

K-W-L CHART

Topic:

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What do I already know about this topic?

What do I want to know about this topic?

What new things did I learn about this topic from the article?

PREVIEW

LIFE IN SPACE

Living in Space

Astronauts living at the International Space Station have to do all of the regular daily things they would do on Earth. They eat several times a day, use the washroom, sleep, and exercise to stay healthy.

Of course, they are also living in microgravity (seems weightless; almost no gravity) so these tasks aren't as simple as they would be on Earth.

The International Space Station

The International Space Station, or ISS, is a spacecraft that orbits the Earth. It is a collaboration between several international space agencies, and astronauts from all over the world visit it in periods of time.

There is enough room on the station for six people, plus visitors, and those on board conduct scientific research in space. Astronauts usually live on the ISS for about six months at a time.

Eating in Space

It's not as easy to go and grab some food for a meal when you live in space on the ISS. Due to microgravity, food has to be specially designed for space so crumbs and liquids are not floating away.



Photo of Earth From Space

Food on the ISS has to meet certain requirements. It has to be lightweight, nutritious, dry, wet or soft (to stop those pathogenic germs), compact, and easy to process. Food is also prepared to make sure it will be good for the whole journey.

What's on the Menu?

Some foods can be eaten the same way in space as they are on Earth, such as fruits, vegetables, nuts, dried fruits and meat. Other foods have to be rehydrated before they can be consumed, such as beverages and spinach. When astronauts drink in space, they have to use a special straw and drink right from the packaging.

Meal supplies are planned out so there is enough for three meals a day and one snack. Depending on the astronaut, they get anywhere from 1,900 to 3,200 calories per day.

SAMPLE ANSWERS

1. What is the International Space Station?

The International Space Station, or ISS, is a spacecraft that circles the Earth. It is a partnership between several international space agencies, and astronauts from all over the world live in it for periods of time.

2. Why does food on the ISS have to be specially designed?

Due to microgravity, food has to be specially designed for space so crumbs and liquids are not floating away. It has to be lightweight, nutritious, tasty, wet or sticky (to stop those floating crumbs), compact and easy to eat to make sure it will not spoil.

3. How are meal supplies planned for the astronauts?

Meal supplies are planned out so there is enough for three meals a day and one snack. Depending on the astronaut, the diet can range from 2,000 to 3,200 calories per day.

4. How is using the bathroom different in space than on Earth?

The toilet in space looks similar to toilets on Earth, but when using it astronauts must strap themselves to a seat and use a tool that sucks away the waste.

5. Explain how astronauts save water while in space. (2 marks)

With water so limited in space, many astronauts choose to use an edible toothbrush to reduce their water use. There is no laundry washing on the ISS. It would take too much water. Instead, astronauts wear their clothes until they are dirty and then throw them out.

6. Why do astronauts need to exercise for 2 hours every day?

Being in space causes the body of an astronaut to age prematurely. To keep themselves healthy, astronauts need to exercise about 2 hours every day.

THINKING QUESTION

Assessment	Below Expectations	Meets Expectations	Above Expectations
	✓-	✓	✓+

Would you like to try living in space? Explain your thinking.

PREVIEW