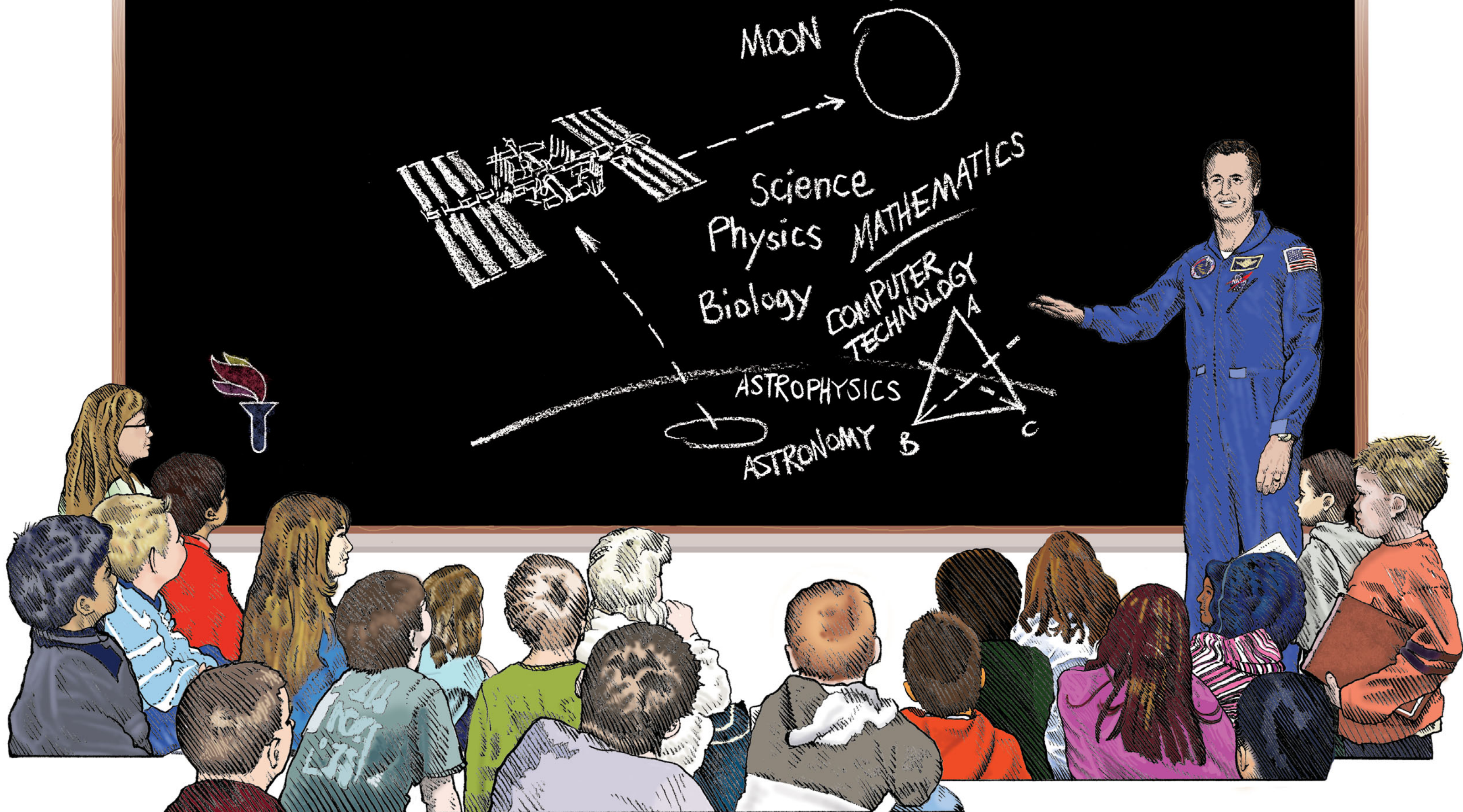




The Journey to Mars... Begins in the Classroom.



Mars – The Red Planet

Even though it is a small rocky planet, Mars has captured the imagination and scientific interest of humans for centuries.

Knowledge about the red planet has increased with robotic missions. NASA sent its first successful mission to Mars in 1964. Numerous orbiters, landers, and rovers have followed and will continue over the next few decades. The Vision for Space Exploration calls for NASA to return to the moon and use increasingly longer stays to prepare for human missions to Mars.

Through exploration and research, many myths such as Mars having an Earth-like atmosphere and climate supporting canals with flowing water and vegetation have been dismissed and much insight into the formation and evolution of the red planet has been gained.

Mars is not the closest planetary neighbor to Earth, but it is the most Earth-like. It is the fourth closest planet to the Sun. Mars has been subjected to some of the planetary processes associated with the formation of Mercury, Venus and Earth. These processes include volcanism, impact events, erosion, and other atmospheric effects. Another Earth-like characteristic is the growth and retreat of the Martian polar ice caps with the change of seasons as Mars orbits the Sun.

The red planet and Earth differ in a number of ways. The Martian surface retains much of the record of its evolution because it had liquid water only during part of its evolution. Mars does experience surface erosion, but due to the absence of flowing water over much of its geologic history, the rate of erosion of the

red planet's surface is much slower than that of the Earth, and the surface features have not shown the same level of dramatic changes that characterize Earth's landscape. The geological development and alteration of Mars' crust, called tectonics, differs from Earth's. Martian tectonics seem to be vertical, with hot lava pushing upwards through the crust to the surface. On the other hand, Earth tectonics also involve sliding plates that grind against each other or spread apart on the seafloors and along fault lines.

Exploration of the Martian surface by imaging orbiters has revealed some remarkable geological characteristics. Mars lays claim to the largest volcanic mountain in the solar system. Olympus Mons is about 17 miles high and 373 miles wide. Volcanoes in the northern Tharsis

region are so huge that they deformed the planet's spherical shape. The Vallis Marineris, a gigantic equatorial rift valley, stretches a distance equivalent to the distance from New York to Los Angeles. Arizona's Grand Canyon could easily fit into one of the side canyons of this great chasm.

The Martian atmosphere which primarily is composed of carbon dioxide gas is currently too thin to allow liquid water to exist. Seasonally, great dust storms occur that engulf the entire planet. The storms' effects are dramatic, including dunes, wind streaks and wind-carved features. There is no evidence of civilizations, and it is unlikely that there are any existing life forms, but there may be fossils of life-forms from a time when the climate was warmer and there was liquid water on the surface.



Mars Facts

Average Distance from Sun

Period of Rotation

Period of Revolution around Sun

Diameter

Tilt of Axis

Length of Year

Moons

Gravity

Temperature Average

Atmosphere

142 million miles

24 hours, 37 minutes

687 days

4,220 miles

25 degrees

687 Earth Days

2 (Phobos and Deimos)

.375 that of Earth

-81 degrees Fahrenheit

Mostly Carbon Dioxide with some Argon, Nitrogen and water vapor