VRIJE ASO.SCHOOL

See you in space

NAME:**Jasper Berton**	NAME:**Thijs Bruynooghe**
NAME:**Kobe Declerck**	NAME:**Liam Kimpe**
SCHOOL / CLASS: **3 WET a & b**	MARKS: /…

EXPERIMENT: spacesuit (several little experiments)

RESEARCH QUESTION

- In space, astronauts needs to be protected against a lot of things. How can aluminium in a spacesuit protects them better?

HYPOTHESIS (indicate the correct answer)

- Aluminium *can* / ~~*cannot*~~ protect an astronaut against cosmic radiation (solar rays).
- Aluminium ~~*can*~~ / *cannot* protect an astronaut against micormeteorites.

MATERIAL

- Aluminium foil
- 2 mobile phones
- Balls in plastic, metal, …
- Container with sand.

OPERATION OF THE EXPERIMENT

- Call a mobile phone and then call a mobile phone wrapped in aluminium foil and hear the difference.
- Drop different balls on different surfaces. Then protect the surfaces with aluminium and look at the difference.

THE RESULTS:

- Experiment 1
  - Doing the experiment
    - Call phone B with phone A. Mobile phones work with electromagnetic radiation
    - Wrap phone B in aluminium foil. Call phone B with phone A

  - Result

    What do you hear?

    The first time it works. But the second time it doesn't rings.

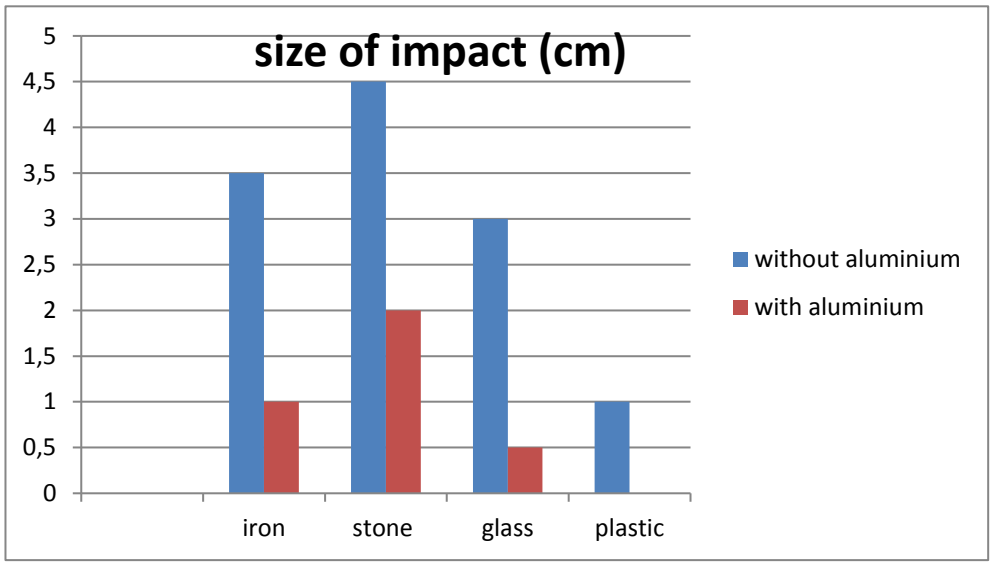
    Experiment 2

  - Doing the experiment
    - Drop different balls (same size if possible) into the container and note the size and depth of the impact. Be sure that you always drop from the same height.
    - Do the same experiment but put some aluminium foil on the sand.

  - Complete the table

Ball (which material?)	Without aluminium		With aluminium	
	Size of impact	Depth of impact	Size of impact	Depth of impact
Iron	**3.5 cm**	**Deep**	**1 cm**	**Not so deep**
Stone	**4.5 cm**	**Verry deep**	**2 cm**	**Middle deep**
Glass	**3 cm**	**Middle deep**	**0.5 cm**	**Almost nothing**
Plastic	**1 cm**	**Not so deep**	**NO impact**	**NO impact**

- Make column charts (excel). Make different column charts for the size and the dept of the impact. Copy the graphs in this document.



CONCLUSIONS

- Aluminium foil *can* */~~cannot~~* stop electromagnetic radiation
- Which material (ball) has the biggest impact when it is dropped? **Stone**
- Aluminium foil *can* / ~~*cannot*~~ reduce the impact.

REFLECTION

- Look at the following website: https://en.wikipedia.org/wiki/Thermal_Micrometeoroid_Garment. What is the function of a Thermal Micormeteroid Garment? Is there aluminium in this garment (put a picture in this document).

  The TMG has three functions: to insulate the suit occupant and prevent heat loss, to shield the occupant from harmful solar radiation, and to protect the astronaut from micrometeoroids and other orbital debris, which could puncture the suit and depressurize it.

- Compare your results with the results in the other school. Did you find the same conclusions?

  ……

  ……