

Magnetism

This task is about magnetic fields.

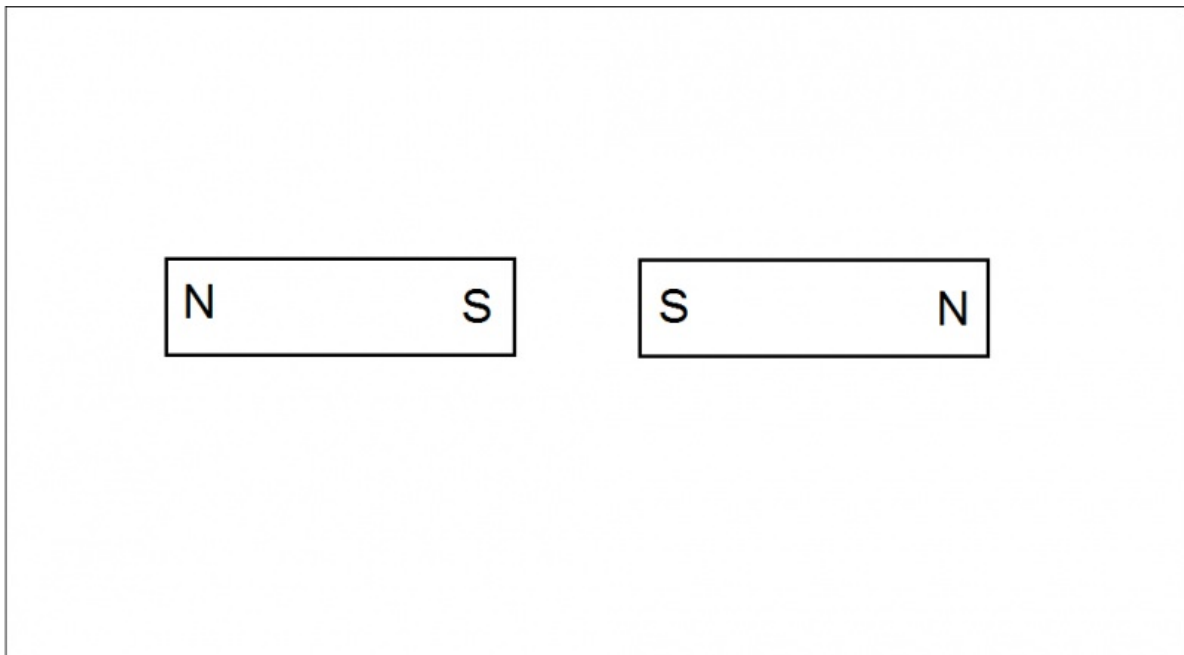
a) A steel knitting needle is magnetised by stroking it 50 times in one direction with the north pole of a powerful bar magnet until it becomes magnetised.

What happens when this knitting needle is cut in half?

- It becomes two magnets, each has a north and south pole.
- It becomes two magnets, one has a south pole but no north pole; and the other has a north pole but no south pole.
- It becomes two magnets, one has a strong south pole and a weak north pole; and one has a strong north pole and a weak south pole.
- It loses its magnetism once it has been cut into two pieces.

b) Draw on the diagram below:

1. The lines of the magnetic field that would occur around and between the two magnets when they are pushed together.
2. The direction the field flows in.



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