

Where and when:**Date:** Monday, 10 March 2025**Time:** 11:00**Duration:** 30 minutes**Location:** bbc.co.uk/livelessons

This programme is available to view from home or school, and no sign-up is required. Simply visit the website on the day and follow the instructions on the page to watch.

**Curriculum links:**

National Curriculum, England - Key Stage 2 - Science

National Curriculum, Northern Ireland - Key Stage 2 - The World Around Us

Curriculum for Excellence, Scotland - 1st and 2nd Level - Sciences

Curriculum for Wales - Progression steps 2 and 3 - Science & Technology

Pupils should:

- Learn that humans have skeletons which help them move.
- Understand the benefits of a healthy lifestyle, including physical activity, healthy eating, rest and hygiene.
- Recognise the impact of diet, exercise and lifestyle on the way our bodies function.

Setup:

This Live Lesson can be watched on Monday 10 March 2025 at 11:00 on the CBBC channel and from 09:00 on the BBC Teach website. It will remain online afterwards to be used as a teaching resource whenever you need it.

We will be running a live commentary page on BBC Teach during the live broadcast to share contributions from children watching from home and school. Pupils will still be able to follow the activities if they don't have printed activity sheets to hand.

Lesson content:

This programme supports work around science, health and wellbeing and is designed to engage primary learners aged 7-11. It is linked to the curricula of England, Wales, Scotland, and Northern Ireland.

Section 1 – Bones and muscles in microgravity

- This section looks at the microgravity conditions aboard the International Space Station and how this affects the bodies of the astronauts who live there.
- We explore the link between weight-bearing exercise and bone density on Earth and how a lack of gravity aboard the ISS causes bone loss in astronauts over time. To counteract this, astronauts exercise several hours a day using specialised equipment which simulates weight-bearing conditions in microgravity.
- For activity 1 pupils are shown 2 exercises done aboard the ISS and asked to identify/circle some of the bones and muscles being strengthened.

Download activity sheet 1 [here](#)

Section 2 – Nutrition

- Section 2 explores how astronauts plan a nutritionally balanced diet aboard the ISS. Although space food is often heat-treated or dehydrated to extend its shelf life, the menu on the ISS is surprisingly varied and familiar.
- We explore how our bodies need different nutrients from each of the 5 food groups (fruit and vegetables, carbohydrates, proteins, dairy and alternatives, and fats and oils) to function properly.
- For activity 2 pupils are asked to design a meal they would like to eat aboard the ISS, which includes a balance of ingredients from each of the food groups.

Download activity sheet 2 [here](#)

Section 3 – Hydration

- The final section looks at the important role of water in the human body and answers the question which astronauts are asked more than any other: “How do you go to the toilet in space?”
- We explore what is meant by hydration and dehydration, how much you should aim to drink each day, and how you can monitor whether you are dehydrated by looking at the colour of your urine.
- For activity 3 pupils are asked to match up urine colour with statements about whether an astronaut is hydrated or dehydrated.

Download activity sheet 3 [here](#)

Useful links:

- Download and print a urine colour chart for pupils to monitor their own hydration level [here](#).
- Download and print the Live Lessons Astronaut Training School mission patch to award pupils on completion of the lesson [here](#).
- BBC Bitesize - [How do you stay alive in space?](#)
- BBC Bitesize - [What is a balanced diet?](#)
- [Train like an astronaut](#) with ESA Mission X from ESERO-UK

Follow-up activities:

- **Bones and muscles:** Make a moving model of the bones in the arm. Connect elastic band muscles. Watch as the muscles work in pairs. When one muscle shortens the opposite muscle lengthens.
- **Exercise:** Investigate which bones and muscles you are moving when you do different forms of exercise. Record your observations on a human body map. You can download and print a copy [here](#).
- **Hydration:** Make a poster to remind children in your school to drink enough water. Explain the health benefits of drinking enough each day.