

Frequently Asked Questions

What is the U.S. Department of Education's (ED's) 21st Century Community Learning Centers (21st CCLC) program?

ED's 21st CCLC program (<http://www2.ed.gov/programs/21stcclc/index.html>) supports the creation of community learning centers that provide academic enrichment opportunities during non-school hours for children, particularly those who attend high-poverty and low-performing schools. These 21st CCLCs help students meet state and local standards in core academic subjects, such as reading and math, and offer enrichment activities to complement and reinforce schools' regular academic programs. The 21st CCLC program was created as part of the 1994 reauthorization of the Elementary and Secondary Education Act (ESEA). ESEA was signed into law in 1965 by President Lyndon Baines Johnson, who believed "full educational opportunity" should be "our first national goal."

What is the partnership between ED and NASA?

The 21st CCLC program has collaborated with NASA since 2013 to bring exciting content and experiences in science, technology, engineering and math (STEM) education to students in some of the highest-need communities. The programs, which take place during out-of-school time, currently benefit economically disadvantaged and underserved students at about 80 21st CCLC sites nationwide. Through ED's collaboration with NASA, student teams tackle real-world engineering design challenges and interact directly with NASA scientists and engineers.

What is the importance of the STEM partnership between ED and NASA?

Evidence indicates that out-of-school time provides a critical pathway for interesting all students in the STEM fields. It is particularly effective for engaging underserved and economically disadvantaged students. ED's partnership with NASA allows the 21st CCLC program to reach students in high-need schools, who often have few opportunities to engage with high-quality STEM content and experiences — or to interact directly with STEM professionals.

What kinds of learning experiences does the partnership provide?

The ED-NASA collaboration provides students in grades 5 through 8 the opportunity to solve challenges currently being addressed by NASA scientists and engineers and to learn firsthand about engineering design and practices.

How many NASA challenges have there been?

In 2013, 20 21st CCLC sites in three states participated in the NASA challenges, which offered three engineering design challenges. In 2015, almost 80 21st CCLC sites in 10 states are participating, with the option of choosing from six engineering challenges.

What are the types of challenges for which the students are developing solutions?

The STEM challenges are based on real mission data and experiences that occur during human and robotic exploration of the solar system. Each challenge comes with an educator guide, introductory videos, and resources to help educators conduct the challenges. The current challenge objectives are as follows:

- **Parachuting Onto Mars.** Build a device to slow the descent of a spacecraft or probe, while protecting its cargo for a successful landing.
- **Spaced Out Sports.** Design a sports game, taking advantage of students' understanding of Newton's Laws of Motion, that could be used by astronauts on board the International Space Station.
- **Radiation Shield.** Design a shielding device to protect astronauts from space radiation.
- **Why Pressure Suits?** Design a pressure suit or spacesuit that will protect a high-altitude pilot or astronaut from the low-pressure environment of a near-vacuum or vacuum environment in space.
- **Packing Up for the Moon.** Design and develop a plant growth chamber that could be used by astronauts to grow vegetables on the moon.
- **Design a Crew Exploration Vehicle.** Design and construct a Crew Exploration Vehicle (CEV), which must carry two toy astronauts as passengers.