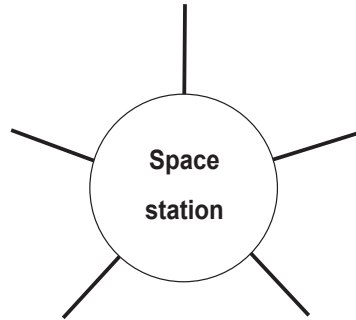


Life aboard the International Space Station

Level 2 • Intermediate

1 Warmer

- Write five things (key words only) onto the word wheel that you think of when you read the words 'space station'.



- Share your ideas in class.

2 Key words

Fill the gaps in the sentences using these key words from the text. The paragraph numbers are given to help you.

laboratory	hatch	panoramic	anchor	high	construction
waste	contrails	queasy	orbit	dock	lap

- the process of building something _____ (para 2)
- if a spacecraft does this, it joins to another spacecraft while they are still in space _____ (para 4)
- a door cut into the floor or ceiling of a ship, aircraft or building that people or things can move through _____ (para 4)
- a place where people do scientific and medical experiments or research _____ (para 5)
- to fix something firmly somewhere _____ (para 6)
- feeling that you are going to vomit _____ (para 7)
- to gradually become thinner and weaker over a period of time _____ (para 8)
- one complete turn around something like a race course (here around Earth) _____ (para 9)
- this kind of view allows you to see a large area of land or sea around you _____ (para 10)
- artificial clouds created by an aircraft _____ (para 10)
- a feeling of great happiness or excitement _____ (para 12)
- to move around a large object in space such as a planet _____ (para 13)

Life aboard the International Space Station

Level 2 • Intermediate

Life aboard the International Space Station

It's ten years since the first crew entered the International Space Station (ISS) 220 miles above Earth. But what is it like aboard the ISS?

Ian Sample
24 October, 2010

- 1 At 6.41pm this Thursday, a small bright light will appear low in the night sky before vanishing in the darkness. What looks like a star in the heavens is sunlight reflecting off the International Space Station.
- 2 With more than a decade of construction now coming to an end, astronauts can finally look forward to using the space station to the full. And they are in for an extraordinary time. "I still can't believe what I've seen sometimes," says Piers Sellers, a NASA astronaut, who took part in the most recent shuttle mission to the station in May. "Often it all comes back to me in dreams."
- 3 Next week, NASA will celebrate ten years of life on the space station (the first residents arrived on 2 November 2000), but fewer than 200 people have first-hand knowledge of life on board. It takes two days to get to the space station. The station flies at an altitude of 220 miles or so (that's more than 30 times the cruising height of a jumbo jet), but is travelling at a speed of 17,500mph. Before astronauts can climb aboard, they first have to chase it and pull alongside.
- 4 The shuttle approaches the space station from below. The docking procedure is slow and careful. This is not surprising considering the cost of the spacecraft involved: \$1.7bn (£1.1bn) for a shuttle and around \$100bn (£64bn) for the space station. Once they are locked together it takes half an hour or so to equalize the pressure and finally open hatches that separate the two crews. "You see these faces on the other side and they're always excited to see you. Sometimes it's been three months since they've seen anyone else," says Sellers.
- 5 In all, the living space on the station is roughly the size of one-and-a-half Boeing 747s. Storage facilities, laboratories and siderooms give astronauts room to go about their business, do experiments and operate the space station's two robotic arms. The space station has a permanent crew of six who have to learn to move around without crashing into anything.
- 6 In time, the crew members are able to fly down the length of the station, straight as an arrow, without touching anything, except with their fingertips. People sit in mid air, tapping away at a computer, with only a toe hooked under a wall strap to anchor themselves.
- 7 Living in a weightless environment does curious things to the body. On their first day or two in space, some astronauts feel queasy. Many astronauts lose much of their sense of smell and taste. "Nothing tastes like it does on Earth. It all tastes like cardboard," says Sellers. "We get through gallons of Tabasco sauce."
- 8 The astronauts' bones and muscles begin to waste too. For every month in space, they lose around 2% of their bone mass. On long stays aboard the space station, crews spend at least two hours a day exercising.
- 9 It takes the space station one and a half hours to fly around the planet, or 16 complete laps a day. After 45 minutes of daylight, a dark line appears on the planet, dividing Earth into night and day. For a couple of seconds, there is a line of coppery light and then complete darkness. Another 45 minutes later the sun rises to fill the station with brilliant light again.
- 10 It is the sight of our planet that takes the breath away. On board, the best views are from the cupola whose six windows look down on a panoramic view of Earth. But for the really exceptional views, you need to step outside. Space walkers see whole continents, mountain ranges, cities, aircraft contrails and ships crossing the oceans.
- 11 Most shuttle missions take astronauts to the space station for two weeks or so, during which every working day is intense. As soon as the wake-up music begins, printers start printing out instructions for the day ahead. Almost every

Life aboard the International Space Station

Level 2 • Intermediate

hour is scheduled, with crew members' tasks and the tools they will need planned by logistics experts on the ground making sure no one gets in anyone's way.

- 12 Short visits to the space station are easier than longer ones. Frank de Winne, a Belgian astronaut and former test pilot, spent nine days on the space station in 2002 and returned for a six-month trip last year, when he became the first European commander of the space station. "If you are there for a week or two, you are basically on a high the whole time. It's not the same when you're there for six months. Things that are difficult in the short term, such as not having a shower or any fresh fruit, become part of normal life. The things you really miss are close contact with your wife, your kids and your

family and friends," he says. The crews use email and the station's phone to get in touch with family and friends when there is time.

- 13 The space station, will be orbiting Earth for at least another five years; probably much longer – possibly until 2028. For those who built the space station, seeing its bright light shooting across the sky at night brings on emotions few others will understand. "You can go out on a quiet night and see it flying over and you think, my goodness, I was there, I helped put that together," says Sellers. "Everybody here feels they own a little piece of it. It's a lasting achievement."

© Guardian News & Media 2010

First published in *The Guardian*, 24/10/10

3 Comprehension check

Are these statements true (T) or false (F)?

1. It has taken ten years to build the International Space Station (ISS).
2. The building costs for the ISS are already around sixty-four billion US dollars.
3. When the shuttle docks on the ISS, the astronauts can immediately walk through the hatch into the space station.
4. Many astronauts lose their sense of smell and taste on board the ISS.
5. The ISS flies around Earth 45 times a week.
6. The best views of Earth can be seen from the cupola.
7. Most astronauts stay on the ISS for two weeks.
8. The ISS will continue orbiting Earth for another 50 years.
9. It is possible to see the ISS in the night sky.
10. Sellers feels angry when he looks up and sees the ISS.

Life aboard the International Space Station

Level 2 • Intermediate

4 Collocations

Make word pairs from the article by matching a word from the left with one from the right. The first one is done for you.

- | | | |
|-----------------|---|----------------|
| 1. bright | → | a. facilities |
| 2. first-hand | → | b. light |
| 3. cruising | | c. arms |
| 4. docking | | d. knowledge |
| 5. storage | | e. height |
| 6. robotic | | f. procedure |
| 7. weightless | | g. views |
| 8. Tabasco | | h. achievement |
| 9. coppery | | i. walkers |
| 10. exceptional | | j. sauce |
| 11. space | | k. environment |
| 12. lasting | | l. light |

5 Summarizing and retelling

Summarize, recreate and retell the article using all the collocations (word pairs) from Exercise 4.

6 Discussion

In which ways do you think working on the space station would be different (and similar) to working away from home on Earth, e.g., working for two weeks in a foreign country?

7 Webquest

Go to NASA's official ISS website to find out more information about the ISS
http://www.nasa.gov/mission_pages/station/main/index.html

Here you can read about current missions, crew members and expeditions, watch videos, see images, and find out where to see the ISS in the night sky.

Life aboard the International Space Station

Level 2 • Intermediate

KEY

2 Key words

1. construction
2. dock
3. hatch
4. laboratory
5. anchor
6. queasy
7. waste
8. lap
9. panoramic
10. contrails
11. high
12. orbit

4 Collocations

1. b
2. d
3. e
4. f
5. a
6. c
7. k
8. j
9. l
10. g
11. i
12. h

3 Comprehension check

1. T
2. F
3. F
4. T
5. F
6. F
7. T
8. F
9. T
10. F

Teacher's note: All the questions and answers in each task are in the order that they appear in the article.