# Do you want to increase your students' engagement in STEM subjects?

Imagine giving students the chance to be part of the team searching for a Hawaiian monk seal that's gone missing, to work with the paleontologists identifying bones of a ground sloth, and to support park rangers on their quest to identify a plant that could destroy the Smoky Mountains.

Classroom Adventures makes this possible… without leaving the classroom.
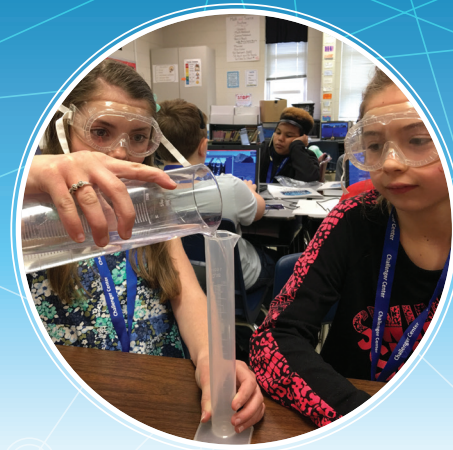
CLASSROOM ADVENTURES

The online, STEM experiences take the entire class on journeys to reach collective goals as they research, work together to answer questions, and collaborate to find solutions to urgent challenges. From the moment they receive their briefing from the Commander, the classroom turns into a real-world STEM workplace – each student transforming into and working as a STEM professional.

For more than 30 years, Challenger Center has delivered incredible STEM programs at Challenger Learning Centers around the world. Using our expertise in combining computer-driven simulations, hands-on activities, and role-playing opportunities, we have created classroom experiences unlike anything else on the market.

Classroom Adventures:

- Deepen student engagement in STEM.
- Strengthen students' communication, collaboration, and problem-solving skills.
- Introduce students to STEM careers.

Teachers rated student engagement during Classroom Adventures a 4.8 out of 5, with 5 being "very engaged."

Developed by teachers for teachers, Classroom Adventures serve as a launch point to science units in 3rd-5th grade classrooms. The Adventures are earth science, life science, and/or physical science themed and include three, one-hour blocks of programming. Kick-off your unit with our interactive simulation, then integrate the engineering activity and nonfiction writing exercise where it fits best in your unit plan. Each Adventure gives students an understanding of how the topics they learn in school relate to the real world in an exciting, interactive environment.

The programs are easy to use in any classroom with computers or tablets, wifi, and common classroom materials. After completing simple online training, teachers launch the Adventure revolutionizing the classroom into an engaging STEM workplace.

"[Classroom Adventures] did an incredible job hitting every SINGLE aspect of 21st century skills… Every classroom should be like this for science and other subjects. They loved interacting with each other in a way that encouraged their creativity as well as their critical thinking skills. It was interesting… there were no arguments… only great conversations backed up with evidence from their learning."

**5th Grade Teacher
Albemarle County Public Schools, VA**

Full Classroom Digital Experience

Classroom Adventures are computer-based simulation experiences controlled by the students as they interact with the technology, complete group activities, and discuss solutions with their classmates. The experience only moves to the next phase when the teacher sees the students collectively meet critical milestones. Embedded throughout the simulations are digital elements including lab experiments, mapping challenges, videos, and articles. The combination of these elements creates a multi-faceted interactive digital experience in and out of the software.

STEM Plus

The three, one-hour blocks – interactive simulation, engineering activity and writing exercise – engage the students in more than just STEM topics. Students are exposed to nonfiction reading and writing, scientific writing, oral communication, social studies skills, and more. Each Adventure features real science data and is aligned to current national education standards.

Collaborative Problem Solving

Each student plays a critical role as an individual, as a member of a small team, and as a member of the full classroom team. This structure creates an environment where students have to collaborate with one another, understand and implement effective and impactful ways to share ideas with a group, and work together to arrive at the best solution.

Role Playing STEM Professions

Students step into the shoes of a STEM professional when they are assigned to an Adventure team. They learn about the skills needed for these professions by actually putting the skills to work. This role-play strategy gives students the chance to become STEM professionals, instead of just reading about it or watching a video.

AQUATIC INVESTIGATORS

The Commander of an undersea lab informs the students that Hawaiian monk seals are missing from their usual home in the Northwestern Hawaiian Islands. The Commander asks the class to determine what caused them to leave their home, in hopes of finding the missing Hawaiian monk seals. As they work to find the answer, a seaquake takes place damaging the undersea lab and putting the crew at risk. The team must work together to quickly repair the lab and ensure the safety of the crew. When the crisis is averted, the group can return to their search for the Hawaiian monk seals.

Science Teams

Chemist | Ecologist | Engineer | Marine Biologist

Educational Goals

- Introduce students to the interconnectedness of the ocean ecosystem.
- Introduce students to outside forces impacting the health of the ocean.
- Inspire students to solve problems using the engineering design process.
- Emphasize the importance of communicating scientific ideas through nonfiction writing.

NGSS Alignment

- 5-ESS2-1 - Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.
- 5-ESS3-1 – Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.
- 3-LS4-4 – Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

DIRT DECODERS

A paleontologist in the American Southwest calls in the student experts after he finds two important ground sloth bones in a place they don't belong. The paleontologist asks for the students to figure out where the bones came from and find the rest of the bones that complete the skeleton. As they examine a series of scientific bread crumbs, the students learn that a nearby geologist is trapped in a flooded cave and needs their help. They must help rescue the geologist and then return to decoding their findings.

Science Teams

Biologist | Cartographer | Geologist | Paleontologist

Educational Goals

- Introduce students to rock formations and fossils.
- Introduce students to the ways in which weathering and erosion alter landscapes.
- Inspire students to solve problems using the engineering design process.
- Emphasize the importance of communicating scientific ideas through nonfiction writing.

NGSS Alignment

- 4-ESS1-1 – Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.
- 4-ESS2-1 – Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.
- 4-ESS2-2- Analyze and interpret data from maps to describe patterns of Earth's features.

NATURE RANGERS

A park ranger in the Great Smoky Mountains briefs the students on a mystery plant that may not be native to the area and asks for their help identifying the plant. As the students identify the plant and analyze the impact it could have on the ecosystem, they realize it is invasive and must be eliminated immediately. However, they soon realize that a bridge leading to their supplies has been washed out by an overnight storm. The classmates use teamwork and code breaking skills to access the supplies. Only then can the team return to their task of eliminating the invasive plant and saving the Great Smoky Mountains.

Science Teams

Biologist | Botanist | Ecologist | Forester

Educational Goals

- Introduce students to the life cycle and structure of plants.
- Introduce students to the interconnectedness of forest ecosystems.
- Inspire students to solve problems using the engineering design process.
- Emphasize the importance of communicating scientific ideas through nonfiction writing.

NGSS Alignment

- 4-LS1-1 – Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
- 5-LS1-1- Support an argument that plants get the materials they need for growth chiefly from air and water.
- 5-LS2-1- Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Requirements to Deliver Classroom Adventures:

Students   Minimum of four students.
Maximum 30-35 students (ideal).

Teacher   One teacher/educator.

Room   Regular classroom or any room that allows for collaboration.

Technology:

- Computers/Tablets: One computer or tablet per student. One computer or tablet per teacher. One additional computer and projector system per class.
- Compatible with iOS and Android tablets.
- Browser: MS Edge v. 38 or higher, Firefox v. 44 or higher, and Chrome v. 68 or higher.
- Internet: Includes real time streaming audio and video. Broadband high-speed Internet is required for an optimal experience.

Classroom Adventures is a product of Challenger Center, a leading nonprofit STEM education organization. Challenger Center creates experiential education programs that engage students in hands-on learning opportunities. These programs, delivered in Challenger Learning Centers and classrooms, strengthen knowledge in STEM subjects and inspire students to pursue careers in these important fields. Challenger Center was created by the Challenger families to honor the crew of shuttle flight STS-51-L.

Challenger Learning Center of Alaska is a part of the Challenger Center network. To learn more about Classroom Adventures in your school, contact:
Suzanne Phillips at 907-283-2000 or Suzanne.phillips@akchallenger.org.

www.challenger.org/adventures