Research project

Team member Names:
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1) What is your research question?

Does microgravity affects the length of the pupa period?

2) Why did you select this question?

We know that the gravity helps the new butterfly to unfurl its wings and to pump fluid into them. We considered that it would be more difficult for him to emerge in microgravity conditions. Also, the butterfly is sensitive during the metamorphosis stage, so we selected this question because we thought that it could be quite impossible for him to emerge in microgravity conditions.

1) What variable or variables will you investigate?

We wanted to investigate the gravity variable, so we tried to create the same conditions of food, temperature, light, and so on, like on the ISS. In this way we were sure that, except for the gravity, nothing could influence the development of the butterflies.

2) What data or observations will you collect?

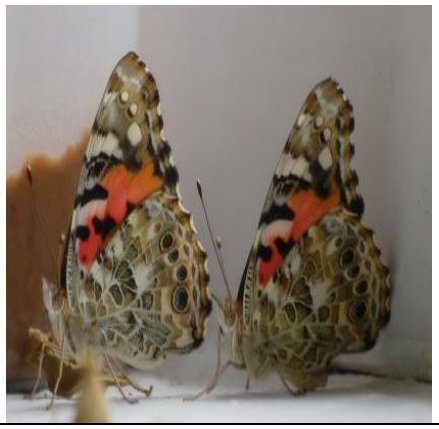
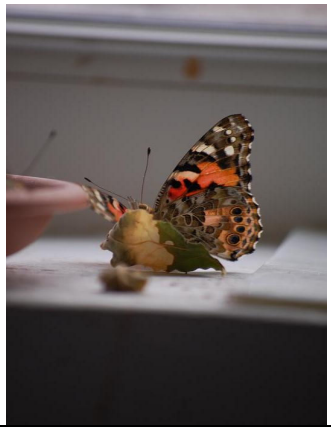
We took photos during the experiment so we could compare them with the ones took on ISS. Also, we measure the length of the larvae and took care of the temperature.

3) How often will you collect data or observations?

We collected data daily, at the same time, or at two days.

4) ***How will you record your data or observations?***
We watched their evolution daily and we took photos of them each time we noticed a change. We measured them since they were in the first stage and we wrote down all the important dates.

5) ***What do you predict might happen (hypothesis)?***
At first, in our hypothesis we thought that our butterflies will emerge sooner and easier (they would have been helped by the gravity) but in the table we can see that all of them emerged in 7-8 days (so the time was the same) and using the photos on the site and the ones we took we can see that they were developed in the same manner. Anyway, we watched the video with the flight attempt of the butterfly from the ISS and we watched one of our butterflies flying and we could see the difference. First of all on Earth the flight looks more natural you can see that it isn't an effort for them while in the space it seems difficult and without harmony. The moves of the wings were slower and gentler than the one in space.

Event	Microgravity exposed butterfly	Our Butterflies
Hatch	10.11.2009	5.03.2010
Leave earth	16.11.2009	-
Get on the ISS	18.11.2009	-
Create their pupas	24.11.2009 	18.03.2010  
Emerge	31.11.2009/01.12.2009 	26.03.2010  
Come back to Earth	11.12.2009	-