



ASTROTREK[®]



Program Description

Astrotrek is a cost effective 3-day program that allows larger groups to experience space camp. While here, groups learn space history, experience astronaut simulators and attend an IMAX movie in our domed theater.

Core Activities:

Space History (3 hours)

NSTA Standard: History and Nature of Science: Science as a Human Endeavor, History of Science

In a program started by rocketry pioneer Wernher Von Braun, it is not surprising that Astrotrek trainees learn much about the history of the space program. The classroom for these lessons is the U.S. Space and Rocket Center museum, the home of one of the world's largest collections of actual space hardware. In this engaging setting, trainees discover that the space program, like other scientific endeavors, requires the efforts of a wide variety of people and that its accomplishments were the result of incremental tests and experiments.

Mercury	Trainees discover how NASA chose the first seven astronauts and what they accomplished.
Gemini	Here trainees learn the steps that NASA took to test the many maneuvers and procedures that would eventually take us to the moon.
Apollo	This session chronicals some of the most exciting moments in the space race. Trainees find out how NASA recovered from the tragic Apollo 1 fire, how engineers designed the vehicles that transported men to the moon and what astronauts and scientists discovered from these trips.
Rocket Park/Shuttle Park	Trainees participate in a scavenger hunt in Rocket Park, a collection of the launch vehicles America used to launch astronauts into space including the largest rocket ever launched, the Saturn V and a full size Space Shuttle model.
Museum Hunt	Another scavenger hunt allows the trainees to explore all of the space memorabilia inside the Space and Rocket Center museum including a moon rock, an Apollo capsule and last remaining fragment of Skylab.



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Astronaut Training (5 hours)

NSTA Standard: Physical Science; Motions and Forces

This component of Astrotrek utilizes the excitement of astronaut training to teach scientific concepts. Astrotrek trainees can define acceleration, gravity and Newton's Laws of Motion in terms of their own experiences on a wide variety of training simulators.

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| Multi-Axis Trainer | This simulator, modeled after a trainer used in the Mercury program, allows the trainees to experience the disorientation astronauts would feel if a capsule went into a tumble spin. |
| 5DF Chair | This simulator simulates the five degrees of freedom, forward, backward, side-to-side, roll, pitch and yaw. Performing these movements simulate what it would be like to work in the frictionless environment of space during an EVA. They also demonstrate Newton's Third Law of Motion. |
| G Force | This simulator is designed to prepare trainees for the forces of acceleration experienced by astronauts during launch, the times the force of Earth's gravity. |
| Space Shot | This exciting simulator launches the trainees 140 feet in 2.5 seconds allowing them to feel four times the force of Earth's gravity and 2-3 seconds of freefall. |
| Mars Simulator | This motion-based simulation features a jaunt through a fictional Martian theme park. |
| Climbing Wall | Although trainees do not undergo the intense physical training of astronauts, they do test their strength on the Mars Climbing Wall. |
| IMAX | Trainees experience two Omnimax film during their stay. |



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Groups attending this 3-day program will also participate in the following activities.

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| Parachute Activity | Students will learn the how and why of parachute-based recovery systems. Each trainee will learn about basic parachute designs, like why many have hole in the top, and then design and build their own tissue paper parachutes. |
| Action Rocket Reaction | Trainees not only learn the parts of a rocket, but also have an opportunity to experiment with Newton's Third Law of Motion while building and launching an air rocket. |
| Strange Science Presentation | Trainees watch and participate in a fast paced, live science presentation. This stage-show demonstrates basic scientific principles and technology used in today's space program. Some trainees will have the opportunity to go on-stage and participate with demonstrations, while the rest of the group will have the opportunity to participate from the audience. |