Force Of Magnetic Attraction in Different Shapes

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Studying Magnetism

INTRODUCTION

Magnetism in short is the force and attraction between metals. In this experiment, I tested multiple different types of magnets, some with a magnesium and calcium exterior covering for less attraction but predominantly iron and neodymium iron boron (NdFeB) magnets. This experiment's purpose is to show how the more magnets you have the more magnetic force you have. The main question was why the spherical magnets are able to attract so many magnets and how the concepts of ferromagnetism and paramagnetism are so important.

MATERIALS

1. A range of different sized Fe magnets (Fe “Iron” = flat/circular)
2. 4 spherical NdFeB magnets (NdFeB “Neodymium Iron Boron” = spheres)
3. Safety Goggles
4. A video recorder/camera

5. A mass scale (grams)

PROCEDURE

1. Keep all of your Fe magnets in a metalloid container (ex. plastic)
2. Make sure your magnets are connected to each other creating a cluster with at least 30-40 magnets (for coolest results have thicker/denser/wider magnets on top ref. picture above)
3. Measure the mass (if you can) of your magnet cluster (if you don't have a scale big/strong enough to carry the weight, take increments of 5 or 10 magnets and find the total mass of each using arithmetic)
4. One by one add one sphere to the top of your magnet cluster and do a lift test to see how many spheres can carry the cluster
5. If you have any spare Fe magnets add more to the cluster to test the strength of the spherical magnets
6. Finally, if you're feeling very confident in the strength of the spherical magnets, do a swing, circle bounce test.
7. Record your observations

DATA

Fe Magnets	$Mass_{(g)}$	
30		
40		
Lorem ipsum		

NdFeB Magnets	$Mass_{(g)}$	
30		

40		
Lorem ipsum		

RESULTS

The data tables (which I didn't have time to add) showed that the NdFeB magnets had an incredible force of attraction.

CONCLUSION

This experiment showed as the number of iron and the neodymium iron boron magnets increased, the greater the magnetic force and attraction was between them.

REFERENCES

1.