Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour\_\_\_\_\_\_\_\_\_

 **Magnetism Station 2: Exploring Magnetism Activity 1 and 2**

**Content Objective:** Students will learn about the magnetic field of a magnet and relate it to space.

**Writing Language Objective:** Students will explore magnets and their magnetic fields.

**Do not bring magnets near computers!!**

**Materials (pairs)**

1 Ziploc bag with iron filings and index card or petri dish with iron filings

-Paper clip - 2 Bar magnet -Additional shaped magnet

**Directions:** Follow the activity below answer all questions using complete sentences with a restate.

1. Lay the plastic bag/petri dish on the table and shake it gently back and forth. Let your partner try it, too. With a little practice you can get a thin layer of filings to spread out. The filings should not all be in a lump at one end. Draw what you see below (label your picture)

3. Carefully lift the bag/petri dish and set it on a paper clip. Describe what happens and draw it in the space below.

4. Can you PREDICT what will happen to the iron filing if you place a magnet on the table and set the bag down on top of the magnet? Write your PREDICTION below.

5. Now place the magnet on the table. Then gently pick up the bag/petri dish and place it on the magnet. What happens? Was your prediction correct? Draw what you see in the space below.

6. Replace the bar magnet with another shaped magnet, what pattern did it create?

7. Place two magnets under the bag/petri dish.

A. What does the pattern look like when the magnets are placed so they are attracted to each other?

B. What does the pattern look like when the magnets are placed so that the repel one another?

C. Does the shape of the magnetic field change?

**Part 2: Activity 2**

1. Lay the plastic bag/petri dish on the table and shake it gently back and forth until you get a thin layer of. The filings should not all be in a lump at one end.

2. Lay your paper clip on the other end of your desk. When you have a nice layer of filings, gently lift up the bag/petri dish and hold it right over the paper clip.

A. What happens?

B. Do the filing move around?

3. Now, lay your magnets on the other end of your desk. Again, shake your bag/petri dish so that you have a thin layer of filing on the index card. Then gently lift up your bag/petri dish and hold it right over the magnet.

A. What happens?

B. Do the filings move around?

C. Draw a picture of the magnetic field you see in your bag.

D. We cannot really see the magnetic field, but we can see how it moves the iron filing around. What else is this like in nature? Explain.

4. Now put your other bar magnet under the zipper-lock bag/petri dish. Does the magnetic field of this magnet look like the first one? Draw what you see on your data sheet.

5. Put your two bar magnets end-to- end so that they are ATTRACTED to each other and then put your zipper lock bag/petri dish on top. What do the magnetic fields of the two magnets look like now? Draw a picture on your data sheet.

6. Put your two bar magnets end-to- end so that they are REPEL to each other and then put your zipper lock bag/petri dish on top. What do the magnetic fields of the two magnets look like now? Draw a picture on your data sheet.

7. Select a different shaped magnet and then put your zipper lock bag/petri dish on top. What do the magnetic fields of the two magnets look like now? Draw a picture on your data sheet.

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| --- |
| Magnetic field of a bar magnet |
| Magnetic field of two magnets ATTRACTED to one another |
| Magnetic field of two magnets REPELED by each other |
| Magnetic field of a different shaped magnet |

Purple **Part 3: Select either Part A or Part B to complete. If you complete both then one will be counted as extra credit.**

**Part A.** Please include a paragraph describing the electromagnetic field. Define it, explain why it is important and include important and relative details about it. (5-7 sentences) You must also include 2 pieces of textual evidence at least one from the text and one from a credible internet source.

**Part B:** Please create a mini poster of the electromagnetic field surrounding Earth. Your picture should include the following, be colored, labeled, detailed and neat.

-Earth -The Sun -North Pole

-Electromagnetic Field -South Pole -Satellite

-Space Junk -The moon(Extra credit include a moon phase, but the moon must be in the right position in relation to the Sun and Earth.