

 VRIJE ASO.SCHOOL	 eTwinning	
<h2>See you in space</h2>		
NAME: Lisa Boari	NAME:	
NAME:	NAME:	
SCHOOL / CLASS: 4°D	MARKS:        /...	
<h3>EXPERIMENT: BIOLOGY – muscles</h3>		

#### RESEARCH QUESTION

When astronauts arrive back on earth they have trouble standing up and walking. Why?

#### HYPOTHESIS (Indicate the correct answer.)

During their stay in space astronauts have to use their muscles **less**/more cause there's is **less**/more gravity. This causes atrophy of the muscles. When they arrive back on earth the amount of muscle is so small they can't stand up or walk very well.

#### OPERATION OF THE EXPERIMENT

- a) Measure your weight standing up straight on a scale.
- b) Put the scale vertical against the wall. Lie down on your back with your feet against the scale. Push your legs against the scale. What's your weight now?
- c) Describe the difference (you feel) in your legs standing up or lying down.

## **THE RESULTS / OBSERVATIONS**

- a) The mass standing up straight on a scale is 81,6kg
- b) Now my weight is massively less. Only 7kg.
- c) when I'm standing up my legs support my mass and I can feel the weight of my body, on the contrary when I'm laying down I'm not able to feel the weight.

## **CONCLUSION**

Watch the following clips:

[http://www.slate.com/blogs/bad\\_astronomy/2014/06/08/back\\_to\\_earth\\_how\\_as\\_tonauts\\_get\\_back\\_from\\_the\\_space\\_station.html](http://www.slate.com/blogs/bad_astronomy/2014/06/08/back_to_earth_how_as_tonauts_get_back_from_the_space_station.html)  
<https://www.youtube.com/watch?v=rYnV5P4OuTE>

Combine this information with the results of the experiment.

When astronauts arrive back on earth they have troubles standing up and walking. Why?

When astronauts are in space their weight is remarkably lower than on Earth because there's no gravity that affecting on the weight.

## **REFLECTION**

Did you expect this answer?

Yes, I expected this answer, but I was surprised the weight was so much less.

Compare your results with the results in the other school. Did you make the same conclusion?

Yes, in both cases the results and conclusion were the same.