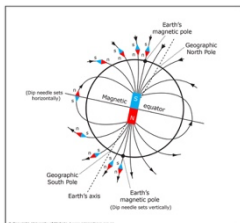


Electric and Magnetic Interactions (Part 1)



Essential Question: How can electric and magnetic forces interact?

Through observation of electric and magnetic forces, students will be able to define and analyze the properties of objects. Students will investigate how magnets work and the cause and effect relationships as they explore numerous interactions. Students will also apply scientific ideas about magnets to solve a given problem by creating a compass out of ordinary materials.

Next Generation Science Standards

- 3-PS2-1. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.
- 3-PS2-2. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.
- 3-PS2-3. Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.
- 3-PS2-4. Define a simple design problem that can be solved by applying scientific ideas about magnets

Materials provided by the teacher for each student:

Disposable bowl or cup, small paperclip, small piece of Styrofoam (could cut small pieces from a Styrofoam plate) or a leaf, water. Students will also need various items of their choice to test with such as a pencil, spoon, brass fastener, stick, pink eraser, foil, penny, rock etc.)

Materials provided by Greenbush:

Greenbush will arrange to have magnets dropped off and picked up or you will receive them in the mail with instructions on how to return.

Advanced preparation:

- Gather exploration materials for students and place in a baggie or a small area on their desk. They can bring stuff from home or you can gather things for them.
- Cut Styrofoam plate into small rectangular pieces or have students bring in a leaf (depending on time of year).
- *Optional-Open up paperclips ahead of time as shown in picture. Students should be able to do this on their own.



Lesson Overview: Students will investigate how magnets work and the cause and effect relationships as they explore numerous interactions. Students will also apply scientific ideas about magnets to solve a given problem by creating a compass out of ordinary materials.

Be watching for more lessons in the **3rd Grade Electric and Magnetic Interactions Series!** November: (Part 2)

Program Connection Information

Please use an external microphone (conference style) rather than the integrated one in the computer for the audio for your class and locate it centrally in the room. It can be difficult for the Greenbush teacher to hear the students using the computer microphone and therefore it reduces the interactive nature of the lesson. It is fine to use the computer webcam for your video source.

All classes will take place using Zoom desktop video. If your building is already set up to use a desktop video application with a computer, simply open a browser and enter <https://greenbush.zoom.us/j/5337714346> in the URL space. You may need to download Zoom launcher software (free download) if you don't already have it. This needs to be done in advance of the lesson.

If using a Polycom video conferencing unit (or any legacy type video conferencing unit) to connect to a ZOOM conference, make sure the unit is in "encrypted mode" then dial the following IP on the internet: 162.255.37.11 or 162.255.36.11 and once connected, they will ask for a MEETING ID: enter 533 771 4346 (for Sheila at Science Center).

It's always a good idea to touch base with your district technology facilitator prior to your program to make sure all systems/equipment are in place and operational and that there aren't any firewalls in place that might prevent you from connecting to Zoom.

Once you connect, you will enter a Zoom waiting room. Your Greenbush teacher will admit you into the final meeting room.

If you have questions, please call Sheila Sandford at Greenbush, 620-724-6281, or email at sheila.sandford@greenbush.org (best method of contact).