

## Lesson 12

# Comparing Text Structures, Part 1: Chronology, Problem–Solution

### Learning Target

When you compare and contrast how the information in texts is structured, you will better understand the purpose of each text.

► **Read** Passages can have different **text structures**. These structures help authors accomplish specific purposes.

- A **chronological text structure** tells events in the order they happen. This structure can include dates, times, and words such as *first*, *next*, and *later*.
- A **problem–solution text structure** describes problems and solutions. This structure can include words such as *challenge*, *problem*, and *solution*.

Comparing texts can help you understand their structures and purposes.

**Read the passages below. Look for evidence of the structure and the purpose of each one.**

**Passage 1:** The space shuttle *Discovery* made its first flight in 1984. In 1990, *Discovery* launched the Hubble Space Telescope. In 2011, after 30 missions, *Discovery* was taken out of service. *Discovery* then became a display at the National Air and Space Museum.

**Passage 2:** Like us, astronauts use ordinary toothpaste, a toothbrush, and a little bit of water. The challenge, however, is that they don't have a sink for rinsing out their mouths. Their solution? They spit toothpaste into a washcloth.



► **Think** What do you know about text structures? Use the chart below to help you compare and contrast the text structures and purposes of the passages.

Passage	Author's Purpose	Text Structure	Evidence of Structure
1			
2			

► **Talk** Share your chart with a partner.

- Which text structure did the author of Passage 1 use?
- Which text structure did the author of Passage 2 use?
- For each passage, how did the text structure help you understand the author's purpose?



**Academic Talk**

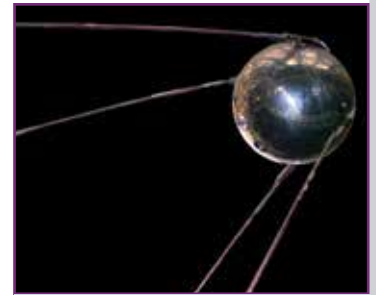
Use these phrases to talk about the text.

- **text structure**
- **chronological text structure**
- **problem-solution text structure**

# The First Victory of the Space Race

by Anna Kane

- 1 The space race refers to a time when the United States and the former Soviet Union competed for superiority in space exploration. It began in 1954, when scientists called on the world's governments to put the first satellites into orbit around the Earth. The United States answered the call first, declaring in July 1955 that it would launch satellites by 1958. The Soviet Union quickly promised to launch its own satellites. Engineers in both nations raced to build satellites and the rockets to carry them.
- 2 The Soviet Union won the first round of the space race, putting a 185-pound satellite called *Sputnik* into orbit on October 4, 1957. As *Sputnik* orbited the planet, Americans could only look up and wonder: Might their nation lose the space race?



a model of *Sputnik*

# The Hazards of Space Junk

by Juan Lima

- 1 Space junk is what humans leave behind from trips into orbit around the Earth. Some junk, such as old satellites and rocket parts, is large. But most junk is less than a centimeter long—pebbles of ice, flecks of paint, and bits of metal.
- 2 Just as junk on a road threatens cars, space junk is a problem for spaceships. You might think the large pieces are more dangerous than the small ones, but the opposite is true. Scientists can track the large objects and steer spaceships away from them. They cannot track the small objects, and they can't avoid what they can't track. You might think that small objects wouldn't be a challenge, but they zip along at several miles per second. At this speed, something less than a centimeter long might be able to punch through a spaceship's hull.
- 3 One way to protect spaceships against junk is to give them strong hulls. But the best solution is to have less junk in orbit. Engineers are working on ways to leave less junk behind. They are also designing machines to remove junk from orbit. Hopefully, the coming years will see less junk around our planet.



## Close Reader Habits

When you reread the articles, **underline** one sentence in each that tells what the passage is about, and **circle** words or phrases that show the text structure.

**Explore**

What text structure do the authors mainly use to present information in each passage?



Look for words or phrases that suggest the structure of each passage.

**Think**

- 1 Complete the chart below. Identify each passage's purpose and text structure. Identify the evidence of that structure in the passage.

Passage	Author's Purpose	Text Structure	Evidence of Structure
"The First Victory of the Space Race"			
"The Hazards of Space Junk"			

**Talk**

- 2 Share your charts. Look at the evidence you each found of the text structures. How does each text structure support the author's purpose? If your partner has any good evidence that you do not, add it to your chart.

**Write**

- 3 **Short Response** Explain how the text structure of each passage supports each author's purpose for writing. Use evidence to support your response. Use the space provided on page 210 to write your answer.

**HINT** Refer to each passage by name so it's clear which one you're writing about.



# Eating in Space

by Amal Kapoor

1 Astronauts get hungry—just like the rest of us. Because they are doing hard work in space, they need to eat breakfast, lunch, and dinner. Astronauts can eat everything from fresh fruit to pizza and pudding.

2 Astronauts carry all their food with them into space. Most of their food consists of freeze-dried meals that can be stored at room temperature for a long time. Before a mission, each astronaut chooses what to eat for each meal during the flight. These meals are individually packaged and organized in the order that the astronaut will eat them.

3 At meal times, astronauts go into the galley, a small kitchen area with an oven and a water dispenser. First, the astronauts select their meals, which are stored in locker trays held by a net. Next, they add water to freeze-dried foods. Then they heat the meal in an oven that only reaches a temperature of about 170°F. This process usually takes 20 to 30 minutes.

4 Once food is rehydrated and heated, astronauts attach their food containers to a meal tray using fabric fasteners. Because there's no gravity in space, food containers must be attached to a tray. Otherwise, food would float around the spacecraft! After astronauts attach their trays to the wall or to their laps, they use the trays like a dinner plate. Finally, astronauts open their food packages with scissors and eat their meal with a knife, fork, and spoon. If they want to season the food, they have to add salt and pepper in liquid form.



## Close Reader Habits

What is the main text structure used in “Eating in Space”? Reread the article. **Underline** any words or phrases that tell you how the author organized his writing.



FROM  
**FARMING IN SPACE**



by Amy Hansen, *Highlights*



- 1 What will astronauts eat when a space voyage takes years or even decades?
- 2 Lots of fresh vegetables, says Dr. Mary Musgrave of the University of Massachusetts. She has spent the last 10 years learning how to grow plants in space. And it's a good thing she has already started her work, because extraterrestrial gardening can be tricky.
- 3 In 1997, while the Mir Space Station spun around Earth, astronaut Mike Foale peered at a sealed growth chamber. The astronaut had planted Dr. Musgrave's quick-growing seedlings in the chamber, but none of the stems were showing.
- 4 He opened the container and saw the problem. The white stems weren't growing upward. Instead, they threaded downward or sideways. Some of the roots snaked up, while others twisted around. These were confused plants.
- 5 On Earth, a plant's roots and stems take cues from gravity, using the Earth's pull to find "up" and "down." This process is called gravitropism. On the Mir, there was almost no gravity.
- 6 Dr. Musgrave suggested a solution: give the plants more light. This idea made sense because plants also use sunlight to find their way—a process called phototropism.
- 7 And it worked. Once the seedlings had more light, the stems turned up and the roots went down.
- 8 Now Dr. Musgrave was free to worry about the next problem: Would her baby plants live to flower?

**Close Reader Habits**

What is the main text structure of "Farming in Space"? Reread the article. **Underline** any words or phrases that tell you how the author organized her writing.

**Think** Use what you learned from reading the science articles to answer the following questions.

**1** This question has two parts. Answer Part A. Then answer Part B.

**Part A**

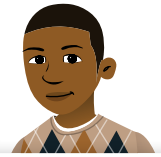
Which statement **best** describes a major difference between the text structures of the articles “Eating in Space” and “Farming in Space”?

- A** “Eating in Space” contrasts eating on Earth and in space, while “Farming in Space” contrasts growing plants in space and on Earth.
- B** “Eating in Space” tells the process of eating a meal in space, while “Farming in Space” tells the problems and solutions of growing plants in space.
- C** “Eating in Space” tells the process of eating a meal in space, while “Farming in Space” tells the process of growing plants in space.
- D** “Eating in Space” tells about problems and solutions for eating meals in space, while “Farming in Space” tells about the process of growing plants in space.

**Part B**

Choose **one** sentence from **each** article that supports the answer in Part A.

- A** “Astronauts can eat everything from fresh fruit to pizza and pudding.” (“Eating in Space”)
- B** “At meal times, astronauts go into the galley, a small kitchen area with an oven and a water dispenser.” (“Eating in Space”)
- C** “Food containers must be attached to a tray.” (“Eating in Space”)
- D** “She has spent the last 10 years learning how to grow plants in space.” (“Farming in Space”)
- E** “In 1997, while the Mir Space Station spun around Earth, astronaut Mike Foale peered at a sealed growth chamber.” (“Farming in Space”)
- F** “Dr. Musgrave suggested a solution: give the plants more light.” (“Farming in Space”)



Some science articles focus on the order in which events happen, like the stages of plant growth. Other articles focus on how scientists encountered and solved problems.

**2** Select **one** sentence from “Eating in Space” and **one** sentence from “Farming in Space” that provide the **best** evidence of each passage’s text structure.

- A** “Astronauts get hungry—just like the rest of us.” (“Eating in Space”)
- B** “These meals are individually packaged and organized in the order that the astronaut will eat them.” (“Eating in Space”)
- C** “Next, they add water to freeze-dried foods.” (“Eating in Space”)
- D** “And it’s a good thing she has already started her work, because extraterrestrial gardening can be tricky.” (“Farming in Space”)
- E** “On the Mir, there was almost no gravity.” (“Farming in Space”)
- F** “Now Dr. Musgrave was free to worry about the next problem: Would her baby plants live to flower?” (“Farming in Space”)

**3** Read this sentence from “Farming in Space.”

What will astronauts eat when a space voyage takes years or even decades?

What is the **best** reason the author chose to begin the article with a question?

- A** to present a puzzle in need of a solution
- B** to show that astronauts are curious people
- C** to describe how space voyages are a cause of worry
- D** to explain why space voyages are so difficult to plan

**Talk**

**4** Discuss the text structures of both articles. How does each structure help the author organize his or her ideas? Use the chart on page 211 to organize your ideas and evidence.

**Write**

**5 Short Response** How and why are the text structures of “Eating in Space” and “Farming in Space” different? Use details from each passage to support your response. Use the space provided on page 211 to write your answer.

**HINT** Quote words or phrases that are evidence of each text structure.