raft
RESOURCE AREA FOR TEACHING

MAKER JOURNAL

Name:_____ Date:_____

Unit: Electromagnetism Lesson 2: What is a Magnet?

You are given a variety of magnets and materials by your teacher/facilitator. Use the space below to record your observations (notes and drawings). Be ready to discuss your findings.

Magnetic interactions exploration
Put each magnet and another material together and write down and draw what you notice about how they interact. Do this for all materials and magnets given to you.

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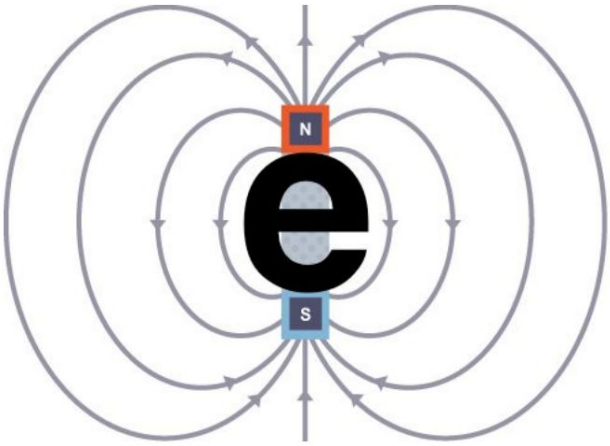
The activity below will help you practice what you learned from the video "Magnets: How Do They Work?" It will require you to move and turn around, so make sure you have some space to do so.

Activity: "Magnet, Magnetic, Non-Magnetic"

Your teacher or facilitator will display or read aloud names of different materials. The picture to the right represents an electron in those materials. Decide if the materials are magnets, magnetic, or non-magnetic. You and your classmates will be the electrons and will face in the direction the electrons would behave according to your decision for each material. Then, you will face in the direction the electrons would behave if a magnetic field was introduced to the material.



Investigation: Magnetic Repulsion Force

After watching the video "RAFT Magnetic Pole", assemble the RAFT Levitating Ring Magnet device. Work with your classmates to figure out how to measure how much weight is needed to push the magnets together. For example, in the video you see pennies being used as weights to push the top magnet down. Your teacher or facilitator will provide items that can be used as weights.

Question: As the magnets are pushed closer together, how much weight is required to get the magnets to approach each other? You can figure this out in terms of the items you use as weights. For example, if using pennies as weights, you may find it takes many pennies to push the magnets close together.

Use the space below and on the next page to record your observations and data. You may want to draw a table to organize the data, especially if you are measuring how for down the top magnet moves with specific numbers of weights (example: 10 washers → 3 cm down).

Challenge: Find a way to **graph** your data to determine the strength of the repulsion force of the magnet. The force will be in terms of the items you used as weights. For example, if you used washers, you may find that it takes 10 washers to push the magnet downward 3 cm. The x-axis might be the number of washers and the y-axis can might be the distance the top magnet was pushed down for each number of washers.

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