Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Magnets**

Directions: Work through each part of the activity and follow each set of directions.

Materials: ring magnets, bar magnets, u-magnets, paper clips, pencil

PART 1: MAGNETIC POLES

Procedure: Develop your own tests to answer the following questions or observe the teacher’s demonstration.

1. Where are the poles on a magnet? How are the poles classified?
2. How do you tell North vs. South?
3. Fill in the chart describing the results of the following combinations. What happens when you put the north pole of one magnet with the north pole of a second magnet? Etc.

|  |  |
| --- | --- |
| N / N |  |
| N / S |  |
| S / S |  |

PART 2: FLOATING MAGNETS

 What would happen if you put two ring magnets on an upright pencil?

Procedure: Arrange the ring magnets on a pencil in multiple ways to discover which ways will allow the magnets to float on the pencil. Arrange various numbers of magnets in various ways. Draw and label three different combinations of magnets on the pencils.

1. Why does the magnet float on one side and not the other?
2. What would happen if the pencil were not there?
3. What happens to the spaces between the magnets as you add more?
4. Why do the magnets float?

PART 3: HOLDING POWER

Which will hold more paper clips, two separate magnets or one 2-unit magnet?

Procedure: Use the large paper clip as a hook to hold the small paper clips. Attach the large bent paper clip to Magnet #1 and count how many small paper clips the magnet can hold until the big paper clip falls off. See teacher set-up for an example. Repeat steps for Magnet #2. Repeat steps for combined magnets to create one 2-unit Magnet.

|  |  |  |
| --- | --- | --- |
|  | Predicted # of Paper Clips | Actual Number of Paper Clips |
| Magnet #1 |  |  |
| Magnet #2 |  |  |
| Total of 2 Separate Magnets |  |  |
| One 2-unit Magnet |  |  |

1. What did you find out? Which held more paper clips, 2 separate magnets or one 2-unit magnet?

PART 4: COW MAGNET

 How does a cow magnet work?