

MAGNETISM



Mia Anderson



Magnetism

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Table of Contents

Introduction.....	Pg. 1
.....	
What's A Magnet?	Pg. 2-3
.....	
Not Everything's Magnetic!	Pg. 4-6
.....	
Our Magnetic Earth	Pg. 7-8
.....	
Our Life With Magnets	Pg. 9-10
.....	
North And South Poles	Pg. 11-12
.....	
Conclusion	Pg. 13
.....	
Glossary	Pg. 14-16
.....	
Bibliography	Pg. 17
.....	

Introduction

Have you ever wondered what makes magnets stick to your fridge? Magnets are attracted to types of metals and the atoms in those metals. Magnets are everywhere in our everyday lives but not everything has metal in it, so therefore it's not a magnet. Even our Earth is a magnet. A GIANT magnet. As you can see, magnets are everywhere.

What's a Magnet?

Every object in the world is made up of tiny microscopic things called atoms. The atoms in these objects are all scattered, pointing every which way. When you put a magnet up to your fridge the atoms in the fridge and magnet will line up until you take off the magnet, then they're scattered in each object once again. You can think of each atom as a tiny magnet.



Now they're scattered.....Now they're not

Now, it doesn't just happen with fridges and magnets, it could happen to any object that attracts to magnets.

Not Everything's Magnetic!

Not everything is magnetic, and that's for sure! For example, Lodestone is a natural magnet, others are man-made. Man-made magnets come in different shapes and sizes.



Magnets come in different shapes.

There are many minerals that are magnetic such as Chromite, a more weak magnet, and Iron-Nickel, a stronger magnet. Below shows a chart of magnets and if they are strong or weak.

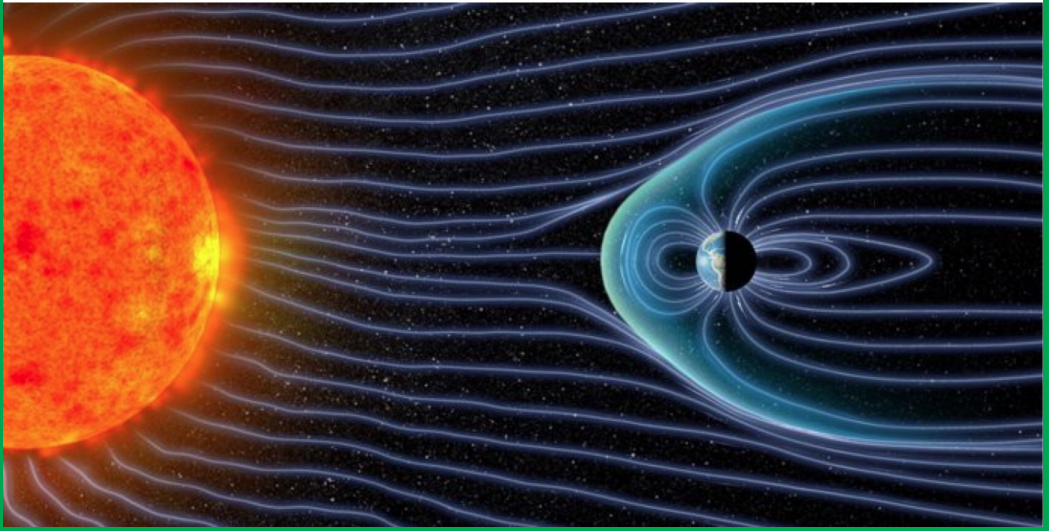
Magnet	Strong or Weak	More Information	How It Looks/ Picture
Iron-Nickel	Strong	Is Strongly Attracted to Magnets	
Chromite	Weak	The Only Mineral Ore of Chromium Metal	
Magnetite	Strong	Is Strongly Attracted to Magnets	
Platinum	Weak	Was Discovered in 1735 by Antonio de Ulloa	

If it's iron-nickel or platinum it's magnetic, but not everything has magnetic properties. Wood, a blanket, and stainless steel all aren't magnetic. Every magnet has a metal property. If an object has a metal property it may stick to a magnet, and if an object doesn't have metal then it won't stick.

Our Magnetic Earth

Believe it or not our Earth is a giant magnet. You could even call it a super-magnet. Why you may ask? Because Earth not only is a giant magnet, but it has a magnetic force field otherwise known as a magnetic field as well.

This magnetic field protects us from solar radiation. However some radiation gets through, and that is what causes the aurora. Without our shield, the solar wind would blow the atmosphere away, and without an atmosphere liquid water could not exist on the surface. And without water, life would no longer exist on earth.



Our magnetic field protects us from radiation

The field extends far out into space and acts like a shield to solar radiation. If you want to find more information watch this short video about the earth's shield. To watch it, copy and paste it into Safari.

<https://goo.gl/u4oLok>

Our Life With Magnets

There are many things in our lives that use magnets. Elevators, blenders, vacuum cleaners, washing machines, telephones, they all use magnets.

If we didn't have magnets our world would be much different. We wouldn't have elevators, blenders, vacuum cleaners, washing machines, or telephones. Could you imagine? I for one couldn't.

From planes to a computer, magnets are everywhere. As you can see, there are lots of things that use magnets.



North and South Poles

Magnets have a North Pole and South Pole. If you look at a bar magnet you might notice that on one end it has a N and the other side a S. That stands for North and South.



Opposites attract and likes repel. You may have heard this before and wondered what it meant. Opposites, meaning north and south, attract or, stick together. Likes, north and north or south and south, repel, or push apart. In fact, just like all magnets, the Earth has a north and south pole.



Conclusion

As you can see, Magnets are everywhere in our everyday lives. You learned that everything is made up of atoms, and when you put two magnets together, the atoms line up. You also learned that not everything is magnetic. Magnets attract to objects with metal in them, that our Earth has a magnetic field, and finally, magnets have a North and South Pole.

Glossary

Atoms- The smallest component of an element having the chemical properties of the element, consisting of a nucleus containing combinations of neutrons and protons and one or more electrons bound to the nucleus by electrical attraction; the number of protons determines the identity of the element.

Magnetic Field- a region of space near a magnet, electric current, or moving charged particle in which a magnetic force acts on any other magnet, electric current, or moving charged particle.

Solar Radiation- energy radiated from the sun in the form of electromagnetic waves, including visible and ultraviolet light and infrared radiation.

Aurora- a radiant emission from the upper atmosphere that occurs sporadically over the middle and high latitudes of both hemispheres in the form of luminous bands, streamers, or the like, caused by the bombardment of the atmosphere with charged solar particles that are being guided along the earth's magnetic lines of force.

Attract- to draw by a physical force causing or tending to cause to approach, adhere, or unite; pull (opposite of repel)

Repel- to push back or away by a force (opposite of attract)

Solar Wind- an emanation from the sun's corona consisting of a flow of charged particles, mainly electrons and protons, that interacts with the magnetic field of the earth and other planetary bodies.

Atmosphere- the gaseous envelope surrounding the earth which keeps in the air.

North Pole/South Pole- 1. either of the two points on the earth's surface where the dipping needle of a compass stands vertical, one in the arctic, the other in the antarctic. 2. the region of a magnet toward which the lines of magnetic induction converge south pole or from which the lines of induction diverge North Pole.

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