		 VRIJE ASO.SCHOOL

Mars, here we come …

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SCHOOL / CLASS: liceo linguistico Ilaria Alpi 4^H	MARKS: /…

EXPERIMENT: magnet on a balance

RESEARCH QUESTION

- Can you influence the weight of a magnet with another magnet?
- Who has the strongest magnet, De Bron or Liceo Linguistico Statale?

HYPOTHESIS (indicate the correct answer)

- The weigth of a magnet ***does change*** / *doesn't change*.if you come near with an other magnet.
- The change in weight is ***dependent*** / *independent* from the way you hold the other magnet.

MATERIAL

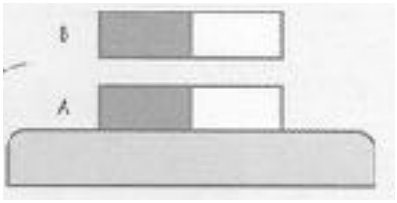
- Kitchen balance
- Two magnets
- Ruler.

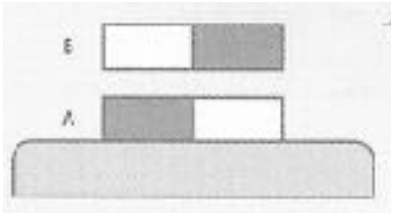
OPERATION OF THE EXPERIMENT

- Put one magnet on the kitchen balance to weigh.
- Approach with another magnet and look how the weight changes.
- Repeat this while holding the magnet in the other direction.

THE RESULTS:

- doing the experiment
  - Read the mass of the magnet and calculate the weight.
  - Come near with the other magnet until you see an other “mass” on the balance. From then on, come closer cm by cm.
  - Note the “mass” by cm and calculate the weight. Make sure you measure to the millimeter!
  - Change the magnetic poles and repeat.





- Complete the tables

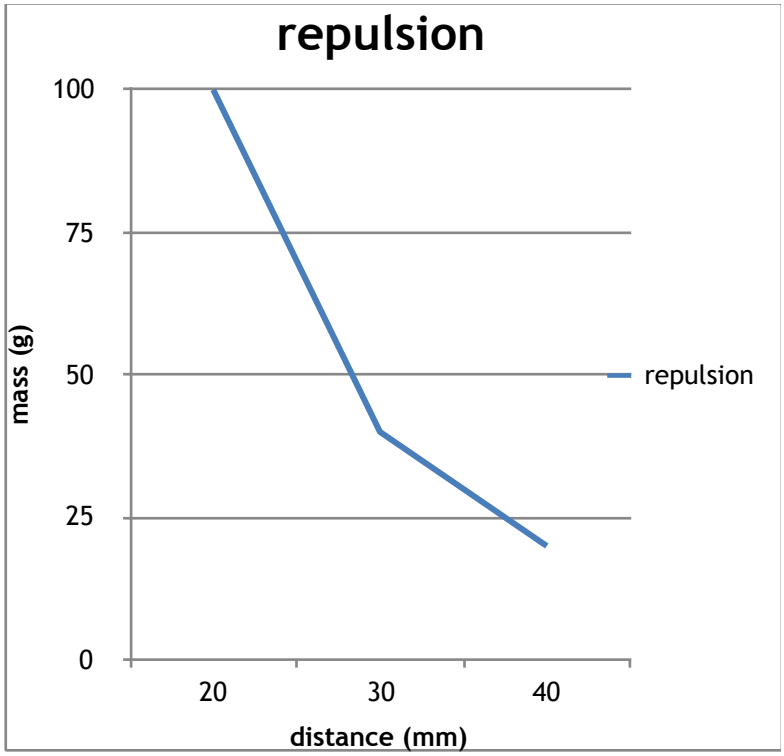
SITUATION 1: there is *attraction* / *repulsion* by the magnets

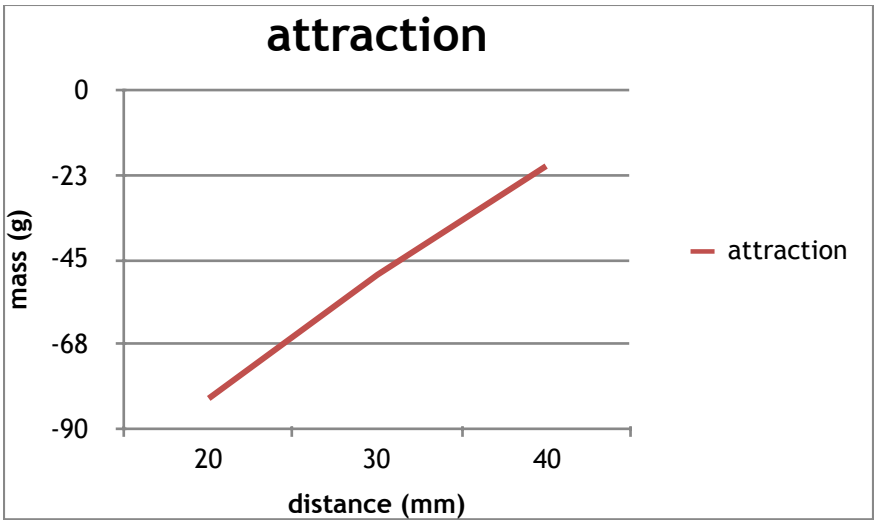
Distance between magnets (mm)	“mass” (g)	weight (N)
40	22	216
30	40	392.4
20	107	1050

SITUATION 2: there is *attraction* / *repulsion* by the magnets

Distance between magnets (mm)	“mass” (g)	weight (N)
40	-20	196.2
30	-49	-480.69
20	-82	-804.42

Make graphs (excel) of the weight (F_g) in function of the distance between the magnets. Make two different graphs, one for each situation. Copy the graph in this document.





CONCLUSIONS

- If the magnets attract each other, the weight of the magnet below will **decrease**……

- If the magnets repulse each other, the weight of the magnet below will **increase…**……

REFLECTION

- How do you explain the conclusions?

  The conclusionis that if it is attracted upwards the weight reduces on the scale

  Is the change in weight the same either by attraction or repulsion?

  No, it's the opposite.

- Compare your results with the results in the other school. Which school has the strongest magnets?

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