

Lesson 1 – Life as an Astronaut

An astronaut is a person who goes up into space on a shuttle. Some astronauts work on the International Space Station.

Write a few sentences about what you imagine an astronaut's life is like – how is life in space different from life on earth? What do you think astronauts do with their time?



Activity 1 – Pre-Learn Vocabulary

claustrophobia (n.) = fear of small, limited spaces. “Claustrophobia” describes the condition, and “claustrophobic” (adj.) describes a person who feels scared and uncomfortable in small spaces

*Ex) My sister doesn't like to ride elevators because she's **claustrophobic**.*

bulky (adj.) = large and inconvenient, something that takes up too much space

*Ex) In the past, cell phones were so **bulky** that they couldn't fit in your pocket easily.*

disembark (v.) = get off of a ship, plane, or train

*Ex) After three days at sea, the passengers **disembarked** from the cruise ship.*

dehydrated (adj.) = without water (for example, food after being dried out and the water removed)

*Ex) **Dehydrated** foods can last for many months without needing to be refrigerated.*

sip (v.) = to drink something slowly, in small portions.

*Ex) He **sipped** a glass of wine as he relaxed after work.*

germs (n.) = bacteria, tiny organisms that make you sick

*Ex) You should cover your mouth when you sneeze, to avoid spreading **germs**.*

conundrums (n.) = complex problems or difficulties

*Ex) The issue of illegal immigration is a real **conundrum**; politicians have tried to solve it for years without success.*

filter (v.) = make something (like air or water) pure and clean by removing dirt and contaminants

*Ex) The water here is of poor quality; you must **filter** it before drinking.*

onboard (adj.) = on a ship, plane, or train

*Ex) All airplanes must have an **onboard** first aid kit.*

susceptible (adj.) = vulnerable, unprotected (especially against disease – if you are “susceptible” to a disease, you are likely to become sick)

*Ex) If not properly cleaned and covered, cuts are **susceptible** to infection.*

treadmill (n.) = a type of exercise machine where you walk/run on a moving belt

*Ex) It was raining, so I stayed inside and ran ten miles on the **treadmill**.*

Activity 2 – Listen for General Ideas

Speaker: Amanda – British

This audio discusses various aspects of life as an astronaut.

Put the topics in the correct order from 1 to 7:

- Fitness
- Hygiene
- Work
- Amount of space
- Free time
- Waste
- Food



Activity 3 – Listen for Specific Details

1. **How many astronauts are in a typical space shuttle crew?**
 - a. Five
 - b. Seven
 - c. Ten

2. **The improvement in space food comes from...**
 - a. The military invention of Meals Ready to Eat
 - b. Increasing the nutritional value of astronauts' food
 - c. Giving the astronauts training from famous chefs

3. **Which of these things is NOT used when astronauts shower?**
 - a. A plastic sleeve
 - b. A vacuum
 - c. Disinfectant

4. **What is done with liquid waste on the space station?**
 - a. It is cleaned and purified
 - b. It is kept until landing
 - c. It is released into space

5. **Astronauts exercise a lot because...**
 - a. Their work requires a lot of strength
 - b. If they don't, they could lose bone density
 - c. They have lots of free time

6. **One of the recent projects on the space station is...**
 - a. Observing and documenting changes on Earth over time
 - b. Developing vehicles for transporting humans through space
 - c. Testing the effect of solar radiation on newly-developed materials

7. **Do astronauts have internet?**
 - a. Yes, all the time
 - b. Yes, 3 times a day
 - c. No, only radio

Activity 4 – Listen and Fill in the Blanks

Try to complete the words in the text. It's OK if you need to listen several times!

As an astronaut in a NASA space shuttle, it would be particularly [Click here to enter text.](#) if you suffered from claustrophobia. A typical shuttle is occupied by a crew of seven, and inside the space shuttle the space is equivalent to a smallish tent on a camping expedition, only filled with seven astronauts wearing bulky suits! [Click here to enter text.](#), a claustrophobic astronaut would relish the opportunity to disembark onto the slightly less cramped International Space Station.

Food-wise, an astronaut's lot has improved considerably from times gone by, although dehydrated food is still used on space flights. The military [Click here to enter text.](#) of MREs (Meals Ready To Eat), which are not dehydrated, from the late 1960s to the 1980s led to many [Click here to enter text.](#) in the diet of the astronaut, and today's space food still owes much to this innovation.

The International Space Station (ISS) has even boasted chefs from top Parisian restaurants [Click here to enter text.](#) food for the astronauts. Each space suit is fitted with an In-suit Drink Bag providing 32 fluid ounces of water, which can be sipped from a [Click here to enter text.](#), built into the suit for long periods of suit-wear.

It is incredibly important to [Click here to enter text.](#) good personal hygiene in the space station or on a space flight as germs can [Click here to enter text.](#) faster in space. Low gravity poses obvious conundrums where water-based [Click here to enter text.](#) are concerned! To maintain cleanliness, shuttle astronauts treasure their personal hygiene kit – a set that includes toothpaste, a toothbrush, dental floss, a razor and a [Click here to enter text.](#)

Showers are taken inside a large specially-designed cylinder with a plastic sleeve to prohibit the [Click here to enter text.](#) of water into the air. The astronauts must essentially vacuum the water off their [Click here to enter text.](#) before exiting the cylinder – and for those who savor a nice hair wash; the practice is reduced to application of a rinseless [Click here to enter text.](#)!

The practice of waste disposal from space toilets must also consider the low-gravity [Click here to enter text.](#) Onboard lavatories flush with air instead of water. The air in the toilet is filtered to remove bacteria and odors and is then [Click here to enter text.](#) to the living quarters. The solid waste matter must be kept onboard until landing, while liquid wastes are sent out into space.

In case an astronaut must go out 'space-walking' in their suit for long [Click here to enter text.](#), their suit is fitted with an adult absorbent diaper known as a Maximum Absorption Garment to trap collect both urine and feces. The garment can be [Click here to enter text.](#) and disposed of once the spacewalk is over.

A [Click here to enter text.](#) regime is of paramount importance to astronauts in space. On top of the usual reasons for keeping in shape, being in space makes them susceptible to a condition [Click here to enter text.](#) to osteoporosis. Researchers found that after months in a weightless environment, astronauts suffer a significant [Click here to enter text.](#) of bone mineral density – so a large amount of an astronaut's routine (at least 2 ½ hours a day) is dedicated to keeping fit. On the International Space Station, there is a specially [Click here to enter text.](#) treadmill and exercise bike to help astronauts fight against bone degeneration and maintain normal health.

Obviously, the main reason for astronauts being up there on the ISS is for the advancement of science and to carry out a variety of [Click here to enter text.](#). Some examples of projects that have been undertaken by Expedition 10 (which arrived at the station in October of 2004) are:

- Observing and photographing natural and [Click here to enter text.](#) changes on Earth over time as well as short timescale events like storms so we can better understand our planet
- Studying how humans [Click here to enter text.](#) in isolation and confinement
- Leaving potential future spacecraft [Click here to enter text.](#) outside to see how well it withstands being in space
- Studying fluids that react to magnetic fields, in order to [Click here to enter text.](#) in the construction of better brake systems, seat suspensions, and airplane landing gear

Of course, as in most jobs, astronauts are [Click here to enter text.](#) some free time! Like most of us these days this revolves around the internet, which they use to call their families and check their e-mail. Unlike us, and probably a great source of [Click here to enter text.](#), their email and internet connection is only updated 3 times a day.

Activity 5 – Listen with Complete Transcript

As an astronaut in a NASA space shuttle, it would be particularly **unfortunate** if you suffered from claustrophobia. A typical shuttle is occupied by a crew of seven, and inside the space shuttle the space is equivalent to a smallish tent on a camping expedition, only filled with seven astronauts wearing bulky suits! **Obviously**, a claustrophobic astronaut would relish the opportunity to disembark onto the slightly less cramped International Space Station.

Food-wise, an astronaut's lot has improved considerably from times gone by, although dehydrated food is still used on space flights. The military **innovation** of MREs (Meals Ready To Eat), which are not dehydrated, from the late 1960s to the 1980s led to many **improvements** in the diet of the astronaut, and today's space food still owes much to this innovation.

The International Space Station has even boasted chefs from top Parisian restaurants **providing** food for the astronauts. Each space suit is fitted with an In-suit Drink Bag providing 32 fluid ounces of water, which can be sipped from a **straw**, built into the suit for long periods of suit-wear.

It is incredibly important to **maintain** good personal hygiene in the space station or on a space flight as germs can **multiply** faster in space. Low gravity poses obvious conundrums where water-based **activities** are concerned! To maintain cleanliness, shuttle astronauts treasure their personal hygiene kit – a set that includes toothpaste, a toothbrush, dental floss, a razor and a **comb**.

Showers are taken inside a large specially-designed cylinder with a plastic sleeve to prohibit the **escape** of water into the air. The astronauts must essentially vacuum the water off their **skin** before exiting the cylinder – and for those who savor a nice hair wash; the practice is reduced to application of a rinseless **shampoo**!

The practice of waste disposal from space toilets must also consider the low-gravity **environment**. Onboard lavatories flush with air instead of water. The air in the toilet is filtered to remove bacteria and odors and is then **returned** to the living quarters. The solid waste matter must be kept onboard until landing, while liquid wastes are sent out into space.

In case an astronaut must go out 'space-walking' in their suit for long **periods**, their suit is fitted with an adult absorbent diaper known as a Maximum Absorption Garment to trap and collect both urine and feces. The garment can be **disconnected** and disposed of once the spacewalk is over.

A **fitness** regime is of paramount importance to astronauts in space. On top of the usual reasons for keeping in shape, being in space makes them susceptible to a condition **similar** to osteoporosis. Researchers found that after months in a weightless environment, astronauts suffer a significant **loss** of bone mineral density – so a large amount of an astronaut’s routine (at least 2 ½ hours a day) is dedicated to keeping fit. On the International Space Station, there is a specially **designed** treadmill and exercise bike to help astronauts fight against bone degeneration and maintain normal health.

Obviously, the main reason for astronauts being up there on the ISS is for the advancement of science and to carry out a variety of **experiments**. Some examples of projects that have been undertaken by Expedition 10 (which arrived at the station in October of 2004) are:

- Observing and photographing natural and **manmade** changes on Earth over time as well as short timescale events like storms so we can better understand our planet
- Studying how humans **behave** in isolation and confinement
- Leaving potential future spacecraft **equipment** outside to see how well it withstands being in space
- Studying fluids that react to magnetic fields, in order to **aid** in the construction of better brake systems, seat suspensions, and airplane landing gear

Of course, as in most jobs, astronauts are **allowed** some free time! Like most of us these days this revolves around the internet, which they use to call their families and check their e-mail. Unlike us, and probably a great source of **frustration**, their email and internet connection is only updated 3 times a day.

EXTRA VOCABULARY FROM THE TEXT:

"A claustrophobic astronaut would **relish** the opportunity to disembark onto the slightly less cramped International Space Station."

relish (v.) = greatly and especially enjoy

"The International Space Station has even **boasted** chefs from top Parisian restaurants"

boasted (v.) = featured something great

"shuttle astronauts **treasure** their personal hygiene kit"

treasure (v.) = consider something to be very valuable

"for those who **savor** a nice hair wash"

savor (v.) = fully appreciate and enjoy

"A fitness **regime** is of **paramount** importance"

regime (n.) = an organized system

paramount (adj.) = very high priority, essential

"Some examples of projects that have been **undertaken** by Expedition 10"

undertake (v.) = perform, do ("undertake" is a more formal word)

"Leaving potential future spacecraft equipment outside to see how well it **withstands** being in space"

withstand (v.) = to resist or endure

ANSWERS

Activity 2:

1. Amount of space
2. Food
3. Hygiene
4. Waste
5. Fitness
6. Work
7. Free time

Activity 3:

1. b
2. a
3. c
4. c
5. b
6. a
7. b

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