

# Notebook Plan

## Experiment Designs

(Today's Date)

Focus Question: What makes the design of an experiment good or bad?

Initial Ideas:

Evidence:

1. Experiment: If the size of a magnet increases, what happens to its strength?

Hypothesis: If the size of the magnet increases, then the strength of the magnet will increase, decrease, not change (PICK ONE ANSWER AND WRITE IT DOWN!!).

Conduct experiment and record your data in your data table.

Table 1: Strength of Magnets and Their Sizes			
Distance When Magnet Attracted Paper Clip (mm)	Size of Magnets		
	Small Magnet	Medium Magnet	Large Magnet
Trial 1			
Trial 2			
Trial 3			
Best Value			
Uncertainty			
Our Ranking			

1. The true value for the LARGE magnet is probably within \_\_\_\_\_ cm (BV - U) and \_\_\_\_\_ cm (BV + U).

2. The true value for the MEDIUM magnet is probably within \_\_\_\_\_ cm (BV - U) and \_\_\_\_\_ cm (BV + U).

3. The true value for the SMALL magnet is probably within \_\_\_\_\_ cm (BV - U) and \_\_\_\_\_ cm (BV + U).

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## Conclusion

Write your conclusion for the experiment by completing the following sentence.

1. As the size of the magnets used in this experiment increase, the strength of the magnets \_\_\_\_\_ (increase, decrease, does not seem to depend on size).

## Table 2: Magnets of the SAME material

Complete Table 2 using the ranking of those teams who use magnets all made of the SAME material. Record *strongest*, *middle*, or *weakest* in each cell.

Write your conclusion for the experiment where teams used magnets of the SAME material.

Ranking of Magnets	Size of Magnets		
	Small Magnet	Medium Magnet	Large Magnet
Team 1			
Team 2			
Team 3			
Team 4			
Team 5			

2. Using Table 2: As the size of the magnets in this experiment increase, the strength of the magnets \_\_\_\_\_ (increase, decrease, does not seem to depend on size).

## Table 3: Magnets of DIFFERENT materials

Complete Table 2 using the ranking of those teams who use magnets all made of DIFFERENT materials. Record *strongest*, *middle*, or *weakest* in each cell.

Write your conclusion for the experiment where teams used magnets of DIFFERENT materials.

3. Using Table 3: As the size of the magnets in this experiment increase, the strength of the magnets \_\_\_\_\_ (increase, decrease, does not seem to depend on size).

Ranking of Magnets	Size of Magnets		
	Large Magnet	Medium Magnet	Small Magnet*
Team 6			
Team 7			
Team 8			
Team 9			
Team 10			

4. The focus question for this activity is: What makes the design of an experiment good or bad? Based on what you learned in this activity, write the answer to the focus question.

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