

Dining in Space

Students take lunch breaks at school every day, and grown-ups take them at their jobs. Almost everyone stops to eat at some point in his or her day, and that includes astronauts.

Eating a meal in space takes some extra planning and preparation. Weightlessness raises a special set of concerns — from storing the food safely to making sure that crumbs don't float off and jam the equipment.

Colonel John Glenn was the first American to orbit Earth. When he made his three-orbit trip around Earth on February 20, 1962, he brought along a little something to munch on. It wasn't much, but it made him the first person in history to have a space meal.

Glenn was part of NASA's Project Mercury, the United States' first manned space program. He and his co-astronauts feasted on bite-sized cubes, freeze-dried powders, and nutritious goo squeezed from aluminum tubes. None of it tasted very good, they all agreed, and eating in zero gravity took a lot more concentration than eating at the NASA cafeteria. Still, it was better than going hungry.

Project Gemini flew ten two-person space missions during 1965 and 1966. By then, the astronauts' food cubes were coated with gelatin to prevent crumbling. At the same time, improved packaging made it easier to put moisture into freeze-dried foods. Best of all, scientists had figured out ways to improve the menu. Gemini's astronauts could choose from such delicacies as shrimp cocktail, chicken and vegetables, and butterscotch pudding or applesauce.

Then came the Apollo program, which in July 1969 placed the first person on the moon. The quality and variety of space food was even better. Apollo astronauts were the first ones to have hot water, which made it easier to prepare their freeze-dried meals. Special pouches were introduced that kept food warm indefinitely. A new utensil called a "spoon bowl" had also been invented. It let astronauts eat with a spoon in a weightless environment.

Compared to crews on earlier spacecraft, the astronauts deployed on Skylab (the United States' first space station) in the 1970s lived in comparative four-star luxury. Their orbiting home had a small dining room with footholds to keep the crew members in place as they gathered around the dinner table. They also had a refrigerator, a freezer, and 72 food items to choose from! In later years, space shuttle astronauts chose their own meals in "food evaluation" sessions before takeoff. Professionals helped them construct diets that provided 100 percent of their nutritional needs.

As humankind reaches farther into space, we can expect space food to become even tastier, healthier, and easier to prepare. The idea of growing food on Mars is currently being researched at the Johnson Space Center in Houston, Texas. Not only would that ensure a steady supply of healthy food, it would enable the astronauts to take seeds with them instead of full-grown vegetables. Seeds are much smaller and lighter, and that's important when planning a space trip, where every ounce counts.

Questions

1. How has space food changed from 1962 to the present?

2. How did meals in space become more like meals on Earth?

3. How did the Apollo program improve the way astronauts ate in space?

4. Why is improving space food important? Support your answer with details from the passage.

Vocabulary List

Each of the vocabulary words below are used in the reading passage. As you read the passage, pay attention to context clues that suggest the word's meaning.

1. weightlessness
2. jam
3. manned
4. nutritious
5. delicacies
6. indefinitely
7. footholds
8. ensure

Context Clues

Using context clues from the sentences in the passage, underline the correct meaning of the word in boldface.

1. " **Weightlessness** raises a special set of concerns"
a. thinness b. without merit c. no weight, unaffected by gravity d. disinterested
2. "making sure that crumbs don't float off and **jam** the equipment."
a. melt b. fruit spread, jelly c. clog, block d. bury, submerge
3. "Project Mercury, the United States' first **manned** space program"
a. principle, main b. crewed by humans c. successful d. experimental
4. "He and his co-astronauts feasted on bite-sized cubes, freeze-dried powders, and **nutritious** goo squeezed from aluminum tubes."
a. tasty, sweet b. disgusting, awful c. scientifically made d. healthy, nourishing
5. "Gemini's astronauts could choose from such **delicacies** as shrimp cocktail"
a. treats, special dishes b. easily prepared meals c. fast foods d. menus
6. "Special pouches were introduced that kept food warm **indefinitely**."
a. in space b. unspecified time, endlessly c. momentarily d. in theory
7. "Their orbiting home had a small dining room with **footholds** to keep the crew members in place"
a. backwards seats b. rope tethers c. placemats d. places to secure feet, foot anchors
8. Not only would that **ensure** a steady supply of healthy food
a. make certain, guarantee b. prevent or disturb c. reduce d. increase