Magnetism

YEAR 5

Spring 1

LESSON 5

How can we tell if a material is magnetic or not?

Do Now – Retrieval

1) What is the 'field' of a force?

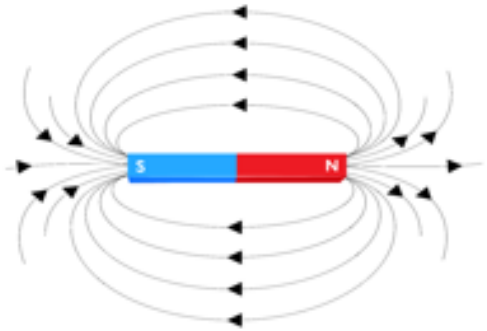
The 'field' of a force is an area in which an i_____ force will a_____.

2) What are the two ways that you could see a magnetic field?

1. Place i_____ f_____ around a magnet

2. Place a c_____ in different places around a magnet and draw the direction of the force at each of these places.

3) From the diagram below, where is the magnetic field going to be strongest? How do you know?



The magnetic field will be strongest _____.

I know this because _____.

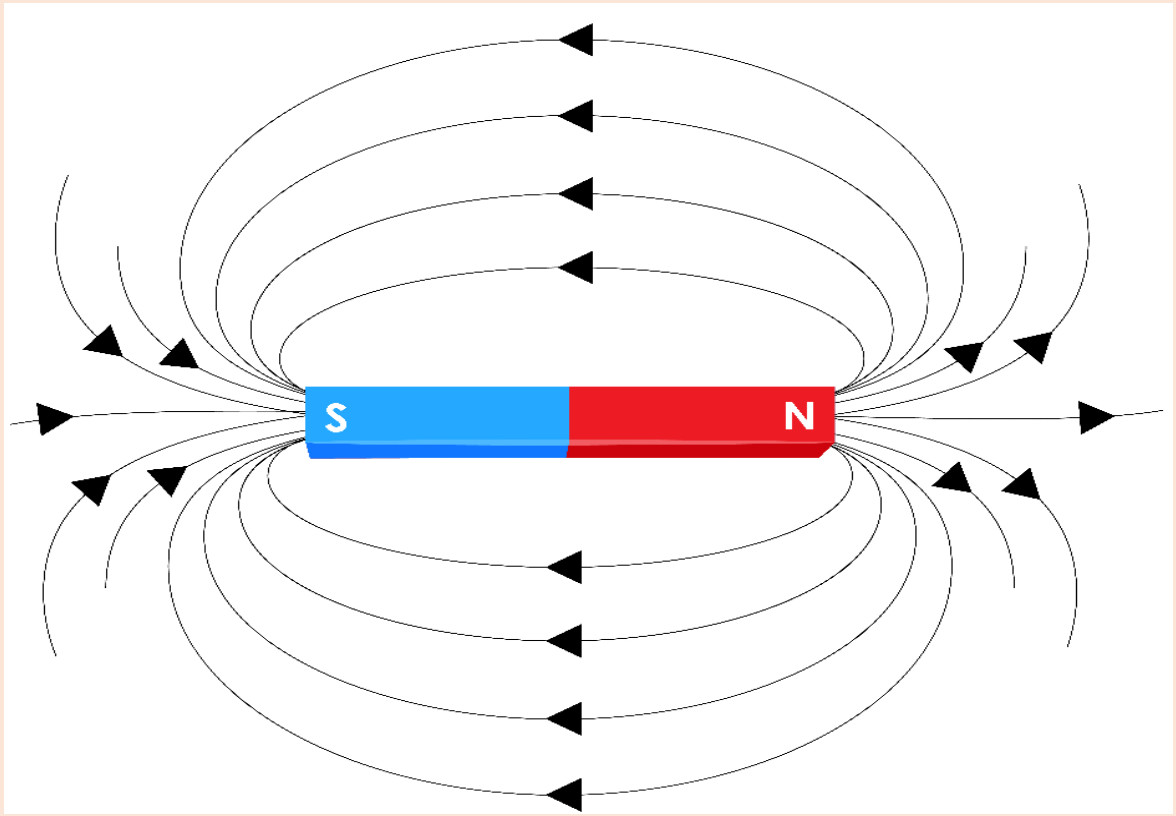
From previous learning:

1) Give 3 examples of physical changes:

i. _____

ii. _____

iii. _____


S
N

Read the following passage about permanent magnets

Not all materials are magnetic. Iron, Steel and Nickel are examples of materials that magnetic and can be used to make magnets.

What are three examples of materials that are magnetic:

a) I_____

b) S_____

c) N_____

Magnets can attract or repel each other depending on which poles are facing each other.

Magnetic materials that have **not** been made into magnets will be attracted to **both** the north pole **and** the south pole of a magnet.

What will happen when you place two MAGNETS together

When put together, magnets will either a_____ or r_____ each other.

What will happen when you place a MAGNETIC MATERIAL close to a MAGNET?

Magnetic materials will be a_____ to both the n_____ and the s_____ pole of a magnet.

Magnets can be either permanent or temporary. Permanent magnets stay magnetic all of the time. Temporary magnets can be made to be magnetic but may not stay that way.

Magnetic materials can be made to be magnets by stroking them many times along the side with a magnet. You can stop them from being magnets if they are heated strongly.

Write down 'permanent' or 'temporary' next to the correct definition:

_____ magnet - stays magnetic all the time

_____ magnet - can stay magnetic for a short time

Watch the demonstration of how to make iron into a magnet

Use the words in the box to fill in the gaps to describe what the 'single touch' method is:

direction | bottom | magnet

The 'single touch' method involves moving a single _____ along the surface of magnetic material in the same _____ from top to _____ many times.

Complete an investigation to find out how to sort magnetic and non-magnetic materials

Use help from your teacher to fill in the method below:

We can tell if something is magnetic or not by placing it near a magnet and seeing if it is a_____ to the magnet.

We can tell if a material is a magnet or just a magnetic material by placing it near both poles of a m_____ and seeing if it is a_____ to one end and r_____ from the other end.

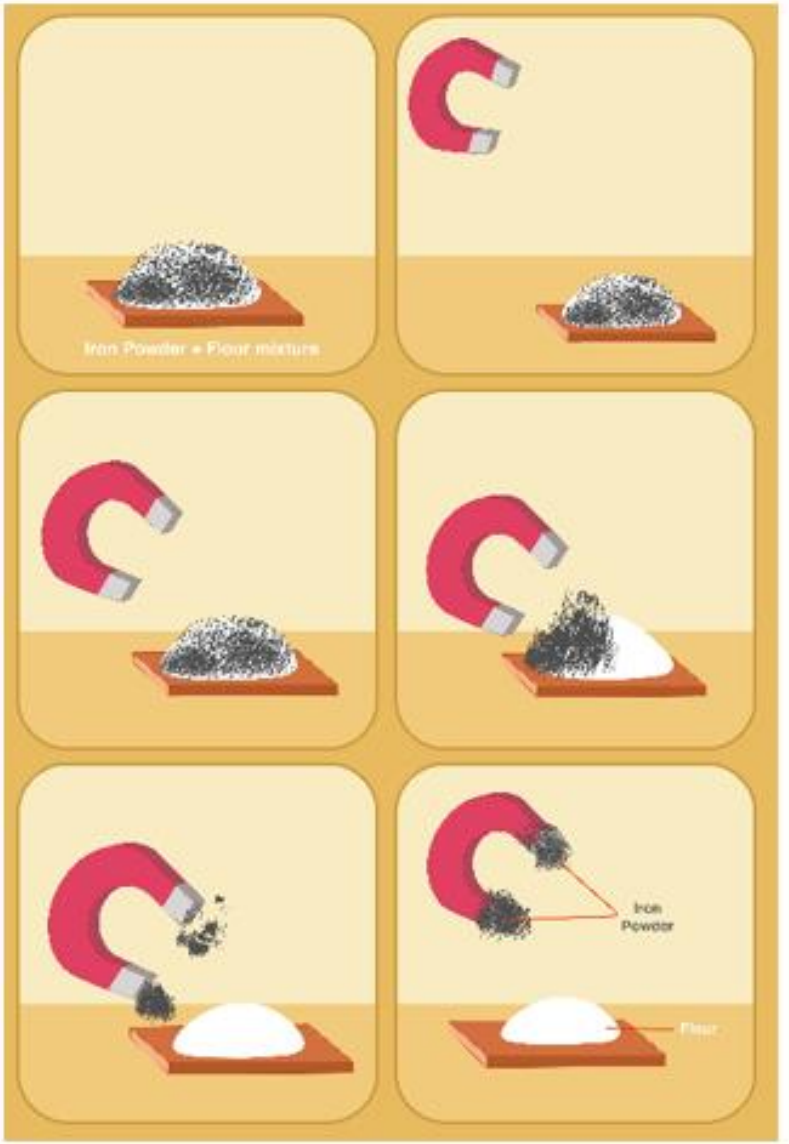
Sort the objects you have been given into one of the three categories below:

Non-magnetic	Magnetic	A magnet

Fill in the table below to say whether the two objects will attract, repel or if there will not be any affect. Explain why in each case.

Objects	*Attract, Repel or no effect?*	*Explanation*
North pole and north pole together 	*"Repel"*	*"because two of the same poles are together"*
North pole and south pole together 		Because two d_____ poles are together
North pole and Iron (not magnetised) 		Because a m_____ and a magnetic m_____ are brought together
Iron and Iron (neither magnetised) 		Because only m_____ materials are brought together (there is no magnet present)
Iron (not magnetised) and south pole 		Because a m_____ and a magnetic m_____ are brought together
North pole and plastic 		Because plastic is not m_____
Iron (not magnetised) and Plastic 		Because plastic is not m_____

Discuss with a partner what you think the diagram is showing



Iron is removed from the flour because it is a_____ to the magnet. The flour stays on the table because it is n_____ a_____ to the magnet.

How could use magnets help us to sort recycling materials if iron is mixed in with the recycling?

_____

_____