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 - 3x5 in index card -Teaspoon of iron fillings

-Paper clip - 2 Bar magnet -Additional shaped magnet

**Directions:** Follow the activity below

1. Take the Ziploc bag and place the index card inside. Add about a teaspoon of iron fillings. (this may already be done for you) KEEP THE MAGNETS AWAY FROM THE IRON FILLINGS

2. Lay the plastic bag on a 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 fillings on top of the index card in your bag. The fillings should not all be in a lump at one end. Draw what you see below (label your picture)

3. Carefully lift the bag 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 fillings 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 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.

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 on the table and shake it gently back and forth until you get a thin layer of fillings on top of the index card in your bag. The fillings 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 on the index card in your bag, gently lift up the bag and hold it right over the paper clip.

A. What happens?

B. Do the fillings move around?

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

A. What happens?

B. Do the fillings 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 fillings around. What else is this like in nature? Explain.

4. Now put your other bar magnet under the zipper-lock bag. 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 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 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 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 |