

Magnetism - Field Lines

The magnetic field is an area around a magnet where magnetic force can be felt. Magnetic field lines are imaginary lines used to represent magnetic fields and help us understand the strength and direction of the magnetic field.

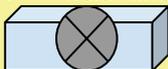
Identify Poles Based on Field Lines

When you sprinkle iron filings around a magnet you would observe a wonderful pattern getting formed. This is because the iron filings get arranged along the magnetic field lines.

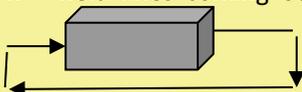
The magnetic field lines you observe in different orientations of the magnets can be categorised into three main shapes. Predict, observe and record the shape of the field lines for the given magnet and orientation.

Your options are:

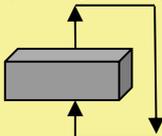
P – field lines coming out/entering in perpendicular to the paper



R – field lines coming out/entering in from the right of the magnet



T – field lines coming out/entering in from the top of the magnet



#	Magnet	Orientation	Prediction	Observation
01	Bar		<input type="checkbox"/>	<input type="checkbox"/>

#	Magnet	Orientation	Prediction	Observation
02	Bar		<input type="checkbox"/>	<input type="checkbox"/>
03	Bar		<input type="checkbox"/>	<input type="checkbox"/>
04	Ring		<input type="checkbox"/>	<input type="checkbox"/>
05	Ring		<input type="checkbox"/>	<input type="checkbox"/>

Visibility of the Magnetic Field Lines

Pour the iron filings in a closed container and make pinholes on the cap of the container to make a salt-pepper type of container. Place 3 ring magnets such that circular part touches the paper (orientation in row 05 in previous table). Vary the amount of iron filings sprinkled around the magnet and observe the clarity of the field lines in each case.

Your options are:

C – Field lines with clear boundaries

M – Boundaries of some field lines are merged

V – General shape of magnetic field is visible but separate lines not visible

#	Quantity of iron filings	Field lines pattern
06	Around 10 g (half teaspoon) of iron filings	<input type="checkbox"/>
07	Around 20 g (1 teaspoon) of iron filings	<input type="checkbox"/>
08	Around 40 g (2 teaspoon) of iron filings	<input type="checkbox"/>