NAME _____

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CLASS _____

SPACE TECH SERIES

Mae C. Jemison

Breaking Barriers in Orbit

From Chicago Classrooms to Earth Orbit

Mae C. Jemison was born in 1956 and grew up in Chicago, Illinois. A curious student, she entered Stanford University at just 16 and graduated with a degree in chemical engineering. She then earned a medical degree from Cornell University and served as a Peace Corps medical officer in Sierra Leone and Liberia, combining her talents in science, engineering, and medicine.

In 1987, NASA selected Jemison as one of just 15 new astronaut candidates chosen from about 2,000 applicants. She was assigned to STS-47, a joint mission between NASA and Japan's space agency (NASDA) that carried the Spacelab-J laboratory in the shuttle's payload bay.

On September 12, 1992, Jemison launched aboard the Space Shuttle Endeavour and became the first Black woman to fly in space. As a Science Mission Specialist, she worked in Spacelab-J, which held more than forty experiments in life and materials science. Jemison studied bone cells, tested a system for making saline solution in orbit, and researched motion sickness and how weightlessness affects the body.

The mission lasted almost eight days before Endeavour landed on September 20, 1992. Jemison later left NASA to start her own company and to lead education projects, including the 100 Year Starship initiative, which studies the science and technology humans would need to travel to another star.

Part 1 · Reading Comprehension

1. How does the passage show that Jemison combined several fields of study before becoming an astronaut?

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2. What was Spacelab-J, and which two countries worked together on the mission?

3. Name two experiments or research tasks Jemison worked on during STS-47.

4. What is the 100 Year Starship initiative that Jemison later led?

Part 2 · Critical Thinking

Jemison was chosen as one of only 15 astronaut candidates out of about 2,000 applicants. What qualities and preparation do you think made her stand out, and why do those matter for spaceflight?

Part 3 · STEM Challenge

Orbits and Time on STS-47

Endeavour orbited Earth about once every 90 minutes at an altitude near 300 km. Use this to estimate the mission's orbits.

1. How many minutes are in one full day (24 hours)? (24 x 60)

2. At about 90 minutes per orbit, how many orbits did Endeavour complete each day? (1,440 / 90)

3. The mission lasted about 8 days. About how many orbits total is that? (16 x 8)

4. The actual mission logged 126 orbits. What is the difference between your estimate and the real total? (128 - 126)