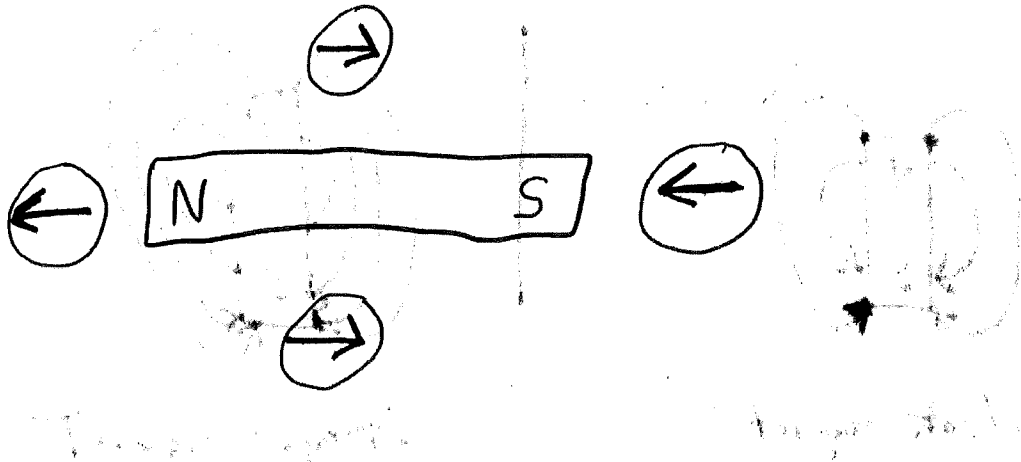
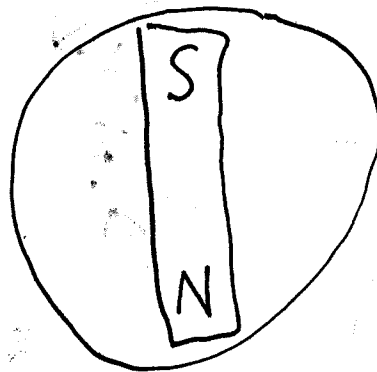


Magnetic Fields

Magnets attract and repel other magnets without touching so there are magnetic fields surrounding magnets. We define the direction of a magnetic field surrounding a magnet to be the direction a compass would point if placed in that position, this is towards the South pole and away from the North pole.

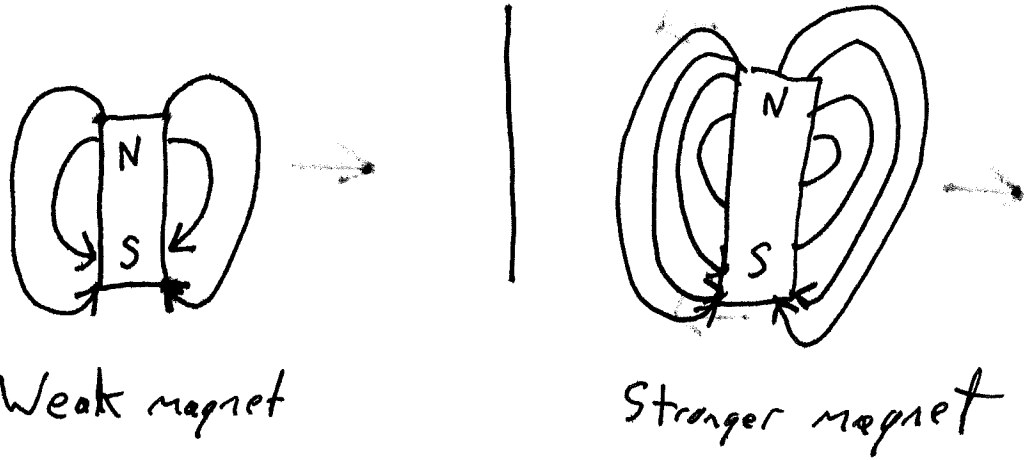


A compass is a useful navigation device on Earth because the Earth has a magnetic field, a compass points to the South magnetic pole of the Earth which is fairly close to the geographic North pole.



The major difference between magnetic fields and electric fields is that point charges in electric fields have charges which are either + or -. Magnets always have BOTH a North and a South Pole.

One way to represent the magnetic field surrounding a magnet is to draw field lines showing the direction of the magnetic field, in this method the strength of the field is shown by the number of lines.



Magnetic Flux is the density of the field lines. Areas with many lines have strong magnetic field strength.

Example:

