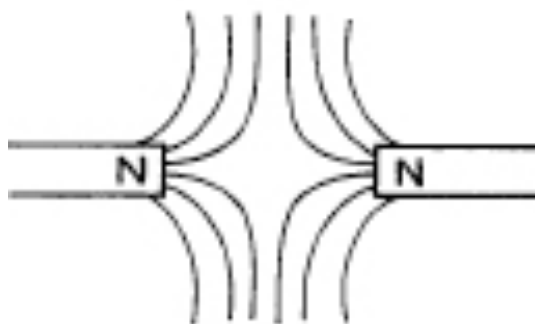


## Lab: Magnetic Force, Part Two

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When you hold two magnets close to one another, they feel either an attractive or a repulsive force between them, depending on their orientation. It appears that the magnitude of this force depends on the distance between the two magnets. But how?



Question: Describe *quantitatively* the relationship between magnetic force and distance between the magnets. Use whatever tools and techniques you'd like, as long as they can be explained to the rest of the class during the presentation.

### Planning the Analysis

Groups of 4

10 minutes

- You may wish to have students redo the homework problem from last semester.
- *How are you going to illustrate your data?*
- *How are you accounting for uncertainty in the measurements?*
- *What seems to be the behavior or features of this relationship?*
- *How can you quantify this relationship so that it can be communicated to others?*

### Data Analysis

Groups of 4

20 minutes

- Plan how you will respond to students whose technique is to tell Excel to do a functional fit.

### Class Discussion

Whole Class

40 minutes

- Think about what you are trying to promote in the class discussions and how you will promote it. More participation? More serious critique of the presenting group? More clarity in the presentations (about differences in experimental or analytical technique)? More discussion of variation in the data?

### Writing the Report

Groups of 4

10 minutes