Electricity and electromagnetism: Webquest

Discovery of the electromagnet

http://www.ck12.org/physical-science/Electromagnetic-Devices-in-Physical-Science/rwa/Lucky-Discovery/?referrer=concept_details

How was the electromagnet discovered?

Who discovered it?

What has this discovery meant for us?

BBC Electricity and Magnetism

https://www.bbc.com/bitesize/guides/z3g8d2p/revision/1

Questions:

1. Why is an iron core needed in an electromagnet?

2. How are electromagnets different to either temporary or permanent magnets?

3. What happens when you add more coils to the wire in an electromagnet? What else can you do to increase the magnetic field of an electromagnet?

Electromagnet Simulation

http://static.lawrencehallofscience.org/kidsite/portfolio/virtual-electromagnet/

This is an interactive simulation of an electromagnet. ***Your goal is to test the different factors*** that can change the ***strength of the magnet (i.e. how many fillings it can pick up)***. For each factor that you test you must decide on a standard to compare it against. ***This means that all other factors must remain the same while you test only one of them.***

1. What is the effect of changing the....

a. Type of Wire:

b. Thickness of the wire:

c. AC or DC power supply

d. Voltage:

e. Number of Winds in the wire:

2. Can you make the electromagnet pick up all of the iron fillings? What conditions did you need?

Uses for electromagnets:

Describe how an electric bell works and provide a diagram

https://www.bbc.com/bitesize/guides/z3g8d2p/revision/6

Diagram	How it works

How does a loudspeaker work?

http://electronics.howstuffworks.com/speaker6.htm

http://www.explainthatstuff.com/loudspeakers.html

Diagram	How it works

Research modern day things we use electromagnets in:

List three that you found:

How does the electromagnet work in each of these?

Make a claim as to whether or not you feel electromagnets are safe and give three pieces of evidence (warrant) to support your answer.