

Electricity and Magnetism Entry Level Assessment

Students explored forces and energy related to permanent magnets and electromagnets. The materials they used were: two bar magnets, a compass, iron filings, a large iron nail, electrical wire, a battery, and metal paper clips.

PE(s): MS-PS2-3

Item 1

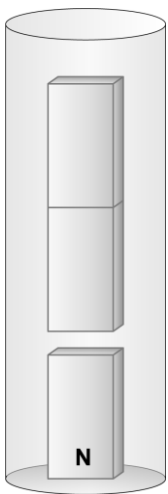
The students learned how the poles of magnets attract and repel each other. Select all the magnet pole interactions that are correct.

Part A

- A. North poles attract south poles.
- B. North poles attract north poles.
- C. North poles repel north poles.
- D. South poles attract south poles.
- E. South poles repel south poles.

Part B

Three bar magnets have been dropped into a glass tube. The two upper magnets are suspended above the bottom magnet. One pole has been marked. Mark all the other poles with an N for north or an S for south.



PE(s): MS-PS2-5

Item 2

When iron filings are sprinkled around a magnet they line up with the magnetic lines of force that make up the magnetic field. The students sprinkled filings around the magnets shown below.

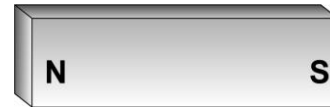
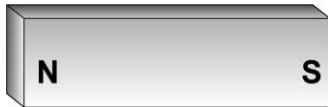
Part A

Draw lines to show the magnetic lines of force around this bar magnet that the filings revealed.



Part B

Draw lines to show the magnetic lines of force between these magnets that the filings revealed.



Part C

Draw lines to show the magnetic lines of force between these magnets that the filings revealed.

