# FAO Parent/Carer

Dear parent/carer,

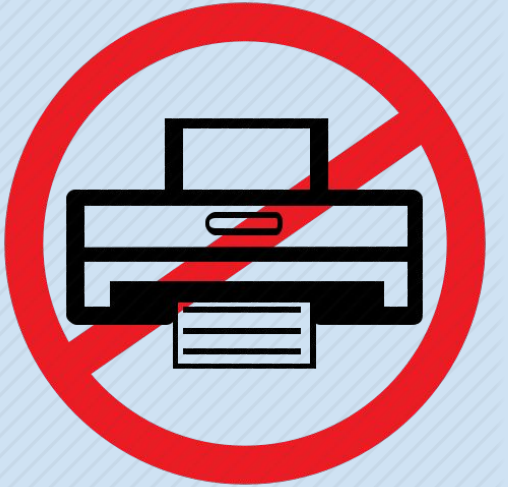
We do not recommend printing these slides.

Children can work through the lesson on the screen of your device and record their work on blank paper/in a book.

You can take a picture of the finished work and email it over to the teachers.

Thank you for the work you are doing.

Mr Mitchell



# Monday 18th January 2021

**S.K.L.O: To understand that some forces need contact between two objects, but magnetic forces can act at a distance.**

**W.S.L.O: To represent findings in diagrams.**

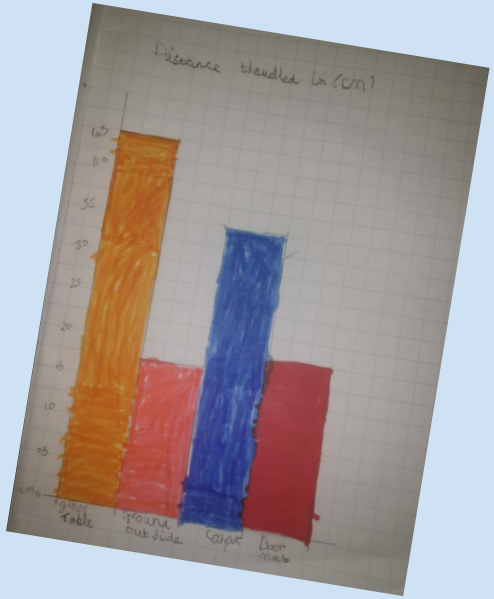

*Some great examples of your data collection as part of your inquiry!*

**<u>REMEMBER MORE:</u>**
**<u>Previous learning sentences.</u>**

1) A force is a _____ or a _____.

2) We learned about a type of force, that requires sliding of two surfaces against each other. This is called _____.

3) We set up an inquiry to see how far a coin would travel on varying surfaces. We recorded our findings in a ____ chart.



**S.K.L.O: To understand that some forces need contact between two objects, but magnetic forces can act at a distance.**

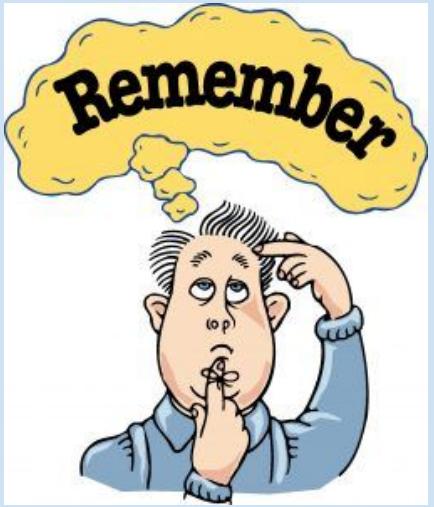
**W.S.L.O: To represent findings in diagrams.**

## REMEMBER MORE: Check it!

1) A force is a push or a pull.

2) We learned about a type of force, that requires sliding of two surfaces against each other. This is called friction.

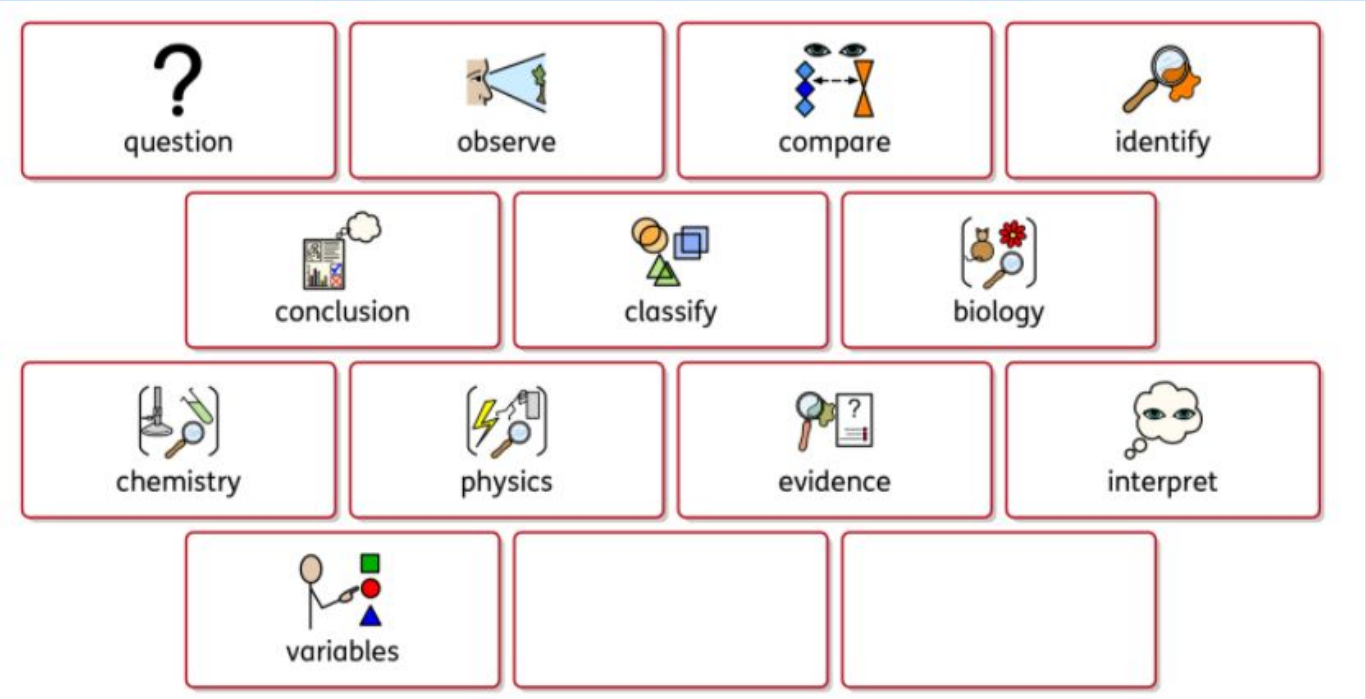
3) We set up an inquiry to see how far a coin would travel on varying surfaces. We recorded our findings in a bar chart.



**S.K.L.O: To understand that some forces need contact between two objects, but magnetic forces can act at a distance.**

**W.S.L.O: To represent findings in diagrams.**

## ***Let's quickly say our Science vocabulary!***

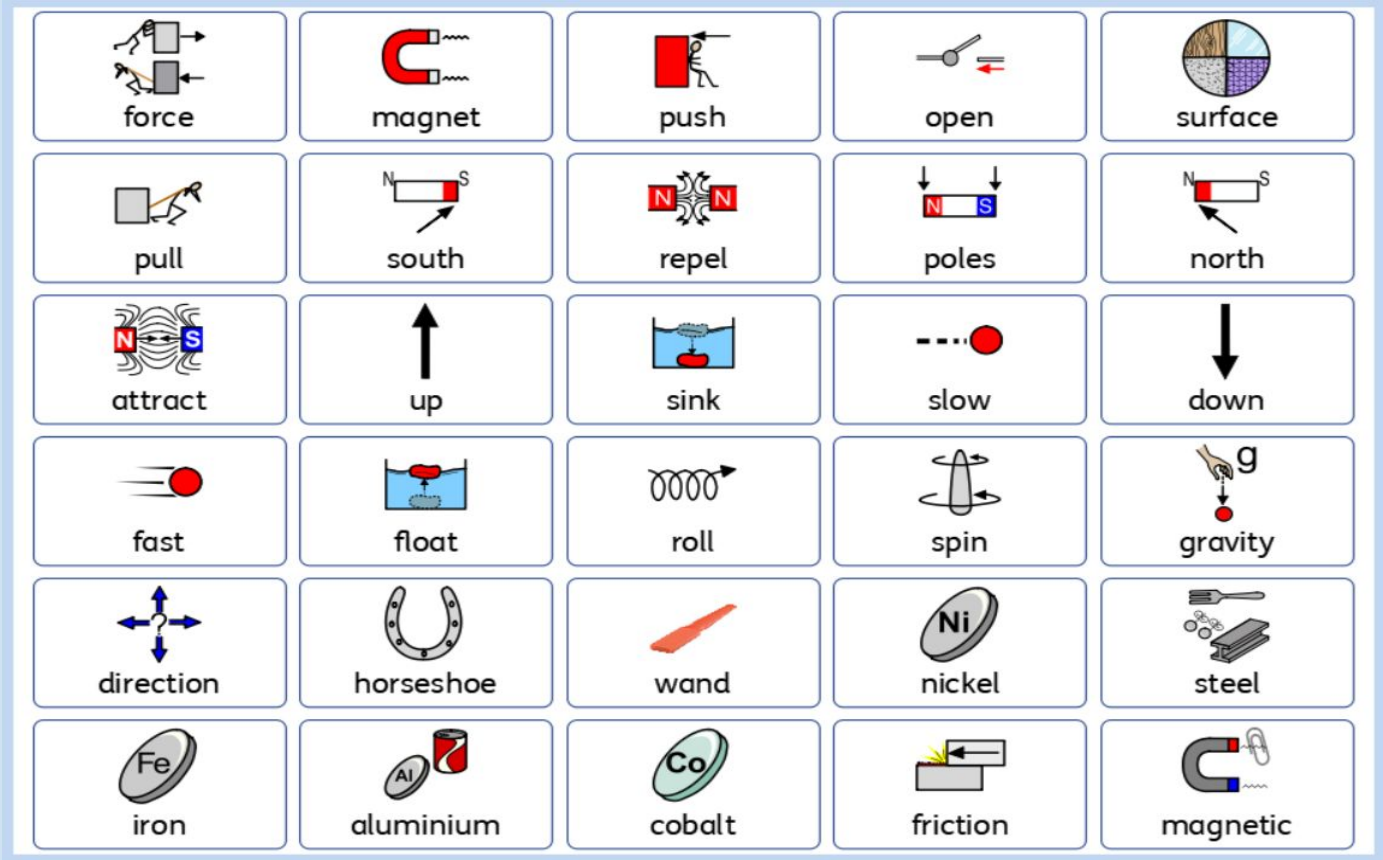


**S.K.L.O: To understand that some forces need contact between two objects, but magnetic forces can act at a distance.**

**W.S.L.O: To represent findings in diagrams.**

## ***Our new topic vocabulary!***

Practise saying our topic vocabulary.



**S.K.L.O: To understand that some forces need contact between two objects, but magnetic forces can act at a distance.**

**W.S.L.O: To represent findings in diagrams.**

Today we are thinking about contact forces.

We know that a force is a push or a pull.

With that in mind, what do you think a contact force is?

Write your prediction answer into your book/on your paper.

**S.K.L.O: To understand that some forces need contact between two objects, but magnetic forces can act at a distance.**

**W.S.L.O: To represent findings in diagrams.**

Imagine you are thirsty and there is a glass of water on the table.

The easiest way to get rid of your thirst is to lift the glass from the table towards your mouth and to drink the water.

Did you know you apply force to do this?

You touch the glass with your hand and lift it.

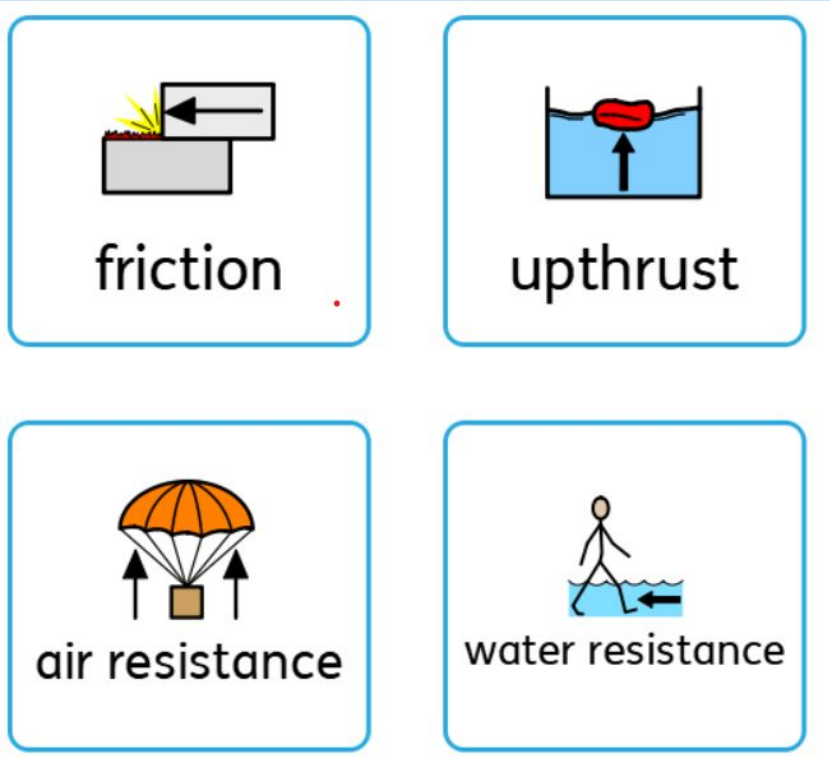
This is a contact force.

Your hand is in CONTACT with the glass.

**S.K.L.O: To understand that some forces need contact between two objects, but magnetic forces can act at a distance.**

**W.S.L.O: To represent findings in diagrams.**

Let's take a look at some more examples of contact forces.




Can you say the names of these contact forces out loud?

Friction

Upthrust

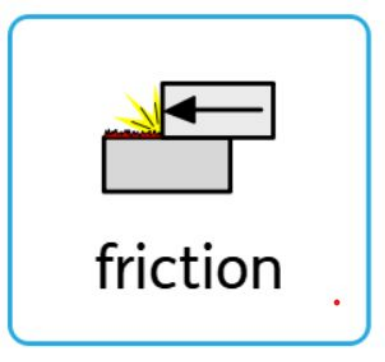
Air resistance

Water resistance

**S.K.L.O: To understand that some forces need contact between two objects, but magnetic forces can act at a distance.**

**W.S.L.O: To represent findings in diagrams.**

# Let's take a look at some more examples of contact forces.



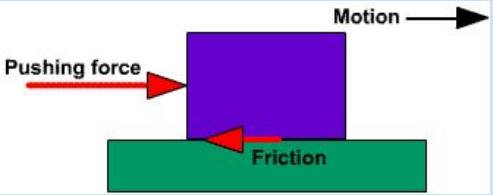

We learned about friction in our previous lesson.

Friction is when two surfaces slide against each other.

**<u>Tiny Task:</u>**

Rub your hands together quickly for 20 seconds.

Write down what you notice.




Friction has some great benefits!

Friction between our shoes and the floor stop us from sliding.

Friction between car/bike tyres and the road stop cars/bikes from skidding.

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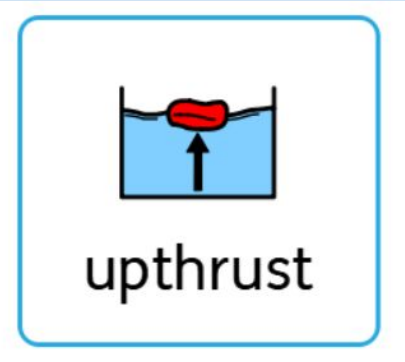
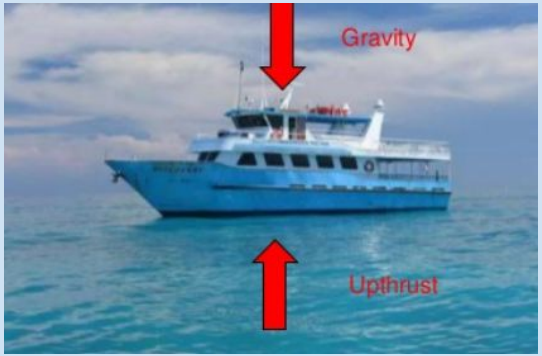
# Let's take a look at some more examples of contact forces.




Upthrust is a force that only exists in liquids. You will find it in rivers, lakes, swimming pools, oceans, bathtubs and even in cups of tea!

It is the term used to describe objects that sit on water.

Not all objects float.

Upthrust acts against objects that are being pushed down by gravity (the force that pushes all objects down to the centre of the earth), pushing them up. For example, the weight of the boat pushes it down but the upthrust pushes it up, because they are balanced the boat is able to float.

**Tiny task:** Can you think of another object that sits on water?

**S.K.L.O: To understand that some forces need contact between two objects, but magnetic forces can act at a distance.**

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Let's take a look at some more examples of contact forces.


Air resistance occurs when an object is falling in the air. There is a force acting on the object in the opposite direction. This is known as air resistance.

The resistance involves pushing it back.

Think about a parachute jumper.

As the person falls through the air, friction is created between the person/parachute and the air.

The air pushes against the parachute which slows down the speed the person is falling.

**S.K.L.O: To understand that some forces need contact between two objects, but magnetic forces can act at a distance.**

**W.S.L.O: To represent findings in diagrams.**

Let's take a look at some more examples of contact forces.


Water resistance is similar to air resistance.

It is an opposite force.

When travelling through water, the water pushes against the object or person.

Think about when you go to the swimming pool.

When you swim you create friction between your body and the water.

The water pushes against you.

**S.K.L.O: To understand that some forces need contact between two objects, but magnetic forces can act at a distance.**

**W.S.L.O: To represent findings in diagrams.**

## Task: How much can you remember?

What is a contact force?

Where does upthrust take place?

When does upthrust act?

Name the four contact forces we have learned about:

What do you think a non-contact force is?

**S.K.L.O: To understand that some forces need contact between two objects, but magnetic forces can act at a distance.**

**W.S.L.O: To represent findings in diagrams.**

## Task: How much can you remember? Check it!

What is a contact force?
A contact force is when two objects are touching.

Where does upthrust take place?
Upthrust takes place in any liquid.

When does upthrust act?
Upthrust acts when an object is pushing down on water.

Name the four contact forces we have learned about:
Friction, upthrust, air resistance and water resistance.

What do you think a non-contact force is?
When objects are not touching, creating an invisible force.

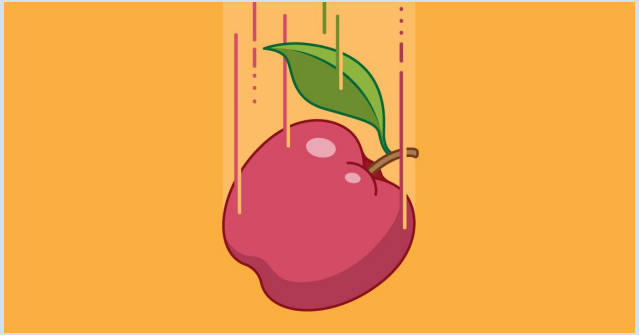
**S.K.L.O: To understand that some forces need contact between two objects, but magnetic forces can act at a distance.**

**W.S.L.O: To represent findings in diagrams.**

There are two key examples of non-contact forces.

Gravitational force- The pulling of everything down towards the ground. It is sometimes referred to as weight.

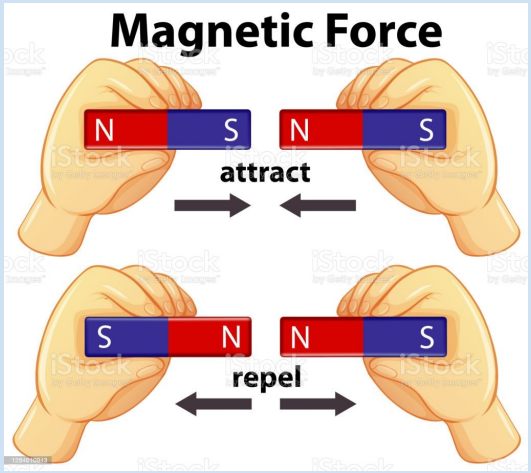
On Earth, everything is pulled towards the ground.
That is why your chair is not floating in the air!



Magnetic forces- An invisible force that attracts or repels.

When two objects pull towards one another they attract.

When two objects push away from one another they repel.

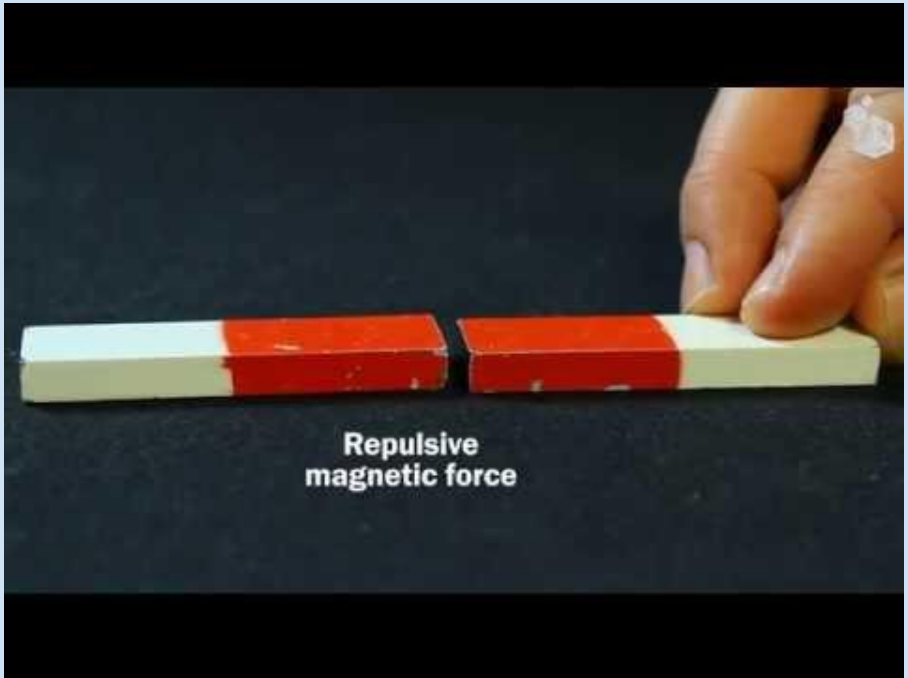


**S.K.L.O: To understand that some forces need contact between two objects, but magnetic forces can act at a distance.**

**W.S.L.O: To represent findings in diagrams.**

So far we've looked at how some forces such as upthrust need direct contact with objects to perform its function.

**TASK:** Watch the video below and see if you can spot what is different about a magnetic force.




1) What equipment is used in the experiment?
2) What happens to the magnets when they are set to attract?
3) What happens to the magnets when they are set to repel?
4) Does the magnet need to be touching the objects such as the ball or compass to create a push or a pull? Why?
5) Draw a diagram of magnets when they attract and repel.


**You have finished today's lesson, well done!**

**Remember to send your work from this lesson to Mr Mitchell at tmitchell@kingsavenue.lambeth.sch.uk**

**Enjoy the rest of your day!**

# Tuesday 19th January 2021

**S.K.L.O: To observe how magnets attract or repel each other and attract some materials and not others.**

**W.S.L.O: To record information in a table.**

**Thinking cap:**

How many words can you find in the wordsearch?

You have five minutes.

| | | |
|---|---|---|
| magnetism | metal | iron |
| north | stick | south |
| attract | plastic | push |
| repel | wood | glass |

**S.K.L.O: To observe how magnets attract or repel each other and attract some materials and not others.**

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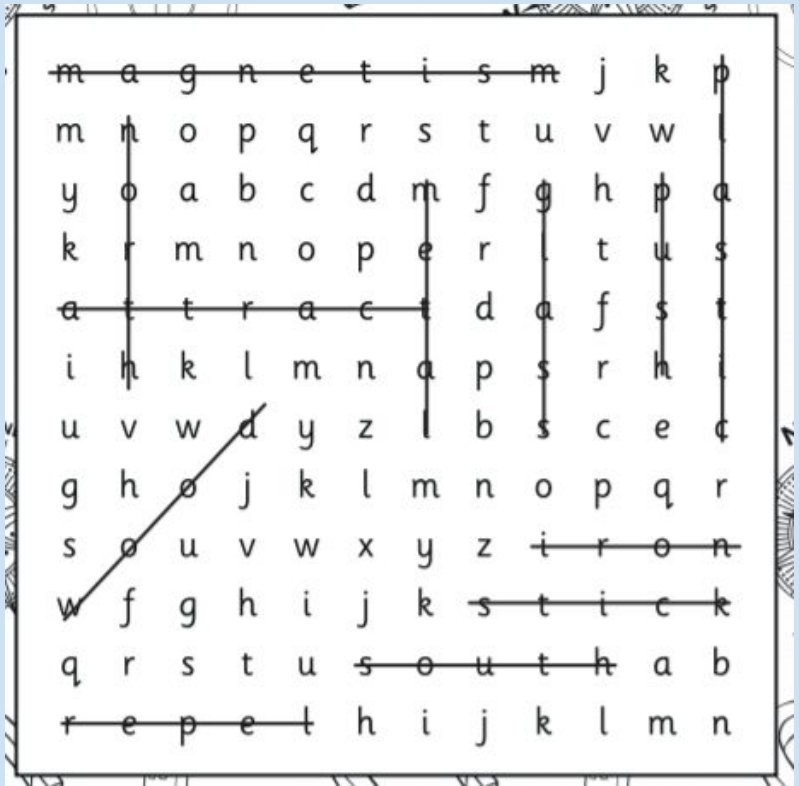
## Thinking Cap: Check it!



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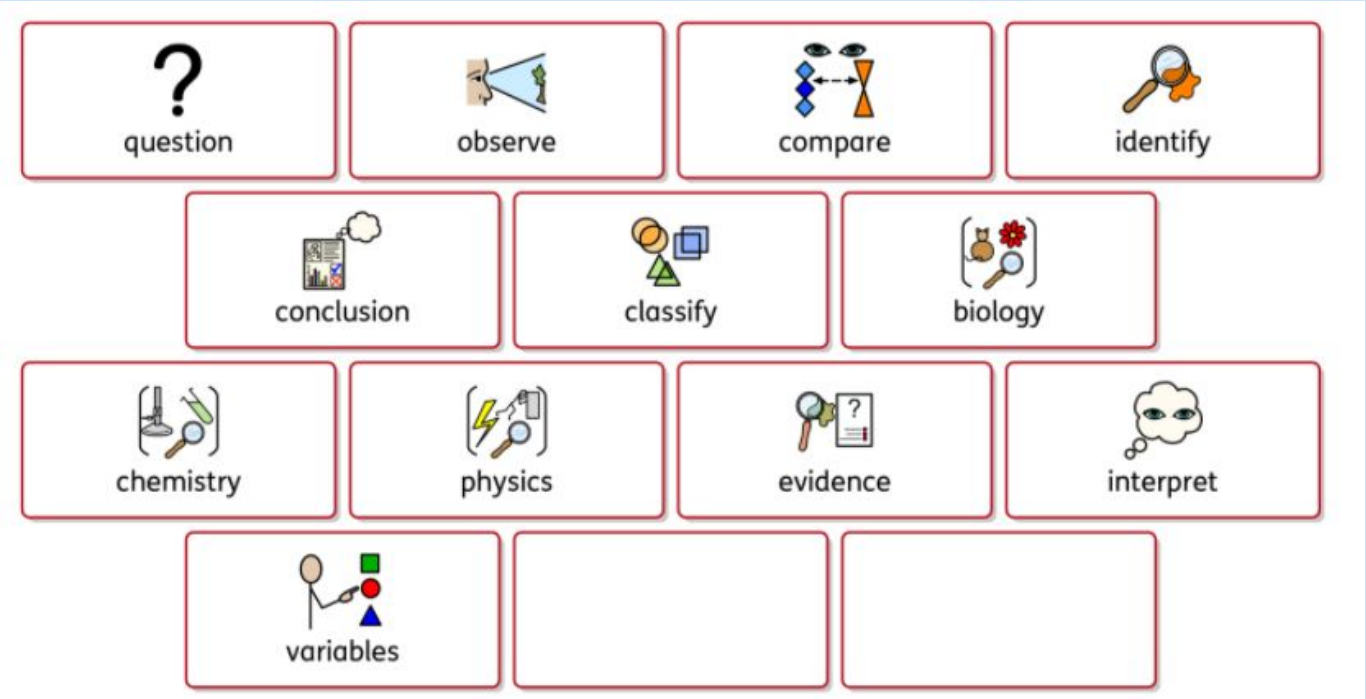
## ***Let's quickly say our Science vocabulary!***



**S.K.L.O: To observe how magnets attract or repel each other and attract some materials and not others.**

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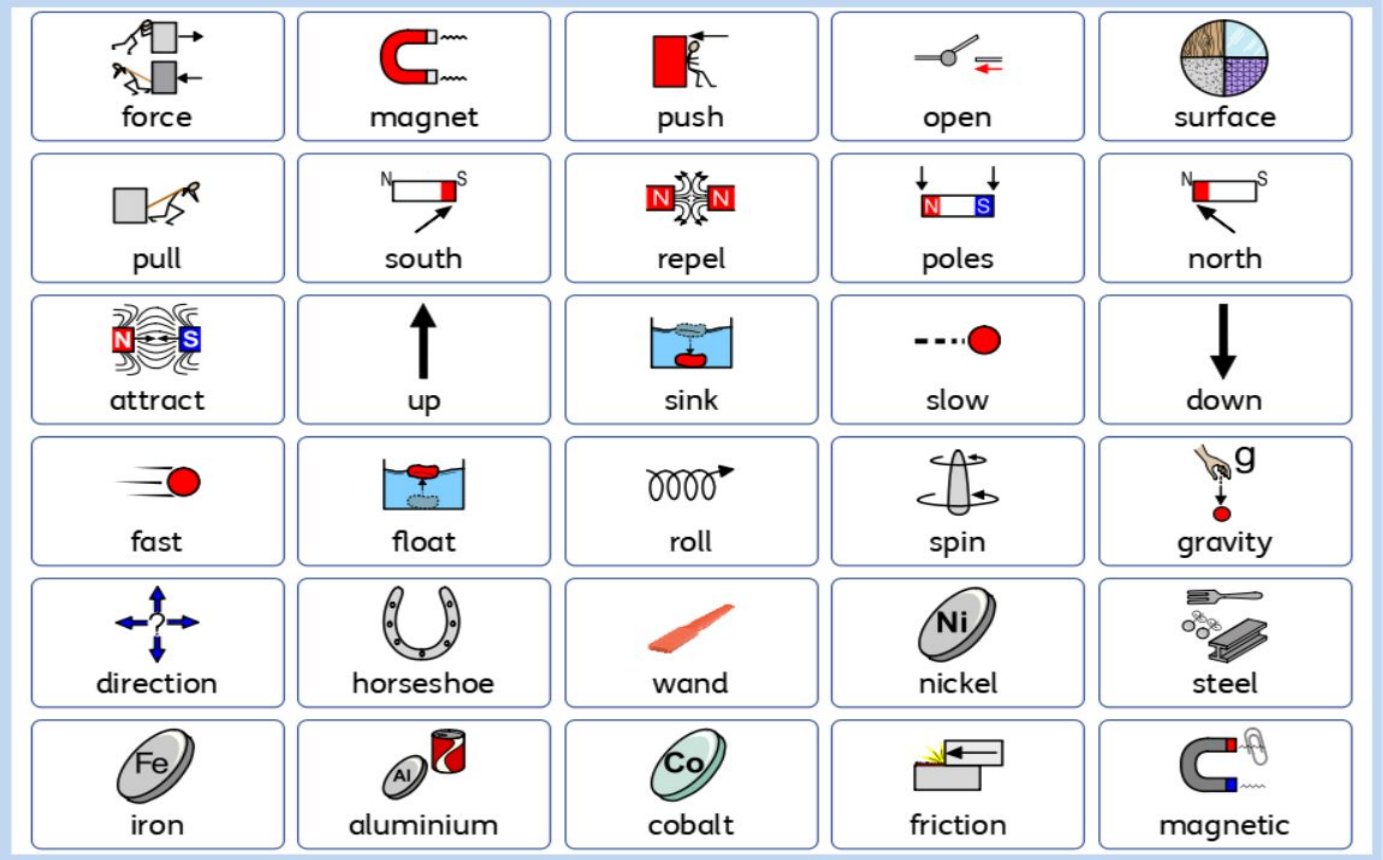
## ***Our new topic vocabulary!***

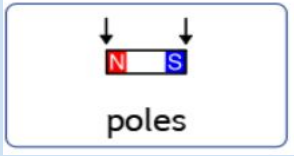
Practise saying our topic vocabulary.



**S.K.L.O: To observe how magnets attract or repel each other and attract some materials and not others.**

**W.S.L.O: To record information in a table.**

Magnets are a stone or piece of metal that attracts another metal.



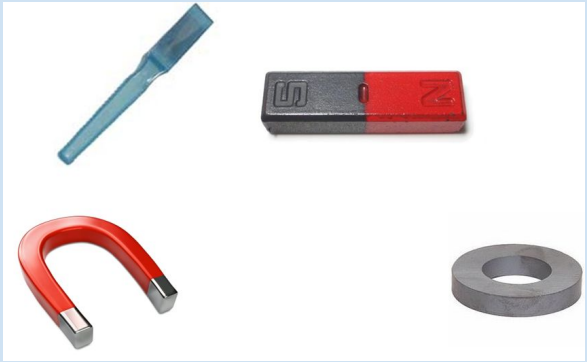


They are usually made from a material called iron- this is a type of metal.

A magnet has two ends called magnetic poles. Sometimes these are shown on the magnet through colour or the letters N and S- this stands for north and south.

The magnetic poles can attract- pull an object towards.

The magnetic poles can repel- push an object away.



**<u>Tiny Task:</u>**

Think about the magnets you've seen in your life or have at home.
What was their main purpose?
Are they decorative e.g a fridge magnet.
Are they used for toys e.g keeping a train set together.

**S.K.L.O:  To observe how magnets attract or repel each other and attract some materials and not others.**

**W.S.L.O: To record information in a table.**

According to greek legend, magnetism was discovered by a shepherd!

The shepherd was out walking and his feet became stuck to the ground.

The iron nails in his sandals had become attracted to a rock.

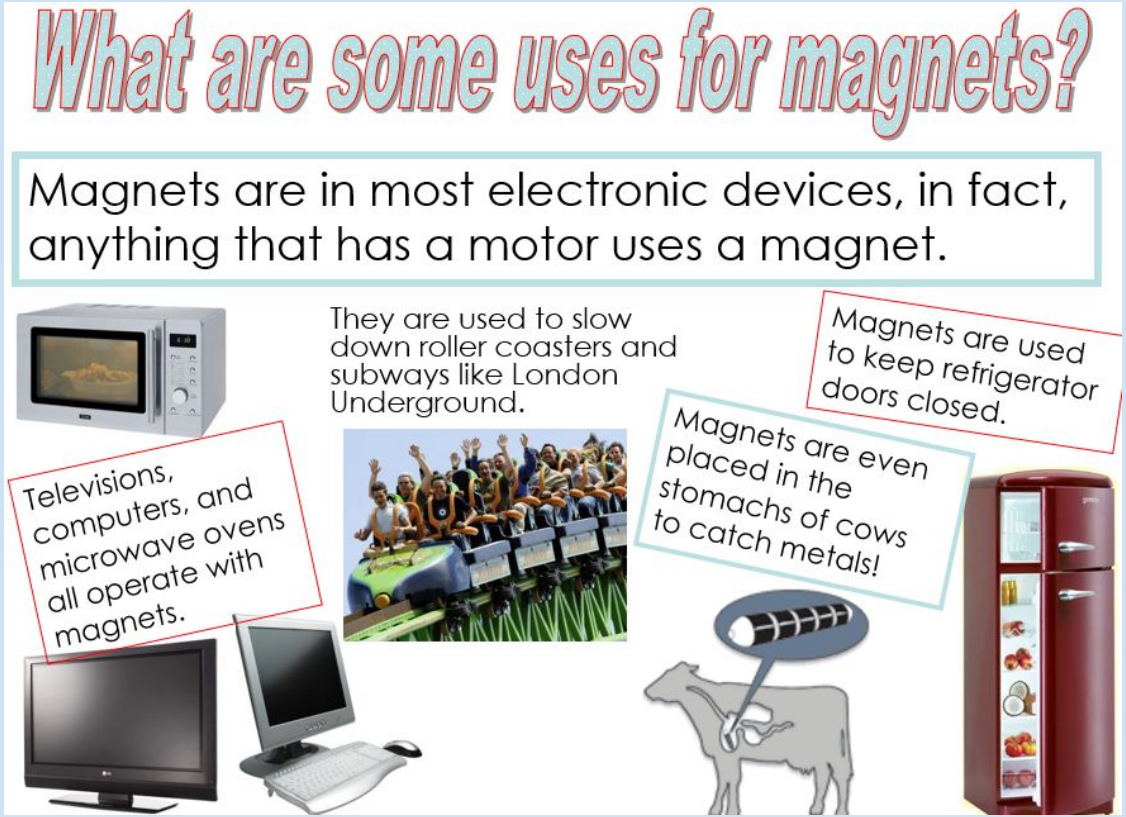
This stone was known as magnetite, after being found in magnesia.

It became very popular and valuable because of its ability to attract things and became known as lodestone. It was the only form of magnet that existed for many years.

The first emperor of china made the gates of his palace from lodestone, enemies would attempt to attack. However, they were wearing armour and were pulled towards the gate, becoming stuck!

**S.K.L.O: To observe how magnets attract or repel each other and attract some materials and not others.**

**W.S.L.O: To record information in a table.**




*Magnets play a huge part in modern living.*

*They are used in many everyday things.*

*New uses for magnets are being discovered every day!*

**S.K.L.O:  To observe how magnets attract or repel each other and attract some materials and not others.**

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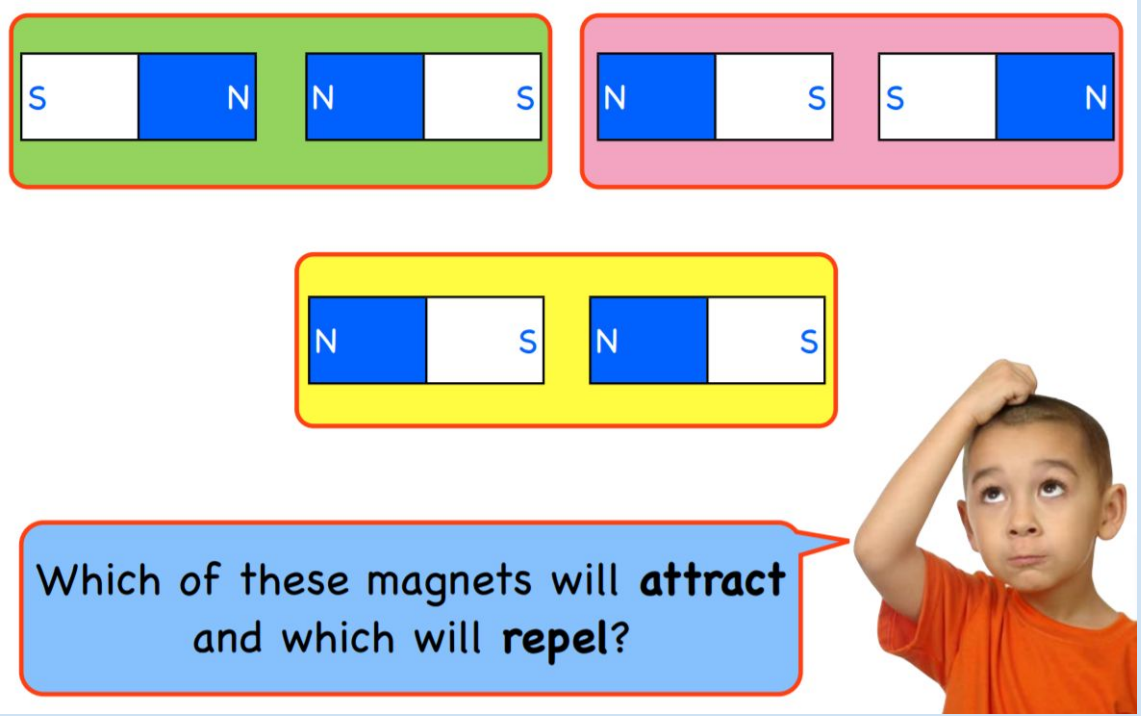

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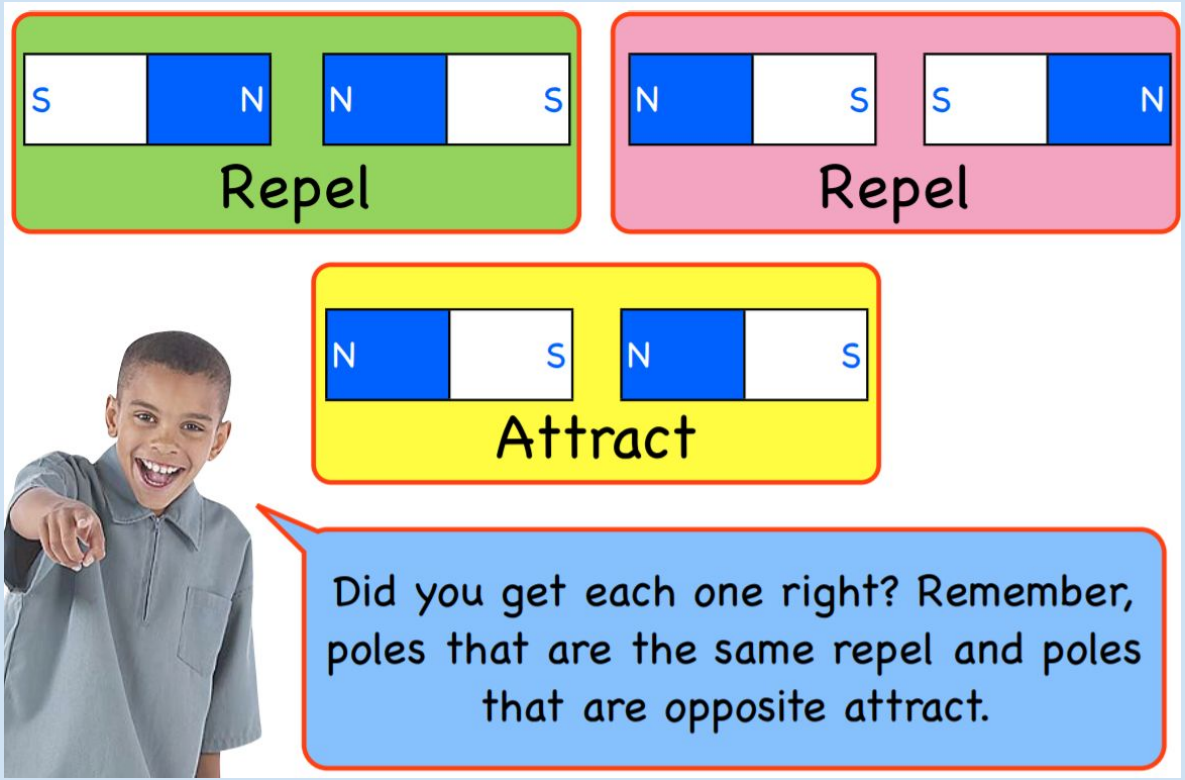

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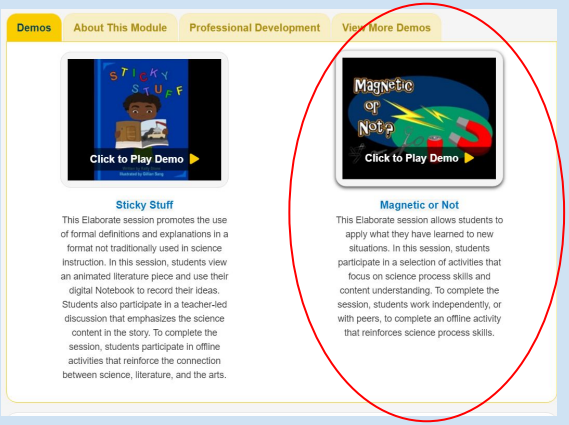



This activity can be accessed from this link: https://www.science4us.com/elementary-physical-science/force-and-motion/magnets/

Click the activity that says magnetic or not.

| Metal item | Magnetic | Non-magnetic |
|---|---|---|
| Scissors | | |
| Can | | |
| Coins | | |
| Key | | |
| Paperclip | | |
| Silver ring | | |
| Screws | | |
| Copper pipe | | |

**TASK 1:**
Interactive practical- magnetic metals.

You are going to have a go at using an interactive magnet to see if it is attracted to different metal materials.

You need to present your findings in a table.

**TASK 2:** Research what materials the non-magnetic metals are made from.


**You have finished today's lesson, well done!**

**Remember to send your work from this lesson to Mr Mitchell at tmitchell@kingsavenue.lambeth.sch.uk**

**Enjoy the rest of your day!**

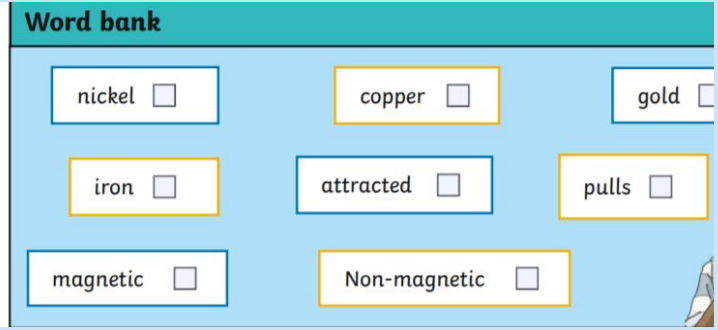
# Wednesday 20th January 2021

**S.K.L.O: To be able to predict whether two magnets will attract or repel each other, depending on which poles are facing.**

**REMEMBER MORE TASK:**

Copy and complete the passage about magnets that we have learned about so far in our topic.

Use the word bank to help you.




Magnetic materials are _____ to magnets. This means that the magnetic force _____ the material towards the magnet. _____ materials are not attracted to magnets.

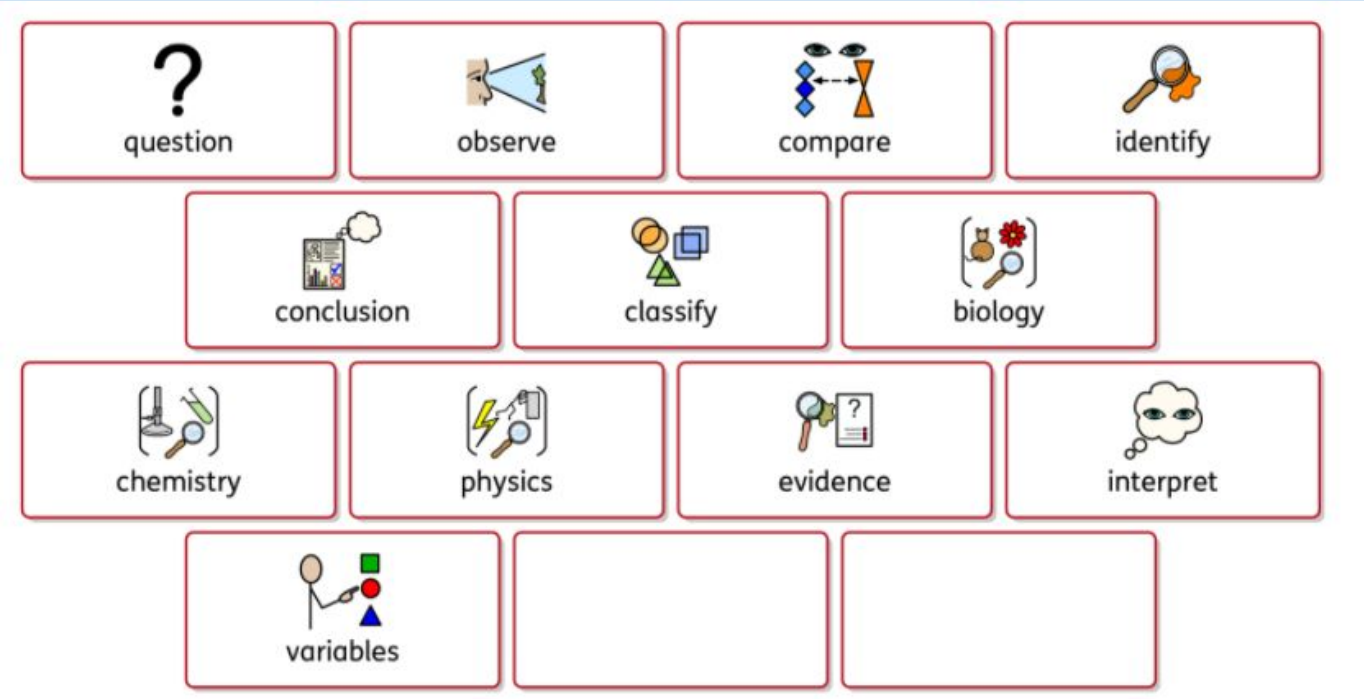
Magnetic objects contain metals such as iron, cobalt and _____. Steel contains _____ so it is also _____.

Not all metals are magnetic. Examples of metals that are not magnetic include aluminium, _____ and _____.

*Remember to include capital letters and full stops as you put this into your book/on your paper!*

**S.K.L.O: To be able to predict whether two magnets will attract or repel each other, depending on which poles are facing.**

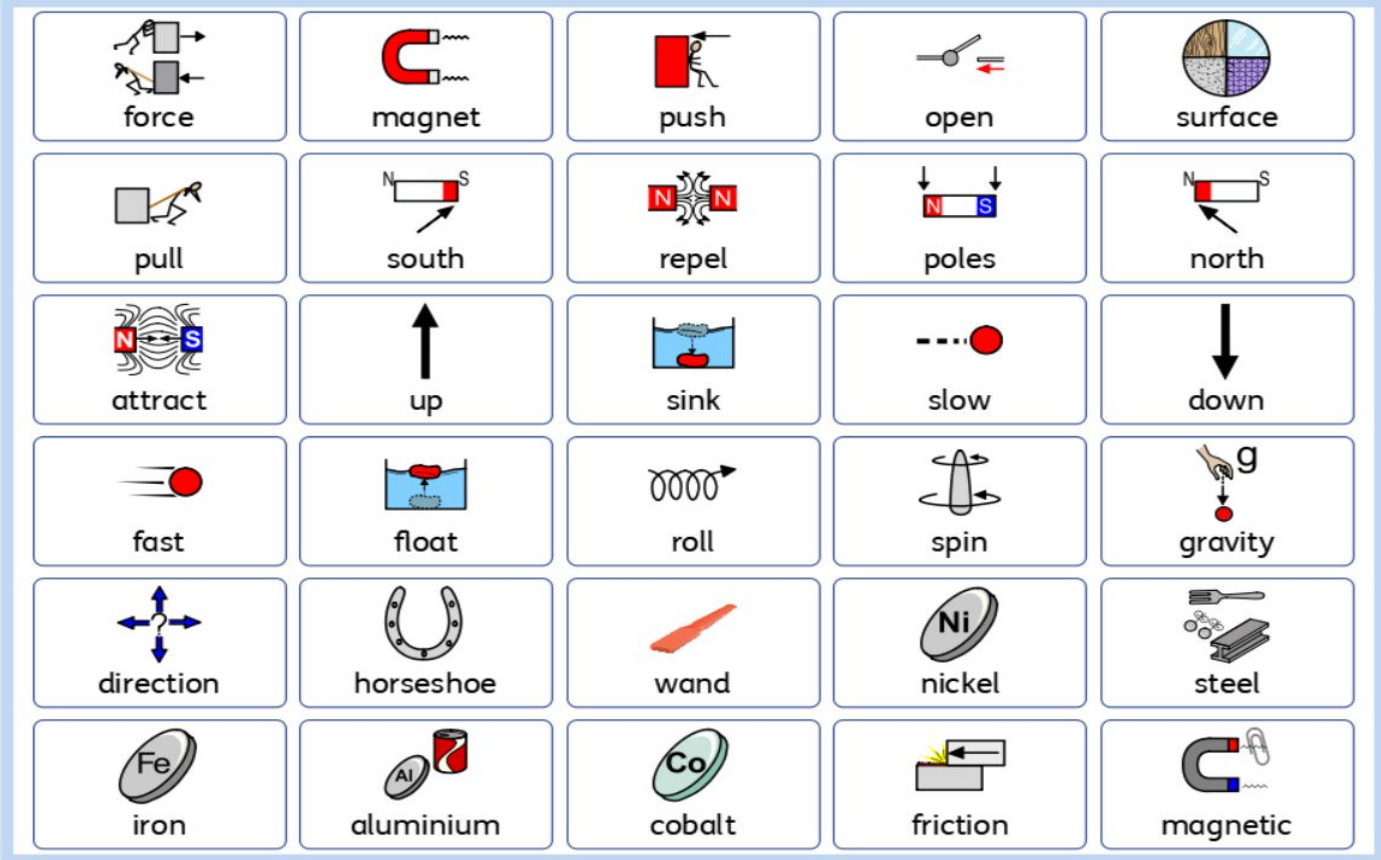
## ***Let's quickly say our Science vocabulary!***



**S.K.L.O: To be able to predict whether two magnets will attract or repel each other, depending on which poles are facing.**

## ***Our new topic vocabulary!***

Practise saying our topic vocabulary.



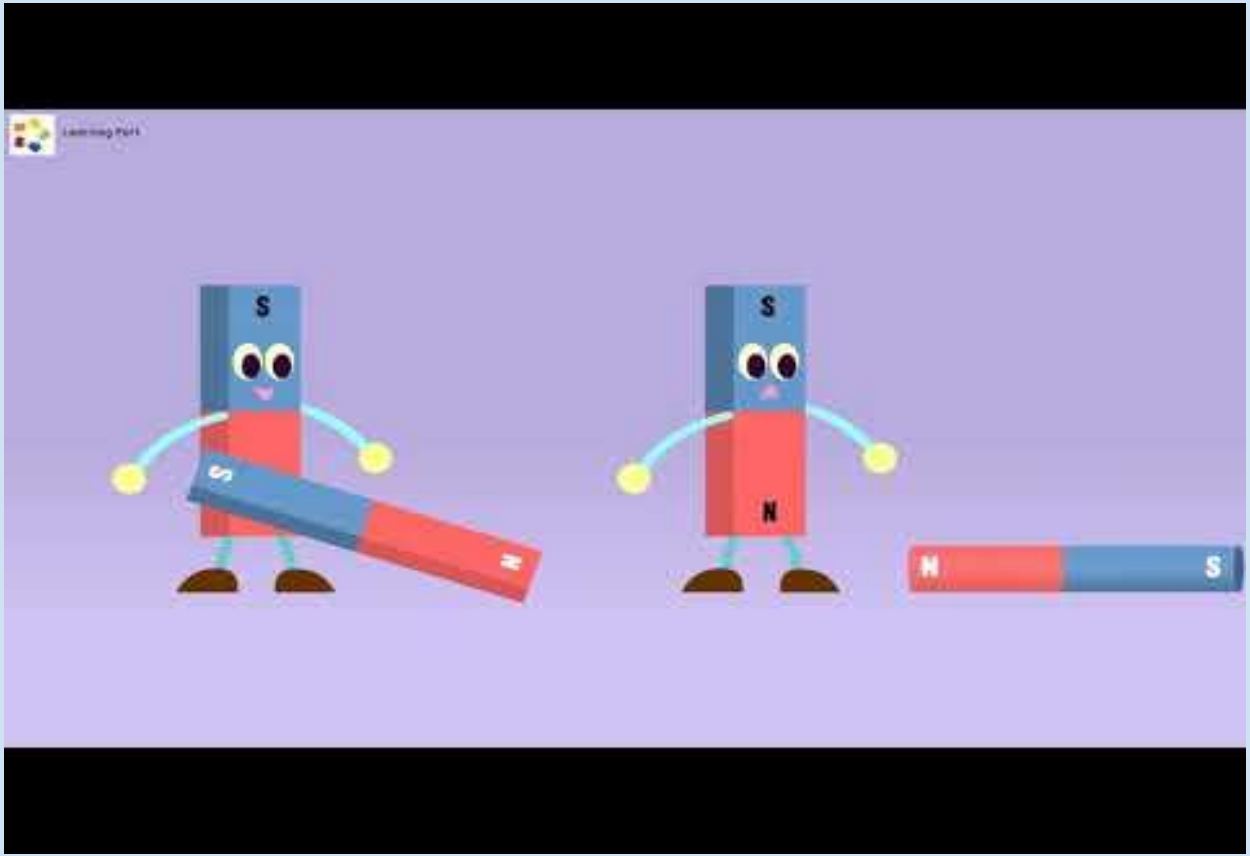
**S.K.L.O: To be able to predict whether two magnets will attract or repel each other, depending on which poles are facing.**

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.

What we already know about magnets.

**S.K.L.O: To be able to predict whether two magnets will attract or repel each other, depending on which poles are facing.**




## TINY TASK:

Watch the video and write a summary (a brief retelling) of what needed to happen to Barry for other magnets to become attracted to him.

**S.K.L.O: To be able to predict whether two magnets will attract or repel each other, depending on which poles are facing.**

We now know that for magnets to attract opposite poles need to face one another.

An easy way to remember this is by thinking “opposites attract!”

S + N = Attract

N + N = Repel

S + S= Repel

**S.K.L.O: To be able to predict whether two magnets will attract or repel each other, depending on which poles are facing.**

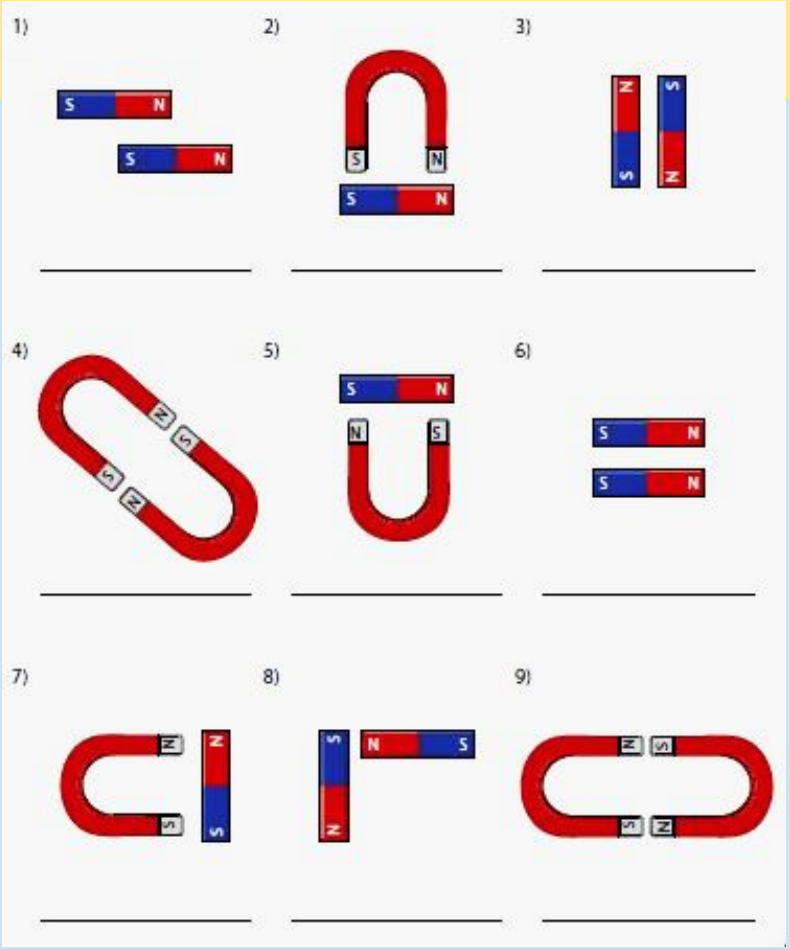
## TASK:

Neatly draw each magnet pair, including the correct pole labels.

For each pair, complete the sentence below.

These magnets will _____ (repel/attract).
I know this because _____.

Once you've got your diagrams and sentences for all 9 you can colour them in!




**You have finished today's lesson, well done!**

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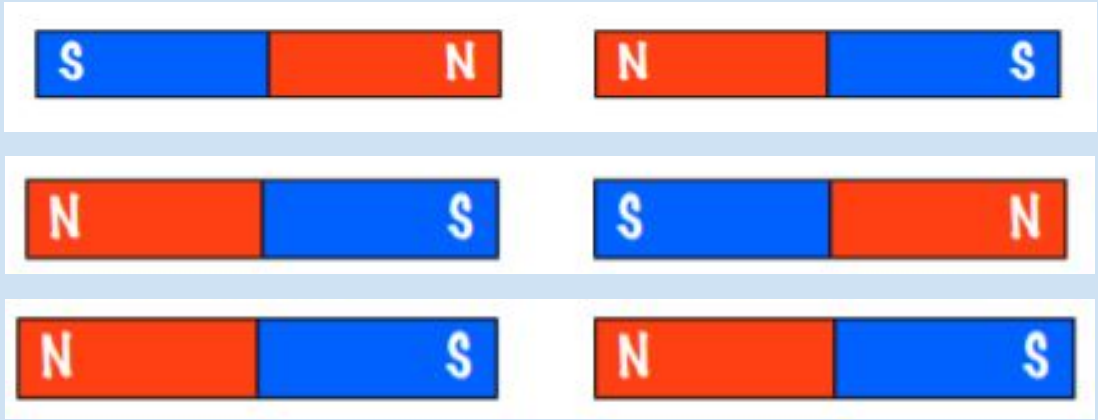
**Enjoy the rest of your day!**

# Thursday 20th January 2021

**S.K.L.O: To compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.**

**REMEMBER MORE TASK:**

Quick fire- Attract or Repel?



**S.K.L.O: To compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.**

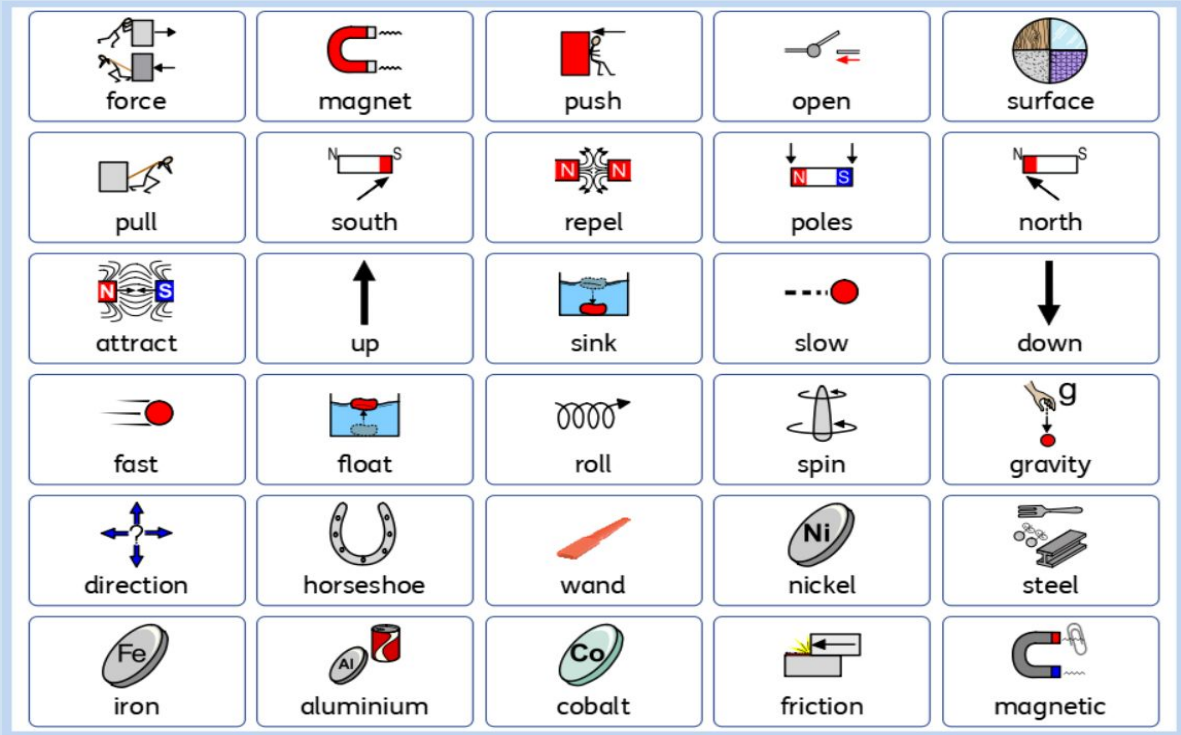
## TASK

Now you've practised saying this vocabulary many times, I would like you to pick 7 key words to write 7 factual sentences about.

For example;

Aluminium is a type of metal that is non-magnetic.

*Remember to use capital letters and appropriate punctuation.*



**S.K.L.O: To compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.**

It is only metals that are attracted to magnets. Plastic, wood and other materials are never magnetic. However, not all metals that are magnetic. Iron and steel are both magnetic whereas copper, brass and aluminium are not. Some alloys (a mixture of two or more metals) can also be magnetic if they contain iron, steel, nickel or cobalt.

How many uses for magnets can you think of? Discuss your ideas then list them on the next slide.

**S.K.L.O: To compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.**

## Separating materials

Sometimes magnets are used to sort magnetic and non-magnetic materials. Examples of magnets being used as separators are:

- Metals separated from ore

•Food manufactures us magnets to keep small metal filings from machinery from getting into food.
•Sweets and drinks dispensing machines use magnets to separate coins from slugs that are put into their machines.

Some magnet uses

## At home

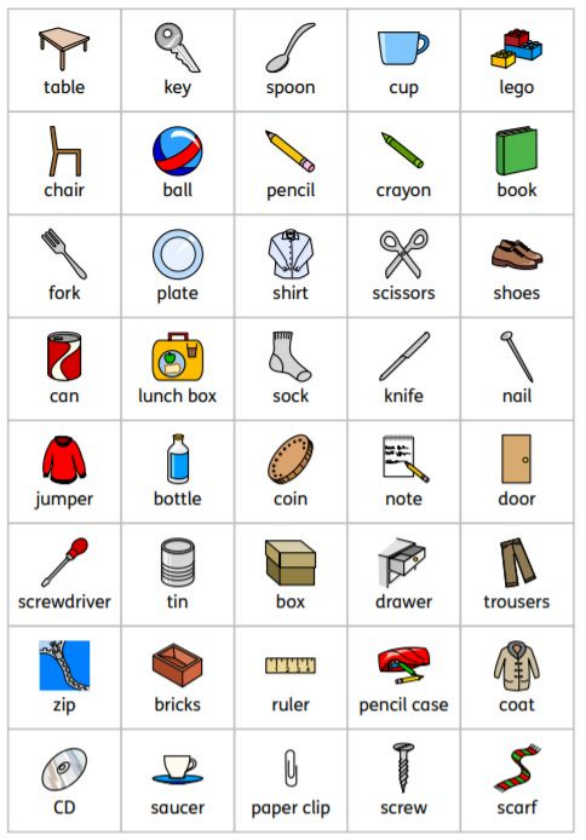
We use magnets to hold things up or to pick up small things::

- sewing pins
- electric can openers
- Magnets can hold things to the refrigerator.

## Maglev Trains

- Maglev trains use super conducting magnets in the track and on the underside of the train to "float" above the track.
- Maglev trains use magnetic repulsion.
- Maglev trains can travel very fast, up to 480 km/h (300 mph).

**S.K.L.O: To compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.**




| magnetic | non magnetic |
| --- | --- |
| | |

## TASK:

To consolidate your learning from this week, I would like you to classify the items on the left into a table.

One side of your table should be titled ‘magnetic’ the other side ‘non magnetic’.

You can neatly draw the objects or write them out.


**You have finished today's lesson, well done!**

**Remember to send your work from this lesson to Mr Mitchell at tmitchell@kingsavenue.lambeth.sch.uk**

**Enjoy the rest of your day!**

# Friday 21st January 2021

**S.K.L.O:  To revise forces and magnets.**

Today, you will make your way through the slides and answer some assessment style questions. **This is nothing to worry about!**

Try your best to see how much you can remember!

Record your answers into your books/on your paper.

**S.K.L.O: To revise forces and magnets.**

## Pushes and Pulls

1. Circle the correct word from each box:

A force is a [sound / push] or a [smell / pull] acting on an [object / order.]

Forces can make objects [start / grow] or [burn / stop] or go [quicker / quieter] or [slower / quieter.]

2. Write **push** or **pull** in each row to finish the table below:

(The first one has been done for you.)

| Activity | Push or Pull? |
|---|---|
| Jumping on a trampoline | **push** |
| Hitting a ball with a bat | |
| Getting ready to fire an arrow | |
| A car taking a trailer somewhere | |
| Tying shoe laces | |

3. Write **start** or **stop** in each row to finish this table:

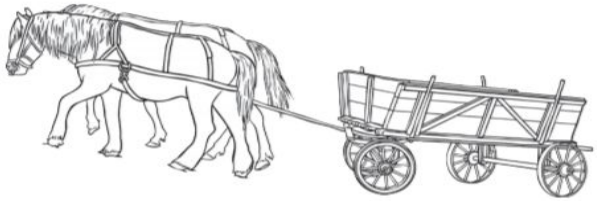
| Activity | Start or Stop? |
|---|---|
| Pulling your brakes on your bike | **stop** |
| Kicking a ball | |
| A piece of toast landing on the floor | |
| Pedalling a bike | |
| Throwing a paper aeroplane | |

**S.K.L.O: To revise forces and magnets.**

4. Where is the pushing force coming from in this picture?

.....

5. Where is the pulling force coming from in this picture?



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## Magnets

6. Circle the metals that magnets can pick up:

| | | | |
|---|---|---|---|
| Gold | Iron | Aluminium | Steel |
| Cobalt | Copper | Silver | Nickel |

7. Write **attract** or **repel** on these bar magnets below:

| Magnets | Attract or Repel? |
|---|---|
|  | |
|  | |
|  | |

**S.K.L.O: To revise forces and magnets.**

8 Here are the results of the magnet investigation

| Magnet | Distance when attracted paperclip |
|---|---|
| Medium sized horseshoe magnet | 6cm |
| Large bar magnet | 10cm |
| Fridge magnet | 2cm |

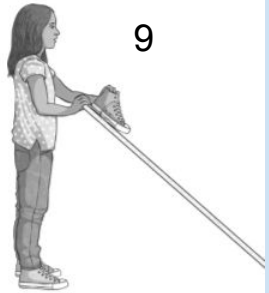
.Which is the strongest magnet?

.....

.Which is the weakest magnet?

.....

9



A group of Year 3 children carried out an investigation where they had some planks of wood with different coverings. They made each plank into a ramp and put a shoe at the top. They measured how high they had to lift the plank before the shoe slid down it.

Here are the results from that investigation in a table:

| Surface on plank | Height of plank when shoe slid down |
|---|---|
| Carpet | 70cm |
| Rough wood | 43cm |
| Rubber bath mat | 82cm |

.What do these results tell you?

.....

.What is the name of the force that is stopping the shoe sliding down and making it grip?

.....


**You have finished today's lesson, well done!**

**Remember to send your work from this lesson to Mr Mitchell at tmitchell@kingsavenue.lambeth.sch.uk**

**Enjoy the rest of your day!**