

Adapted from: http://www.nasa.gov/ retrieved on 20th July 2013

Currently, astronauts from around the world are sent into space. Some astronauts remain in space for months on special spaceships called space stations. There have been some other stations, but currently the International Space Station, ISS, is in service. It circles our orbit about 16 times per day at an altitude of 400 km.

The ISS is an international collaboration involving the joint effort of 16 countries. This structure is the largest and most complex space vehicle ever built and due to its conditions of microgravity, it is a special environment to investigate the effects of a prolonged stay in space. The possibility of controlling the variable gravity creates unimaginable opportunities for research, making the ISS a vital framework for developing and testing new technologies, and for making decisions about long-range space exploration.

There are astronauts’ teams – including many scientists – who alternately in periods of about five months, live, work, eat and sleep on the ISS. Their tasks are, for example, doing the maintenance of the station and conducting investigations. Given the environment of microgravity, astronauts incorporating ISS expeditions have to readjust all their daily routines such as eating, sleeping or going to the bathroom, to a new reality; this certainly poses many challenges.

***Up there... how is it?***

1. Pick one of your daily routines and imagine accomplishing it on board of the ISS. Discuss in groups the following thoughts: What would be different? Why? How could you perform this routine?
2. Share and debate your thoughts with the rest of the class.

***Let's explore...***

...the ISS along with the commander of Expedition 33, Suni Williams.

Watch this video: <http://www.nasa.gov/mission_pages/station/main/suni_iss_tour.html>

1. What have you observed in the ISS that matches with your initial idea? Explain.
2. What surprised you most during the visit to the ISS?
3. Share and debate your thoughts with the rest of the class
4. Write a question that you would like to ask Commander Suni Williams about his experience on board of the ISS.

***Going further...***

...conducting an experiment in microgravity.

As described in the text, one of the tasks of the astronauts on board the ISS is conducting investigations in microgravity.

1. Formulate a question you would like to investigate in a microgravity environment
2. Clearly formulate hypotheses related to your question.
3. Present arguments that support your hypothesis, based on correct and relevant scientific knowledge.
4. Plan an investigation that allows you to analyse your hypotheses.
5. Describe in detail all the steps, including the variables you want to study, variables you have to control and all the equipment and materials necessary to its realisation.
6. Discuss with your teacher your investigation plan and if necessary reformulate it.
7. Present your planning to the class.
8. With the help of your English teacher translate your investigation plan so it may be submitted to the ISS/NASA.

***Did you know...***

...that during his stay on board the ISS, Commander Chris Hadfield made the first music recording in space? Let's hear it...

<http://www.youtube.com/watch?v=KaOC9danxNo>

Reflect on...

* What have you learned while developing this activity?
* What would you change if you could perform this activity again?
* Difficulties you experienced.
* What you found to be the most interesting.

Referring to your group work:

* Did you listen to each other's ideas? Were all group members involved in performing the tasks?
* What worked? And what did not work? What do you have to change?