



“You are the Next Space Explorers”

Lesson 3: The Red Planet

Description:

Thanks to a cadre of robotic craft, Mars has been flown by, orbited, crashed into, radar inspected, rocketed onto, as well as bounced upon, rolled over, shoveled, drilled into, baked and even laser blasted. We have learned so much and yet there is much more to learn about the Red Planet. Yet to come...being stepped on. Apollo 11 astronaut, Buzz Aldrin, is championing a plan to create a sustainable path to permanent inhabitation of Mars.

Articles, Activities and Videos in this mission reflect a very holistic view of the space program (history, people, science and culture). Whenever possible students are provided with the opportunity to share their learning and understanding through a variety of mediums (e.g. images, words, videos, voice, song).

Target Grade level or Course:

5th-9th grade science, social studies and math

Instructional resources:

Type of Resource	Name of Resource	Description of Resource
Video	Spirit the Martian Story	ShareSpace Education, the K-12 education arm of the Aldrin Family Foundation, is proud to have contributed to the creation of Spirit: A Martian Story by Stimson Snead. Follow the journey of a hardworking space robot named Spirit, who was constructed and sent to Mars on a 90 day mission to research and conduct experiments on the desolate red planet!
Article	Destination Mars	Since 1964, NASA has sent over 16 successful missions to Mars. All of these have been robotic, unmanned missions. How does NASA choose when to launch a spacecraft to Mars?
Activity	Where Is Mars?	In this activity, students will create a dynamic scale model of the Sun/Earth/Mars system.
Activity	Comparing Earth and Mars	In this activity, students will use online tools to compare the Earth and Mars to find regions where there appear to be

		similarities in features and formations.
Activity	Mapping Mars	In this activity, students will conduct a sounding procedure using a topographical map of Mars to create a physical model of a geologic feature.
Article	History of the United States Mars Exploration	Thanks to a cadre of robotic craft, Mars has been flown by, orbited, crashed into, radar inspected, rocketed onto, as well as bounced upon, rolled over, shoveled, drilled into, baked and even laser blasted. Yet to come...being stepped on.
Article	Doing Science on Mars	Humans have had an alluring interest in Mars; the Red Planet has long drawn our curiosity. Even today, there's a rover wheeling about Mars named just that. We first made eye contact with the world that holds its secrets tight thanks to Earth-based telescopes.
Activity	Landers and Rovers on Mars	In this activity, your team will research a Mars mission and then write a song or poem you will creatively perform.
Article	Analogues on Earth	There are ways to get ready for travel to the Moon or Mars...but without leaving Earth! An analog is a situation on Earth that produces effects on the body similar to those experienced in space. These studies help prepare for long duration missions far from Earth.
Article	Living on Mars	Safely touching down on Mars is one thing. Surviving and flourishing there is another. Once a crew is firmly footed on Mars, just staying alive takes a lot of time and effort.
Article	Getting to Mars	A major challenge that must be faced early on in occupying the Red Planet is how best to make it self-sufficient. Shipping to Mars the resources to reliably assure a human stay on Mars is prohibitively expensive. Like the Moon, there's a need to "live off the land" by using local resources on Mars, its water, soil and other assets, some of which, have not yet been identified.
Article	Cycling Pathways to Occupy Mars	Apollo 11 astronaut, Buzz Aldrin, is championing a plan to create a sustainable path to permanent inhabitation of Mars. This time, no flags, footprints, and then scurrying back to Earth. It is called Cycling Pathways to Occupy Mars - CPOM for short. By dramatically lowering the cost of transporting astronauts to Mars, it is, by far, the most sustainable approach to permanent inhabitation of Mars.