



A Lesson on Space Food by Wendy Brown

Grade Level: Grade 4

Subject Area: English Language Arts

Lesson Length: 2 hours

Lesson Keywords: reading, writing, A Lesson on Space Food

Lesson Description: This lesson is provided to assist students in further strengthening of their reading and writing skills as they learn more about the eating habits of astronauts while in space. The student will be encouraged to read and reread the passage, answer questions on vocabulary terms, complete a discussion activity and organize their thoughts in a writing prompt. Each of these activities allows the student to immerse themselves into the many factors that go into creating the food program for astronauts.

Common Core Standards Covered with This Lesson

CCSS.ELA-Literacy.RI.4.4: Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.

CCSS.ELA-Literacy.RF.4.3: Know and apply grade-level phonics and word analysis skills in decoding words.

CCSS.ELA-Literacy.W.4.1: Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

CCSS.ELA-Literacy.W.4.1b: Provide reasons that are supported by facts and details.

CCSS.ELA-Literacy.L.4.1: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-Literacy.L.4.3a: Choose words and phrases to convey ideas precisely.

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Lesson Content: Book/Story/Reading Passage

Instructions: Please read the following reading passage as many times as needed (aloud and silent) before starting to go through other lesson pages. Understanding the content of this passage is very important since the lesson activities will be all about this content. Feel free to print the passage if needed.

Space Food

by

Content: You really know how important a clean kitchen is if you live in the same small place for weeks. Everyone needs to have a clean kitchen so they are healthy. A dirty kitchen can make people sick. Astronauts are people who travel on space ships. They need to have a very clean home. They travel far from Earth. We need clean kitchens everywhere on earth and in space.

Astronauts have to solve two problems: how to get food and how to keep their spaceship clean. They need to solve them in order to stay alive. They are in a spaceship far from Earth, and they need to take care of everything themselves. They need to be sure they have what they need to live there, because the astronauts may be in space for weeks.

Here is how they solved the food problem. At first, the astronauts took tubes of food with them into space. They would squeeze a tube and eat semi-liquid food. It did not taste great, but since they did not need to take dishes or silverware with them, they had no dishes to wash.

Today's spaceships have a bigger menu. Astronauts can eat from bowls. In fact, they take cereal and other standard foods with them. The foods are packaged in special containers to keep them fresh. They use knives, forks, and spoons. One unusual item on their table is a pair of scissors. They use the scissors to open the food packages. They can eat right from the package.

They have a kitchen on the spaceship. Its oven can heat food to 170 degrees. The kitchen has water and sets of meals that come on trays. The astronauts choose their menu before they go into space. They take a lot of food with them.

The astronauts keep bread and fresh fruits and vegetables in a special food locker. Most flights take tortillas. They package the tortillas in an oxygen-free wrap so they stay safe.

How do they keep the kitchen clean? They do not have to worry about mice or other rodents. They make sure that there are no rodents before the ship leaves. But sometimes mice travel on the ship. Those mice are part of experiments. They live in cages.

How do astronauts keep their trays clean? That is another health problem the astronauts solve. They need to stay healthy in space. To carry a lot of water to wash trays would be a lot of extra weight. They pack wet wipes in plastic bags. They use them to clean trays. So, their kitchen is clean and they stay healthy.

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Task 1: Vocabulary

Instructions: Please complete the following vocabulary activity by choosing the correct meaning of each word selected from the passage and use of each word correctly in a sentence.

Q: 1 WordPhrase: semi-liquid food **WordPhraseTier:** 3

Question: The author of this story states that the astronauts "would squeeze a tube and eat semi-liquid food". What is the meaning of "semi-liquid"?

- A:** wet
- B:** dry and crunchy
- C:** somewhere between liquid and solid, like baby food
- D:** hard

Question: Which one of the statements below uses the phrase "semi-liquid" correctly?

- A:** Steve made a semi-liquid pile of legos and building blocks.
- B:** They combined the sandy mixture and the water into a semi-liquid state.
- C:** At the beach, the water felt cool and semi-liquid.
- D:** I took a bite of the semi-liquid popcorn and it was yummy.

Q: 2 WordPhrase: food locker **WordPhraseTier:** 2

Question: We learned that the astronauts "keep bread and fresh fruits and vegetables in a special food locker". What does "food locker" mean in this story?

- A:** freezer
- B:** hallway
- C:** backpack
- D:** special cabinet

Question: Which one of the sentences below use "food locker" with the same meaning as the story?

- A:** I threw all my books into my food locker.
- B:** Before we set sail, we always put our snacks into the food locker.
- C:** Suad put all her new school clothes into her food locker.
- D:** We watched a movie in the food locker.

Q: 3 WordPhrase: oxygen-free **WordPhraseTier:** 3

Question: "They package the tortillas in an oxygen-free wrap so they stay safe." What does "oxygen-free" mean in that sentence?

- A:** It contains no oxygen.
- B:** It costs no money.
- C:** It is made of aluminum foil.
- D:** It is glass.

Question: Pick the sentence that using the term "oxygen-free" correctly.

- A:** I was so glad it was oxygen-free because I didn't have any money left.
- B:** The water looks so refreshing and oxygen-free.
- C:** The city built a new oxygen-free playground.
- D:** The scientist needed an oxygen-free environment to store the samples.

Q: 4 WordPhrase: experiments **WordPhraseTier:** 2

Question: In the story we learned that the "mice are part of experiments". What does the word "experiments" mean in this sentence?

- A:** games
- B:** tricks
- C:** pets
- D:** scientific tests

Question: Which of the following sentences uses "experiments" in the same way?

- A:** We played experiments at school today.
- B:** The students conducted experiments in science class.
- C:** Pedro learned to do experiments, like juggling.
- D:** The experiments are my favorite part of the Olympics.

Task 2: Forum Discussion

Instructions: Read the posted questions, and respond to each with 3-4 sentences. Then pick two responses from your fellow classmates and write a 2-3 sentence response to each. Remember to practice polite communication skills in all of your postings.

1 - Changes in types of space food

In the story we learned about the first types of foods in the space program and the foods astronauts take into space today. How have the foods changed over time?

2 - Fresh fruits and vegetables

Why is it good that the astronauts can now have fresh fruits and vegetables in space?

3 - The astronauts wipe their trays with wet wipes

In the final paragraph the author tells us that the astronauts wipe their trays with wet wipes. What might happen if the astronauts were not able to clean their trays and utensils?

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Task 3: Writing Activity

Instructions: Pick one of your favorite messy foods, like ice cream or Cheetos, do you think astronauts would be able to eat those foods in space? If so, what special packaging, tools or clean up might they need in order to have those foods? Share your thoughts in the text box below by writing one paragraph with a minimum of five sentences. Use what you learned in the story to support your view.

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