Materials

* Two strong magnets
* Iron filing

Procedure- To perform this experiment, take the magnets and try to push them together with the same poles i.e. North Pole to North Pole. How far are they apart until you feel the “push”? Now lay one on a flat surface and hover the second one over it. Try this numerous times. Does the distance of the “pull” change? Now place both magnets on a flat smooth surface with poles facing each other and sprinkle iron filings around the magnets. What happens?

Observation- While pushing them together, notice how the distance at which the magnets begin to repel each other remains constant. The same can be said about the attraction of the magnets. Finally, notice how the iron filings will oddly rearrange themselves to point upward.

Conclusion- The distance of attraction/repulsion does not change because the electromagnetic field does not change, unless the magnets have been altered i.e. broken, heated, cooled. And it is due to the magnetic field that causes the iron filings to take shape of the field. The shape depends on which pole is facing which.

The distance where the attractive/repulsive forces between the magnets are effective is constant because the magnetic fields of the magnets stay intact unless the magnets are seriously altered i.e. broken, heated, or cooled. It is also the force of the magnetic field influencing that of another, making the filings stand up in an odd manner.