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(10-23-25)
6th-grade Science
Science Fair Logbook

Logbook

Title: Can magnets make something float?

- Vague overview related to the lab.

Objective: My objective is to make a dowel float.

- In this experiment ….
  I will be trying to redo the gravitational pull.
  I will try to redo the Statement of the Problem:
- The problem in this experiment is ….
- The statement of the Problem should explain what it is you are trying to discover or prove. The Purpose should be written in the form of a statement. Try to make your statement original and creative.

The statement should clearly explain:

1. Start with "What is the problem in this experiment?" The next sentence should address that in a complete sentence
   I think the magnets will help lift the dowel.
2. Why do you want to do this experiment?
   I want to do this experiment because I have always loved magnets.
3. How do you think the information gained from the experiment will help other people?
   It can revolutionize cars, trains, and more…
4. Why is your experiment important to the real world?
   It is critical because people are bored with old, boring cars and want something new
5. Why is this issue interesting or critical to you and the community?
   It is interesting to me because Earth itself is one big magnet.

Dependent and Independent Variable:

- Independent - The material used in the experiment could have changed from cardboard to plastic.
- Dependent - The north repels with the north, and the south repels with the south. While the north and the south attract.
- Control - Using a dowel instead of a pencil also controls the length of the dowel.

Hypothesis:

- What do we think will happen?
  If I put magnets on the dowel, then the dowel will float upwards because the magnets are strong enough to lift the dowel.
    - This is an educated guess; explain your thoughts. Your hypothesis is made before experimenting. It is not counted as wrong if you had a different outcome at the end.
- Statement should be written in the following format:

- Can magnets lift objects
    - If……then…..because…..
- Include links from your research

http://pysicsstackexchang.com

- List of materials used (must include quantity)

  Materials: 8 magnets, 6 round and 2 rectangular, 1 dowel, 4 pieces of cardboard, scissors, 1 rubber band, 14 styrofoam, 2 wood boxes, and hot glue.

Procedures:

- Number your steps.
- Step by step, explain what you did.
    - These should be in your own words (reflection), the more detail the better

- Conduct a minimum of 10 trials

Trail 1-6:

1. Cut 2 cardboards for the sides, making a hole in each for the pencil to stick out of both sides.
2. Place a pencil into two circle magnets with a hole, and hold in place with hot glue.
3. Cut 2 cardboard for the base, cutting four holes for four circle magnets to rest in, and add hot glue.
4. Use a straight, long piece of 8" cardboard to brace on the end of the pencil.
5. Place the pencil into the cardboard side holes and hold it over like a pole of a magnet.

Repeat steps with slightly different holes in the cardboard and adding glue as needed.

Trail 6-9:

1. Cut 2 cardboards for the sides, making a hole in each for the dowel to stick out of both sides.
2. Place a dowel into two circle magnets with a hole, and hold in place with hot glue. (This is heavier and longer than the pencil.)
3. Use a wooden box for the base, place foam to hold on each side two circular magnets and 1 square magnet.
4. Use another wooden box upright to brace the dowel on one side.
5. Place the dowel into the cardboard side holes and hold it over like pole of magnet.

Repeat steps with slightly different alignments and spacing.

Trail 10-11:

1. Cut 2 cardboards for the sides, making a hole in each for the dowel to stick out of both sides. Painting them green.
2. Cut 1 cardboard piece to insert between the sides and paint it green. To stop the dowel from hitting the foam if it were to fall.
3. Place a dowel into two circle magnets with a hole, and hold in place with hot glue.
4. Use a wooden box for the base, place foam to hold on each side two circular magnets and 1 square magnet.

5. Use a rubber band to hold the side, so it is free-standing.
6. Use another wooden box upright to brace the dowel on one side.
7. Place the dowel into the cardboard side holes and hold it over like pole of magnet.
8. Made a platefoam to better line up the wooden boxes. Painted it yellow.

Repeat steps with slightly different alignments and spacing.

Trail 10-11:

1. Cut 2 cardboards for the sides, making a hole in each for the dowel to stick out of both sides. Covered the green side with contact paper.
2. Cut 1 cardboard piece to insert between the sides and paint it green. To stop the dowel from hitting the foam if it were to fall.
3. Place a dowel into two circle magnets with a hole, and hold in place with hot glue.
4. Use a wooden box for the base, place foam to hold on each side two circular magnets and 1 square magnet.
5. Use a rubber band to hold the side, so it is free-standing.
6. Use another wooden box upright to brace the dowel on one side.
7. Place the dowel into the cardboard side holes and hold it over like a pole of magnet.
8. Made a platefoam to better line up the wooden boxes. Painted it yellow and added contact paper to remember where to place the standing wooden box.

Repeat steps with slightly different alignments and spacing.

Results: For the first step, was to cut the foam, then I measured where to cut. After that, I cut out the foam, then I put the magnets in. Finally, I add the bearers

- Data/Observation - Graphs, charts, data tables, observations, measurements, and weights will all go into this category.

1. Dowel 7-½"
2. (2) Cardboard sides 9" x 3-¼"
3. Green cardboard 5-¼" x 5-½"
4. (2) Wooden boxes 5" x 3"
5. Foam 3-½" x 2-¾"
6. Platform 9-¾" x5-½"

7. (6) Circle magnet 1-¼"
8. (2) Rectangle magnets 1-¾" x 3-¾" x ½"

Conclusion:

1. Did the results of the experiment support OR contradict your hypothesis?

My results did in fact support my hypothesis.

2. Did you accomplish your objective? Why was the experiment successful?

Yes, the objective was to lift the dowel, and it was lifted by the magnets. It was successful because the magnets reversed gravity by placing the like poles together.

3. Analysis of data/results. What did the results prove?

It proved that magnets can reduce the gravitational pull.

4. What did you learn from this lab?

Magnets can be used to float an object.

5. What would you do differently or change if you did this lab again?

A heavier object to use

- Take it to the next level? Add more magnets
- Make it more precise? Can a 1in thick magnet levitate a piece of iron
- Larger sample size? A heavier object to use

(This is your final message to readers and potential judges.)

Pictures:

- All pictures/captions should be added to the slide presentation only.

References:

- http://pysicsstackexchang.com
- www.jrailpass.com/blog

- Site name
- Title of webpage
- Date of retrieval