



WHICH IS THE STRONGEST MAGNET?



Equipment:	Three or four different magnets – if possible of different strength and shape, paper clips. Children could bring in their own fridge magnets also.	
Suggested Class Level:	Younger classes	
Preparation:	A previous lesson investigating magnets would be very useful: e.g. what sort of things 'stick' to a magnet, and where the main strength of a magnet lies (<i>by dipping a magnet into iron filings or by attaching paper clips to different parts of a magnet</i>).	
Background information:	<p>There are only a few things which are attracted to a magnet, iron and steel being the main ones. Very few other metals do, and no non-metals (<i>e.g. plastic, wood, glass, cloth, etc.</i>) are attracted.</p> <p>The main strength of a magnet is at the poles, i.e. the North and South poles, which lie at each end of a magnet, or each side of a circular magnet.</p> <p>N.B. Some things which look plastic (<i>e.g. coloured paper clips</i>) are actually made of steel and covered in plastic, so they will be attracted to a magnet.</p>	
Trigger questions:	<p>What do magnets do?</p> <p>What sort of things 'stick' to a magnet?</p> <p>What are magnets used for?</p> <p>Do you think bigger magnets are stronger magnets?</p>	
Content:	<p>SCIENCE: Energy: Magnetism</p> <p>MATHS: Number: Counting, comparing and ordering Measures: Length (in follow-up activity – non-standard may be used) Data: Representing data</p>	
Skills:	Predicting, investigating and experimenting, analysing, recording.	



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Cross-curricular Links:

Geography: compasses, which help people find their way, have magnets in them.

History: the great explorers used compasses to find their way and discover different parts of the world.

SPHE: magnets are sometimes used to keep cupboards shut and make rooms safe for children.

Activity:

Show the children the different magnets and ask them:

“Which of the magnets do you think is the strongest?”

“Next strongest?” ... and so on.

Then ask them “How can we find out which is the strongest?”

They may suggest which magnet can lift the most paper clips or which one lifts the heaviest object. Or which can hold the longest chain of paper clips. They could also measure which can attract something from the furthest distance.

How will they make it a fair test? (e.g. if they plan to see how many paper clips ‘stick’ to a magnet, will they say that they will only use one end of each magnet, or both ends.) They should keep the number of ends the same for each magnet.

They should record their results and put them in order of strength. How did their results compare with their predictions?

Their results could be recorded in a pictogram or bar chart (or whatever method is appropriate to the class).

Their plan could be structured like this:

“This is what I will do.:

I will keep these things the same: (the paper-clips, using one or two ends of the magnet)

I will change only this: (the magnet)

I will observe and record this: (the number of paper clips attached to each magnet)

I will know which is the strongest magnet because...”



Safety:

Follow-up activity:

Some alternative methods depending on available equipment:

1. Attach a magnet to a LEGO car and put weights on it. Which magnet can pull the greatest weight?
2. Which magnet will attract say a paper-clip from the furthest distance?