took the mean of three attempts.

We learnt how to make something aerodynamic.

We used what we had learnt to make boats.





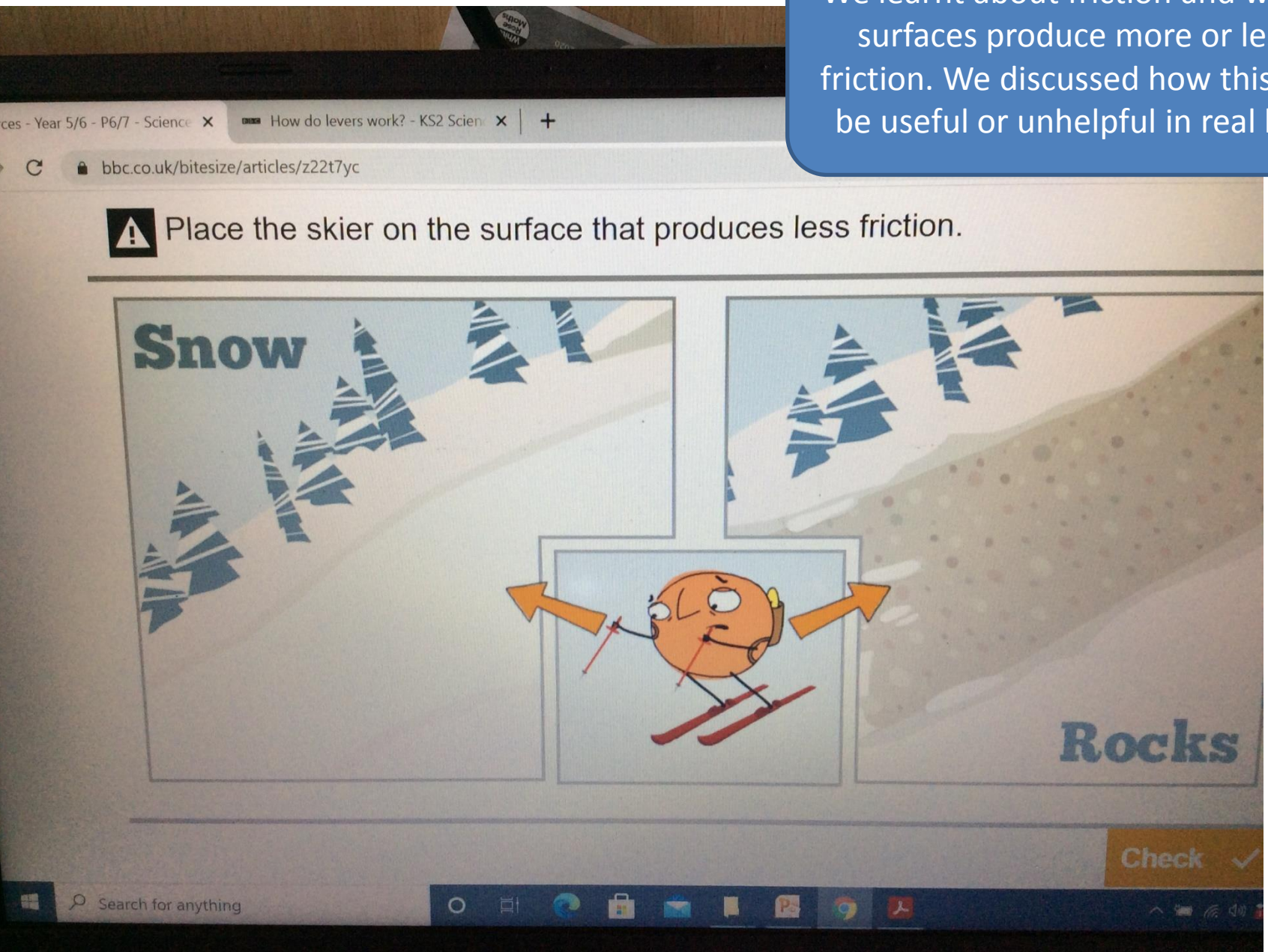



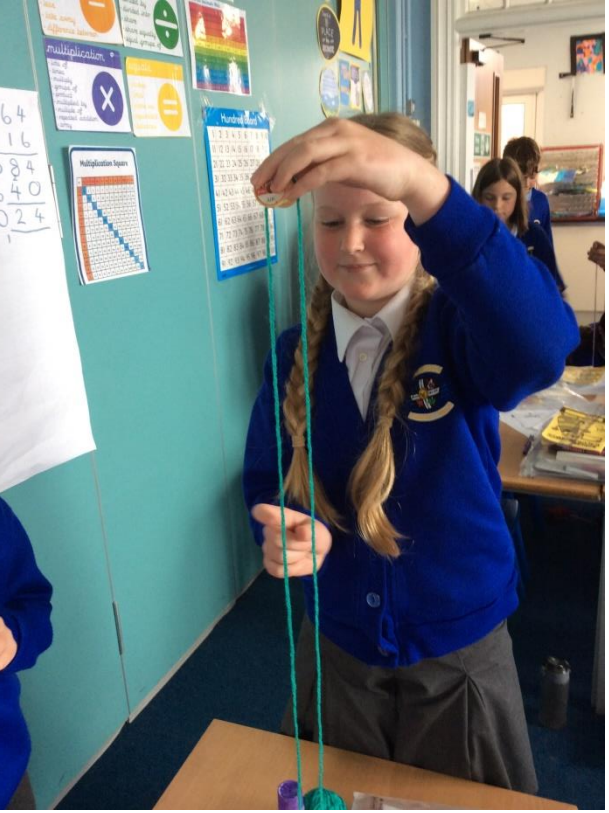
Then we timed how long it took for each boat to cross the water.

This shows the results from slowest to fastest.

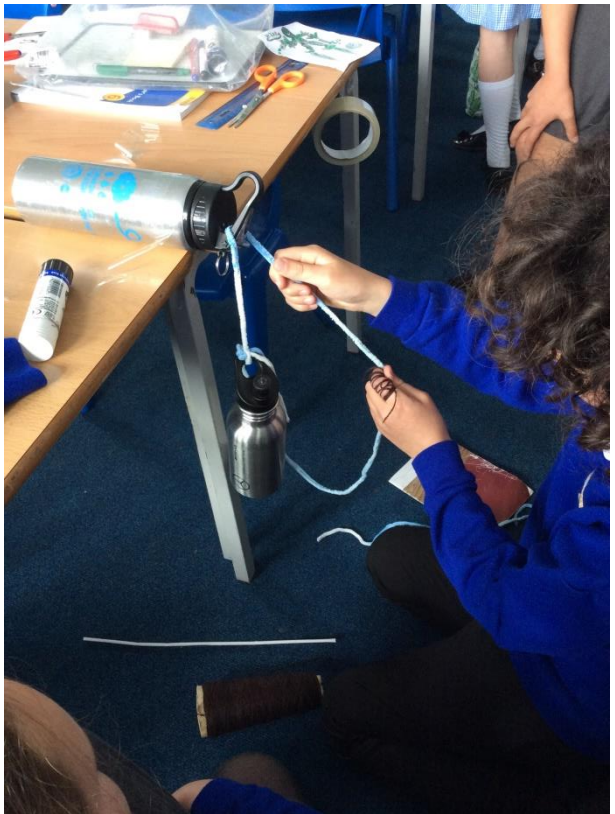
This was the winning boat. It was narrow and had a pointed bow.

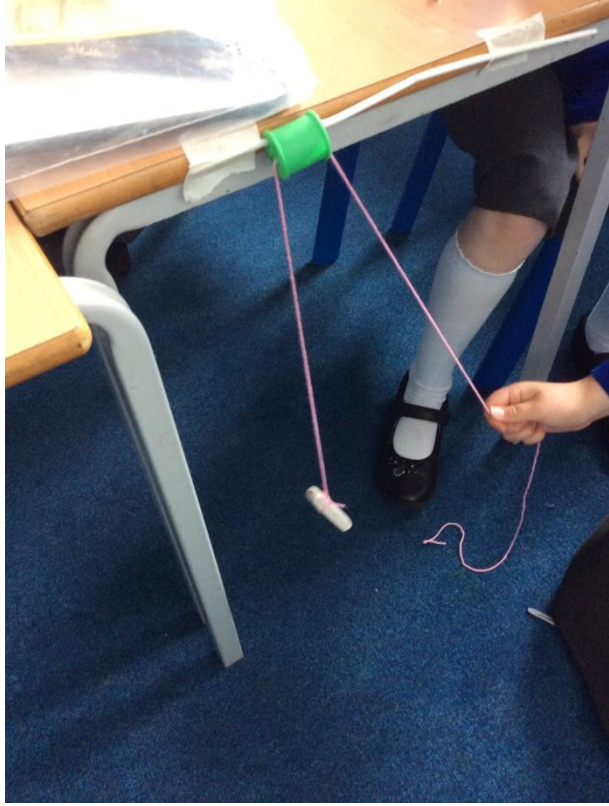
We learnt about friction and which surfaces produce more or less friction. We discussed how this can be useful or unhelpful in real life.





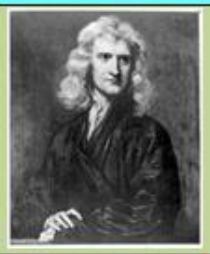
We looked at pulleys, gears and levers and saw how they can be useful to produce a bigger force. We then made our own.





Science FLE Y5/6 Forces

SMSC
Social – Children will develop their cooperative working skills



Forever Facts

Isaac Newton is famously thought to have developed his theory of gravity when he saw an apple fall to the ground from an apple tree.

It is the Earth's gravitational pull which keeps us on the ground.

Forces are pushes or pulls.

Friction can be helpful or unhelpful for example air resistance stops a skydiver hitting the ground too quickly but friction on a bike chain can make it harder to pedal.

The greater the mass of an object, the greater the gravitational pull. Therefore it is smaller on the Moon than Earth but stronger on Jupiter.

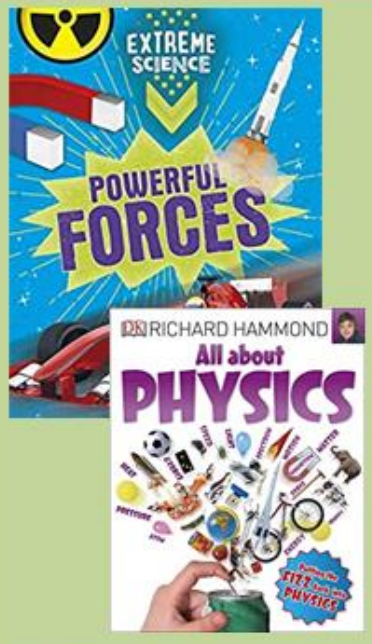
Skills

I can identify and explain the effects of forces

I can take accurate measurements

I can make predictions, record results and report findings.

Exciting Books



Our Endpoint

To use their understanding of forces to design a mechanism for a purpose

Subject Specific Vocabulary

gravity	A pulling force exerted by the Earth (or anything else which has mass)
weight	The measure of the force of gravity on an object measured in newtons (N)
mass	A measure of how much matter is inside an object measured in kilograms (kg)
friction	A force that acts between two surfaces or objects that are moving, or trying to move, across each other
air resistance	A type of friction caused by air pushing against any moving object
water resistance	A type of friction caused by water pushing against any moving object
buoyancy	An upward force that a liquid applies to objects
streamlined	When an object is shaped to minimise the effects of air or water resistance
mechanism	Parts which work together in a machine e.g. pulleys, gears, levers