SATELLITE CHALLENGES

Explore the universe from your classroom.

Satellite Challenges are hands-on, digital STEM programs that transport students into realistic space simulations. In each Challenge, students work in teams that mirror real-world STEM careers, like geologists or engineers. Together, they solve urgent problems using critical thinking, analysis, and applying math and science skills.

Led virtually by a Challenger Learning Center Flight Director, each student plays a vital role in the mission's success, practicing skills like communication, leadership, and teamwork. These immersive experiences bring STEM to life while sparking interest in new topics and careers.

What Students Experience

- Spend approximately 60-90 minutes completing the Challenge
- Follow instructions of a Challenger Learning Center Flight Director via real-time video
- Take on key roles within a team, such as robotics, life support, or engines
- Collaborate closely with their small group
- Solve urgent problems using research and analysis
- Learn and apply grade-level scientific vocabulary
- Encounter—and overcome—unexpected obstacles
- Build confidence in their ability to "do STEM"

Additional Information

Aligned with NGSS and Common Core, our Satellite Challenges use secure video conferencing and require internet-connected devices with audio/video capabilities. Closed captioning is available, and no personal student information is collected.

Choose Your Challenge

Suggested Grade
5-8

Destination Mars

Goal: Select one of Mars' moons for humanity's next research base.

Humanity is preparing to build a base on one of Mars' moons, Deimos or Phobos, to advance research of the Red Planet. Your students will work in teams to study the moons' surfaces and select the best location for the base. To succeed, they must work together to analyze terrain maps, conduct radiation tests, protect the rovers collecting data on Deimos and Phobos, and respond to emergencies.

Featuring:
Dorothy Metcalf-Lindenburger
Former NASA Astronaut

Suggested Grade
5-8

Destination Moon

Goal: Explore the Moon's surface and establish a lunar habitat.

Researchers are ready to return to the Moon and find a suitable location to build a habitat for astronauts. To get there, your students will work in teams to launch Blue Origin's reusable launch vehicle, New Glenn, and safely land the lunar lander, Blue Moon. While in orbit, they'll learn about spacecraft design and the launch process while monitoring for potentially dangerous space weather and space debris, conducting safety checks, and deploying satellites.

Featuring:
Adam Wuerl
Director of Advanced Concepts and Strategy, Blue Origin

Suggested Grade
6-8

Observation Earth

Goal: Build new satellite technologies to monitor Earth.

Sensors on the International Space Station (ISS) are outdated, and it's up to your students to replace them with new, state-of-the-art hardware. Together, they'll program robotic arms, capture a cargo craft arriving at the ISS, monitor astronaut vitals during a spacewalk, and collect and analyze satellite data to study Earth's geological events. Students will learn firsthand how satellites help humanity monitor global events and protect people.

Available in Spanish.

Featuring:
Kenneth Harris II
Senior Project Engineer, The Aerospace Corporation