

Class Tamar

Science

Forces and magnets

We learnt about the two different forces: pushes and pulls. We were able to notice that some forces need contact between two objects by identifying the different types of forces acting on objects. In pairs, we made a 'freeze frame' and the class had to guess what force was being shown and why.

The tug of war teams pull the rope.

The rowers arms uses a push and pull force to move on the water.



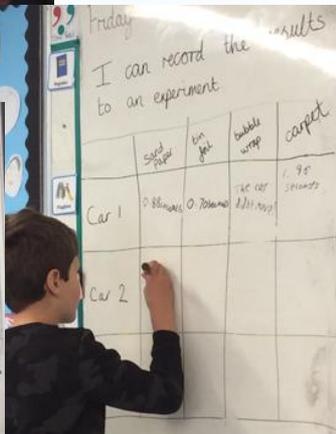
We planned and investigated the effects of friction on different surfaces. We looked at the speed of a toy car over sand paper, tin foil, bubble wrap and carpet.

I predict that sand paper will have the least friction.

I think that the bubble wrap will have the most friction as the car will find it difficult to move on the bumps.



	Sand paper	tin foil	bubble wrap	carpet
Car 1	0.88seconds	0.70seconds	the car didn't move	1.90 seconds
Car 2	1.12 seconds	0.83 seconds	the car didn't move	1.53
Car 3	1.26Sec	0.88Sec	the car didn't move	1.93 seconds



We found out that the surface with the most friction was bubble wrap. This is because the surface is very bumpy causing more friction against the car. The material with the least friction was tin foil.

We investigated the strength of different magnets. We observed how magnets attract or repel each other and attract some materials and not others.

The trophy looks like it should be magnetic because it is shiny but it is made of plastic.

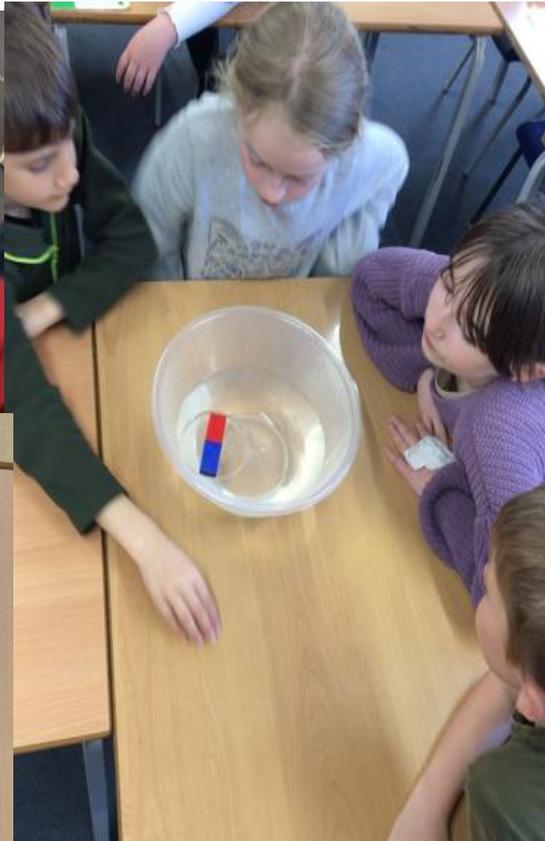


The stronger magnets were able to hold more paperclips.



We were able to describe magnets as having two poles and predict whether two magnets will attract or repel each other, depending on which poles are facing. We made our own compasses to test whether compasses always pointed north-south.

The North pole of the magnet is pointing North and the south pole of the magnet is pointing South.



We applied what we learnt over the unit to make our own magnetic games. We demonstrated these to our classmates and had a go at playing each others.

My game uses magnets on a string (the fishing rod) to pick up the paperclips (which are the fish) from the bowl.

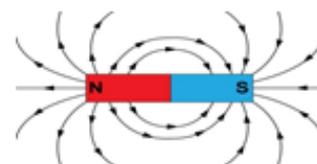


You have to make your way through the maze but you must only move the counter using a magnet under the table.



**What I have learnt before:**

I know the different properties for materials like: metal, plastic, wood and glass.

**Forever Facts**

Different surfaces create different amounts of friction. The amount of friction created by an object moving over a surface depends on the roughness of the surface and the object, and the force between them.

Forces will change the motion of an object. They will either make it start to move, speed up, slow it down or even make it stop.

A magnetic field is invisible.

Like poles repel. Opposite poles attract.

The needle in a compass is a magnet. A compass always points north-south on Earth.

**Skills**

I can use precise scientific language.

I can ask relevant questions.

I can make predictions based on scientific knowledge

I can recognise the importance of the evidence collected

I can make careful observations, appropriately record my results and use them to develop further investigations.

**Culture capital:** *Children will gain skills to collect data and use this to draw their own conclusions.*

*The jobs it can be used in are: scientists, magnetic engineers.*

**Exciting Books****Our Endpoint**

To design and make a magnet game!

**Subject Specific Vocabulary**

forces	Pushes or pulls.
friction	A force that acts between the two surfaces or objects that are moving, or trying to move, across each other.
surface	The top layer of something.
magnet	An object which produces a <b>magnetic force</b> that pulls certain objects towards it.
magnetic	Objects which are <b>attracted</b> to a <b>magnet</b> are <b>magnetic</b> . Objects containing iron, nickel or cobalt metals are <b>magnetic</b> .
magnetic field	The area around a <b>magnet</b> where there is a <b>magnetic force</b> which will pull <b>magnetic</b> objects towards the <b>magnet</b> .
poles	North and south <b>poles</b> are found at different ends of a <b>magnet</b> .
repel	<b>Repulsion</b> is a force that pushes objects away. For example, when a north <b>pole</b> is placed near the north <b>pole</b> of another <b>magnet</b> , the two <b>poles repel</b> (push away from each other).
attract	<b>Attraction</b> is a force that pulls objects together. For example, when a north <b>pole</b> is placed near the south <b>pole</b> of another <b>magnet</b> , the two <b>poles attract</b> (pull together).