

Field patterns



Location

First floor, Curiosity zone exhibition

In a nutshell

Investigate magnetic field patterns using this exhibit.

What to do

Place the magnet on the surface and see how the small metal bars display the field pattern around the magnet.

Time Required

KS3 & KS4 3-4 minutes per student.

What's happening?

A magnetic field is the region around a magnet where the magnetic force can be detected.

We cannot see magnetic fields but they can be detected using iron filings. If you sprinkle iron filings around a magnet the filings will gather in the pattern of lines, these lines are called field lines. The lines are more concentrated around the poles of the magnet and point from the north to the south pole of the magnet. If you move the magnet in this exhibit you can see the small metal bars rotate as the field changes.

Curriculum links

Curriculum links	
KS3	<p>Science - Forces</p> <ul style="list-style-type: none"> - non-contact forces: gravity forces acting at a distance on Earth and in space, forces between magnets and forces due to static electricity <p>Science - Forces and motion</p> <ul style="list-style-type: none"> - forces being needed to cause objects to stop or start moving, or to change their speed or direction of motion (qualitative only) - change depending on direction of force and its size <p>Science - Magnetism</p> <ul style="list-style-type: none"> - magnetic fields by plotting with compass, representation by field lines - Earth's magnetism, compass and navigation <p>English - Reading</p> <ul style="list-style-type: none"> - learning new vocabulary, relating it explicitly to known vocabulary and understanding it with the help of context and dictionaries
KS4	<p>Science - Forces and their interactions</p> <ul style="list-style-type: none"> - recall examples of ways in which objects interact: by gravity, electrostatics, magnetism and by contact (including normal contact force and friction), and describe how such examples involve interactions between pairs of objects which produce a force on each object; represent such forces as vectors <p>Science - Permanent and induced magnetism, magnetic forces and fields</p> <ul style="list-style-type: none"> - describe the characteristics of the magnetic field of a magnet, showing how strength and direction change from one point to another <p>English - Spoken</p> <ul style="list-style-type: none"> - listening to and building on the contributions of others, asking questions to clarify and inform, and challenging courteously when necessary

Relates to:

Workshops & Theme Days	Shows	Trails	Other exhibits
<ul style="list-style-type: none"> • Atoms to Astrophysics (KS3 & KS4) 	<ul style="list-style-type: none"> • Launch it! (KS3) 		<ul style="list-style-type: none"> • Magnet maze • Magnet tubes • Magnetic liquid

