Space Camp

A Reading A–Z Level S Leveled Book
Word Count: 991

Connections

Writing

Pretend you are attending space camp. Write a letter to a friend telling him or her about your experiences. Be sure to include details from the book.

Science

Research a space mission. Make a brochure about the mission, including its goal, what resulted from it, and other important information. Present your brochure to the class.

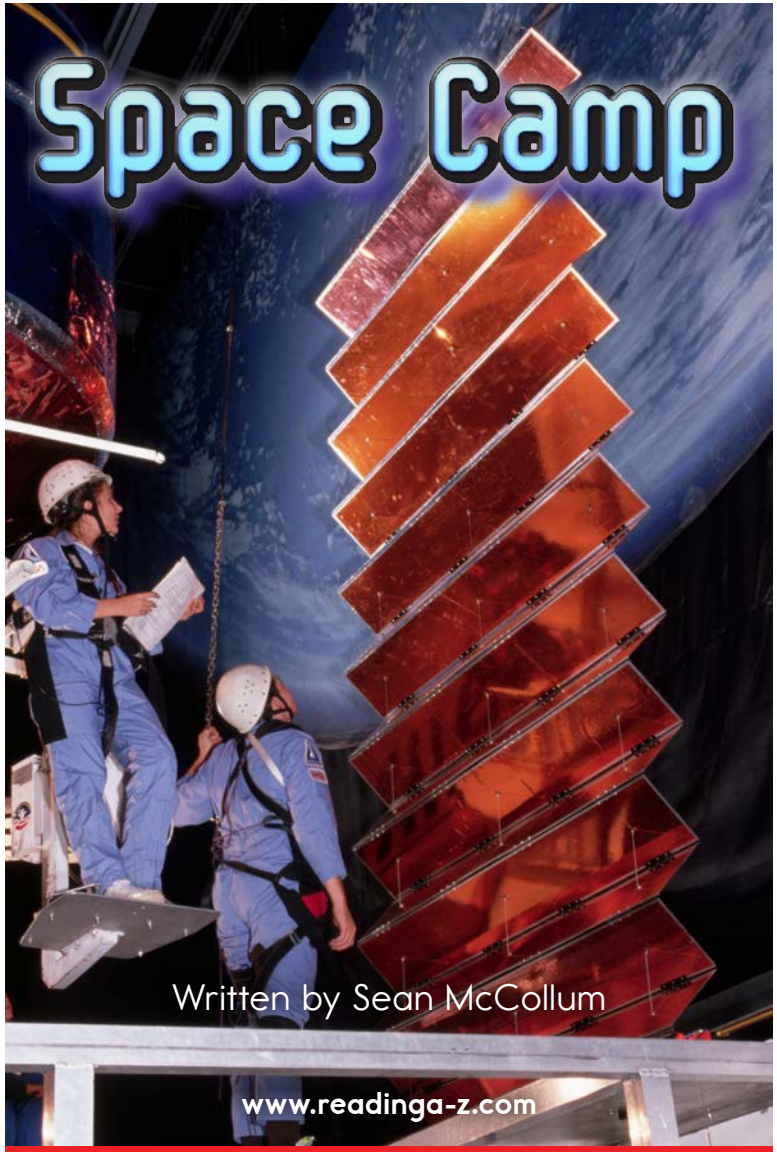
LEVELED BOOK • S

Space Camp

MULTI LEVEL S•V•Y

Written by Sean McCollum

www.readinga-z.com



Focus Question

Why do people want to attend space camp?

Words to Know

aeronautics
exploration
impairments
launch
leadership
rovers
simulators
spacecraft
trainees

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Introduction: From Space Camp to Space

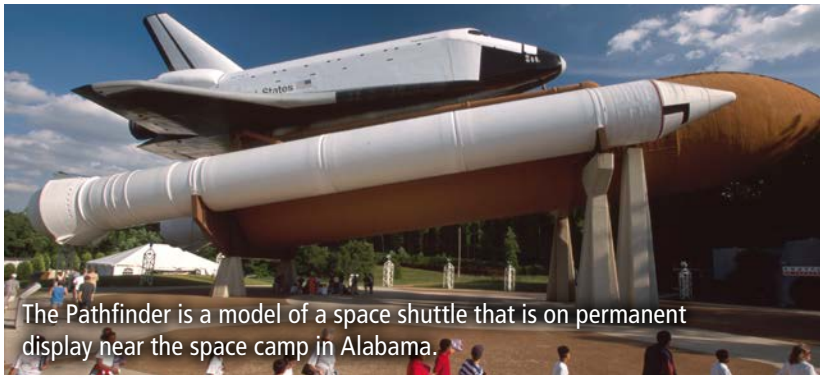
In 1990, sixth grader Kate Rubins went off to camp. The camp she attended wasn't the kind of place where she roasted marshmallows over a campfire, though. This was space camp. It was a place where kids learned about space **exploration**. Kate had told her parents that she dreamed of becoming an astronaut and a scientist.

The entrance and "habitat" where campers stay at United States Space Camp in Huntsville, Alabama

Takuya Onishi, Anatoly Ivanishin, and Kate Rubins fly to the ISS in July 2016.

Twenty-six years later, a group of young **trainees** took their seats in a theater at that same camp. They watched a broadcast of the liftoff of a giant rocket. On board was a fresh crew for the International Space Station (ISS), orbiting more than 322 kilometers (200 mi.) above Earth.

One of the astronauts on that rocket was Dr. Kate Rubins, the same person who had attended the camp in 1990 when she was a sixth-grader. For years she had worked as a scientist. Then she trained to be an astronaut with the National **Aeronautics** and Space Administration (NASA). Finally, she was blasting off to serve on a four-month mission on the ISS. She had fulfilled her childhood dream of becoming an astronaut and flying into space.



The Pathfinder is a model of a space shuttle that is on permanent display near the space camp in Alabama.

Space Camps Around the World

Space camps allow young people to learn about space science. Programs teach about the history of space exploration. Some projects focus on rockets and the machines used in space. Campers also go through some astronaut training. They try out equipment astronauts use to prepare for their missions.

Today, space camps have taken off in many places. One camp is at the United States Space and Rocket Center located in Huntsville, Alabama. There, space camp trainees can see giant rockets and space capsules—the **spacecraft** astronauts fly in. More than 750,000 trainees have attended that space camp since it opened in 1982. They have come from all fifty states in the United States and more than sixty other countries.

Some museums in the United States host space camps, too. For instance, children can attend space camp at the Frontiers of Flight Museum in Texas. In Florida, there is Camp Kennedy Space Center. In Washington, D.C., the Smithsonian Association hosts several summer day camps. They even have space-related programs for children as young as kindergarten age.

Space camps are also popular around the globe. In Canada, the Cosmodome hosts three-day camps and other programs. Space Camp Turkey is located in Izmir, one of Turkey's biggest cities. Russian Space Camp includes talks about Russia's amazing history of space exploration.

Going to Space Camp

Space camps are available to nearly everyone. At some camps, younger kids go with their family. Camps for older kids are grouped by age. Some space camps hold sessions for trainees with visual and hearing **impairments**.

Space camps mostly concentrate on space history and science. At many of these camps, trainees study rocketry. They build and **launch** their own model rockets. At others, they research spacecraft construction before designing their own spaceship.

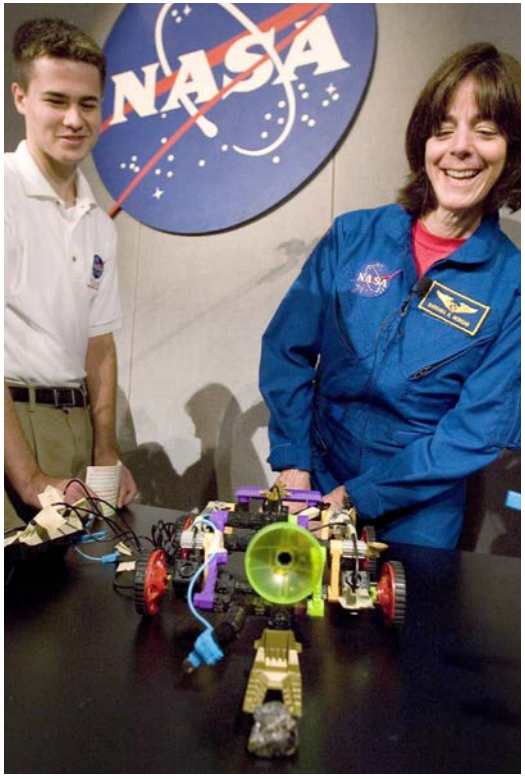
A Day at Space Camp

Below is an example of a day in the life of a space camper.

TIME	ACTIVITIES
8:00–9:00 AM	Get ready and eat breakfast
9:00–10:00 AM	Ride simulators
10:00–11:30 AM	Leadership and team-building activities
11:30–12:00 noon	Lunch in the crew galley
12:30–1:30 PM	Astronaut training simulator
1:30–3:00 PM	Rocket construction
3:00–4:00 PM	Movie showing
4:00–5:00 PM	Simulated mission training
5:30–6:00 PM	Dinner
6:30–7:30 PM	Learn about spaceflight history
7:30–8:30 PM	Engineering workshop
9:00–10:00 PM	Call home and prep for bed

Space camps about robotics are also popular. Robotics is an important part of space exploration. **Rovers** that have explored Mars are good examples. Robotics trainees build robots and program them to do tasks. Teams may face off in a robotics competition at the end of camp.

Children aren't having all the fun, though. Many space camps host adults from around the world. Some science teachers attend so they can bring new lessons back to their schools to teach future space explorers.



A NASA astronaut and educator test-drives a robotic rover built in a space camp program.

Astronaut Training

Many space camps have **simulators** for campers to try. These pieces of equipment help astronauts train for their missions. Astronauts must practice for every situation they might deal with in space. For trainees, simulators let them experience some of the same challenges. While trainees are on the simulators, an adult always watches them for safety.

The Multi-Axis Trainer

The Multi-Axis Trainer (MAT) lets astronauts practice regaining command of a spaceship that is tumbling out of control. It is made of two big metal rings that spin and flip. The trainee is strapped in a seat in the center ring. The two rings then move wildly in different directions.

The MAT is designed so that trainees should not become nauseated or dizzy while riding.

The 1/6 Gravity Chair

This simulator lets trainees jump around as if they were walking on the Moon. There, gravity is one-sixth that of Earth. The simulator helps trainees get used to moving around when they feel much lighter than normal.

The 1/6 Gravity Chair is modeled after a similar chair astronauts used for moonwalk training.

Math Minute

If a person weighs 27 kilograms (59.5 lb.) on Earth, how much would that person weigh on the Moon?

Answer: 4.5 kilograms (10 lb.)

The Space Shot and G-Force Accelerator

Roller-coaster riders will enjoy the Space Shot at Space Camp in Alabama. It shoots riders upward at a high speed. Those who ride the Space Shot feel as though their bodies are much heavier than normal due to the pressure.

The G-Force Accelerator is a spinning ride. It spins quickly, creating a pressure that pushes against the body. It creates the same amount of force astronauts feel during a rocket launch.

The Space Shot shoots riders 42.7 meters (140 ft.) high in 2.5 seconds.

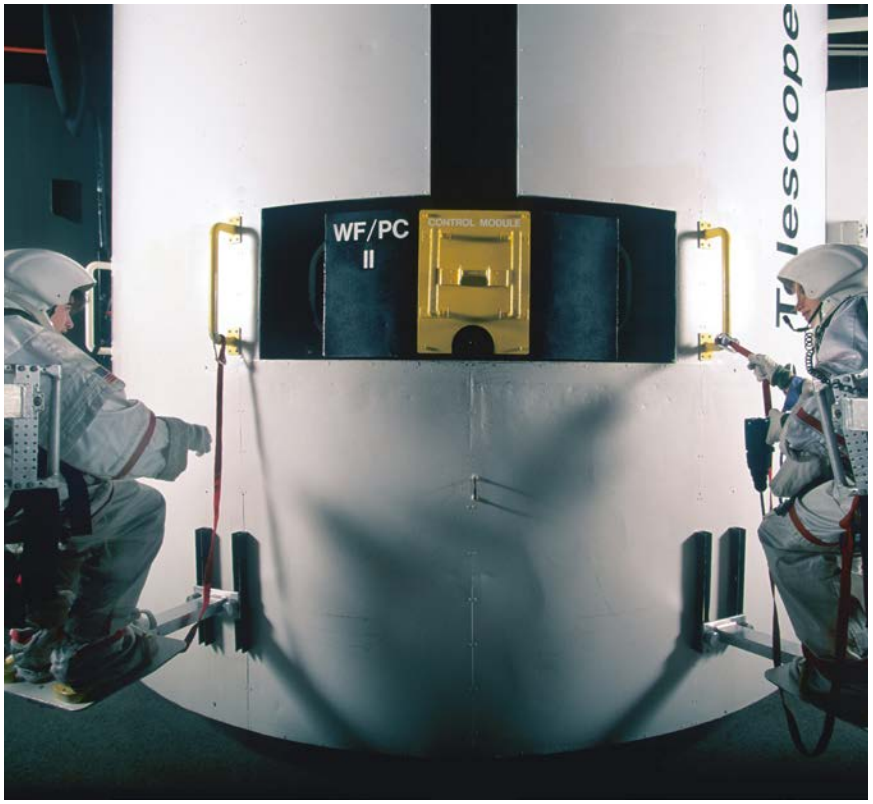
Some trainees work inside the simulators and operate controls as if they are flying a shuttle.

Simulated Missions

Simulated space missions are another popular space camp activity. Teamwork and **leadership** are important parts of being a good astronaut, and these missions let trainees practice both skills. At some camps, they take part in video game–like simulations.

One mission has participants launch the shuttle. They fly it to the International Space Station and then dock with the ISS. Team members perform their own duties, but they must also talk with each other on their headsets. Some trainees work as astronauts. Others work in Mission Control, the command center back "on Earth."

Some simulated missions include voyages to the Moon. Others take place on models of a space station. The crew must be prepared to think fast if the simulator makes up an emergency. For example, they might have to deal with a simulated meteor shower. For older trainees, a few space camps have created simulations for future missions, including a mission to Mars.



Campers repair a model of the Hubble Telescope during a simulation.

Space Camp Heroes

Here are a few astronauts and scientists who have either graduated from space camps or supported programs that help young people learn about space.

- Dr. Leroy Chiao: This veteran NASA astronaut is now head of the Houston Association for Space and Science Education. Chiao does live-streaming visits with students and trainees around the world.
- Bobak Ferdowsi: An aeronautical and astronautical engineer, Ferdowsi is planning a future mission to send a robotic probe to Europa, one of Jupiter's moons.
- Samantha Cristoforetti: This space camp trainee became a fighter pilot for Italy's air force. In 2014–2015, Cristoforetti served on the ISS for 199 days.
- Robert "Hoot" Gibson: Robert Gibson, a big supporter of space camps, is a veteran of five space shuttle missions in the 1980s and 1990s.
- Michael E. Lopez-Alegria: Michael Lopez-Alegria served on four space shuttle missions. He has also been a speaker at Space Camp Turkey.

Astronauts of the Future?

Today's space camp trainees may be the astronauts of tomorrow, like Dr. Kate Rubins. NASA is working closely with other space programs to plan a mission to Mars. They hope the mission will take place in the 2030s. Current space camp trainees could be part of that mission. They could be the first people to leave footprints in the red soil of Mars. They will continue our reach for the stars.

Glossary

aeronautics *(n.)* the science and practice of flight (p. 5)

impairments *(n.)* conditions in which certain abilities are damaged or not working well (p. 8)

launch *(v.)* to use force to start something moving (p. 8)

leadership *(n.)* the ability to guide and direct other people (p. 13)

rovers *(n.)* vehicles used to explore the surface of objects in space, such as planets or moons (p. 9)

simulators *(n.)* machines that model or imitate the appearance or condition of something, usually for training or practice (p. 10)

spacecraft *(n.)* vehicles used for traveling in space (p. 6)

trainees *(n.)* people who are being taught a particular job (p. 5)