

## RE-VIEW

### Video: Star Gazers

#### *Problem-Solution Nonfiction Text Structure (problem-evidence-solution-results)*

Natalie has recently become interested in learning about space and the solar system. So, she and Turner try to check out the solar system using a telescope, but street lights, clouds, and trees ruin their outdoor stargazing exploration. After returning the telescope to school she feels as though she will have to rely on the pictures in her new book. Then, Turner suggests visiting the planetarium instead. While observing the stars Turner expresses an interest in being an astronaut traveling in space. Natalie recalls a part of the text she read about astronauts in space and shares that with Turner. As she reads the text she notices that it is an outstanding example of Problem-Solution Nonfiction Text Structure.

Now it's **Your Turn!** Read **Space Age Workouts: How Astronauts Stay in Shape** and create your own *Think Aloud* and Graphic Organizer.

Then compare your thinking with **Natalie's Think Aloud and Graphic Organizer.**



#### Before You Read:

Think about what you may already know about astronauts and space travel. Think about what you've learned about problems and solutions. Remember that Problem-Solution Nonfiction Text Structure is what authors use to identify one or more problems and to offer one or more solutions to the problem.

#### While You Read:

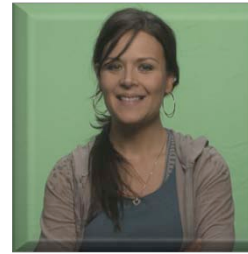
Notice signal words that can help you determine the problem and solution within the text. You may want to highlight signal words in blue and the problem in orange, evidence in tan, solution in brown and results in green. (You may use any colors available to you – just remember your color scheme!)

#### After You Read:

- Think about the *problem* in the text, the *evidence* to support the *problem*, the *solution* provided, and the *result* of the *solution*.
- Think about the video you just watched. Natalie shared how she made sense of the *Space Age Workouts* text.
- Create your own *Think Aloud*. Share how you made sense of this passage, too.

#### Space Age Workouts: How Astronauts Stay in Shape

In space, an astronaut glides, floats and turns effortlessly, free from the continual pull of gravity on Earth. But did you know that moving about so easily is actually hard on the human body? In microgravity, there's no resistance and that's a problem. Without resistance, astronauts can quickly become weak because of bone and muscle loss. Astronauts who spend months in space, such as International Space Station crews, are even more at risk.



Researchers have found the solution to this problem is old-fashioned, but space-friendly exercise. Astronauts work up a sweat two to three hours a day using equipment specially designed for microgravity. Astronauts pedal stationary cycles called ergometers. These machines can track heart rate, and measure how hard the astronaut is exercising.

Walking is one of the best exercises for keeping bones and muscles in good condition, on Earth and in space. A treadmill provides a convenient way for astronauts to log miles. Astronauts wear harnesses in order to stay on a treadmill, not float above it!

Strength training helps prevent bone and muscle loss, too. Instead of power lifting with heavy weights, astronauts exercise with elastic bands attached to pulleys to get the resistance their bones and muscles need.

All this exercise pays off. Astronauts stay strong and healthy while in space. They enjoy a smoother return to Earth and its gravity, too.



**Create a Graphic Organizer:**

After you have determined the problem, evidence, solution, and results, create a graphic organizer below to represent your thinking and to help you remember the author's main points.



#### Compare your Think Aloud with Natalie's Think Aloud:

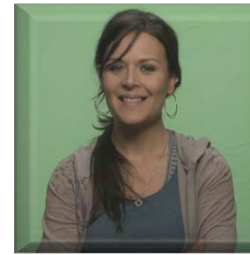
**Natalie's Think Aloud:** From the title and the first sentence, I'm thinking that the author is describing what it's like to move in space because it talks about workouts, staying in shape, and turning effortlessly. Then I see the question "But did you know? The signal word "but" and the question-answer format help me to understand that the author is using problem-solution text structure. Hmm, I'm thinking that I should find the problem stated here somewhere. Yep, there's the signal word, "problem." This helps me to understand that the problem for astronauts is that there is no resistance in microgravity. I realize the author is providing evidence when I read the next sentence. I notice the signal word, "because." I'm thinking this is a word that authors use when they want to explain why something happens. Without resistance, astronauts become weak when they experience bone and muscle loss. That'd be bad!

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**Compare your Graphic Organizer with Natalie's Graphic Organizer:**

**Natalie's Graphic Organizer:** "Because the author is providing information about the problem astronauts face with bone and muscle loss in space I am going to create a problem-solution chart graphic organizer."

**Questions to Think About:**

- How do *signal words* help Natalie make sense of the text?
- How does the *Problem-Solution Graphic Organizer* help Natalie identify the author's key points?
- Why might this process help you make sense of text?
- When might this process be useful?

