



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 ever leaving the classroom.



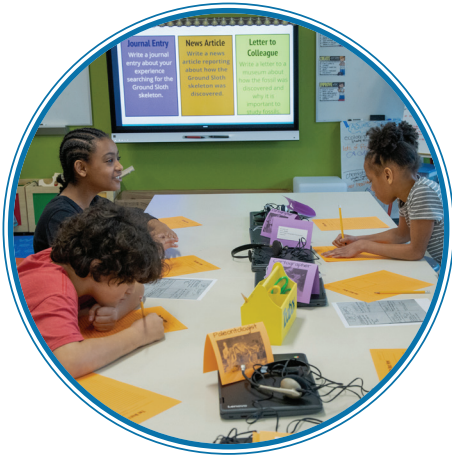
CLASSROOM ADVENTURES

Classroom Adventures are digital STEM experiences delivered by teachers to 3rd-5th grade classes. The entire class participates in these STEM journeys working collaboratively to reach collective goals. Students conduct research, answer questions, and address unexpected challenges as they move through the experience. From the moment they receive their briefing from the Adventure Commander, the classroom turns into a real-world STEM workplace centered around the student-driven, teacher-facilitated experience.

Classroom Adventures:

- Support students to develop self-efficacy and 21st century skills.
- Encourage students to work both independently and collaboratively to solve real-world issues while engaged in a problem-centered simulation.
- Inspire students to solve problems using the engineering design process.
- Emphasize the importance of communicating scientific ideas through nonfiction writing.

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 earth science, life science, and physical science-themed Adventures marry learning, literacy, and life skills. The program includes three, one-hour activities: interactive simulation, integrated engineering challenge, and writing exercise. The entire program can easily adapt to your unit plan. Each Adventure optimizes experiential learning through virtual first-person simulations, project-based inquiry, and scientific verbal and written communication.

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

Interactive Simulation Activity

The first of the three activities, the simulation is a computer-based experience, where each student completes individual research, engages in small and whole group activities, and actively problem solves with their classmates. A combination of digital elements including lab experiments, mapping challenges, videos, and articles creates a multi-faceted interactive experience.

Engineering Activity

Using the emergency encountered during the simulation, each team plans, creates, and improves an original prototype, made with easily found classroom materials, that addresses the real-world issue encountered during the Adventure.

Writing Activity

Used at any point after the simulation, the writing activity provides an opportunity for students to communicate their understanding of concepts presented during the Adventure through three nonfiction writing prompts, supported by graphic organizers and examples. To turn STEM into STEAM, students are given an art extension activity related to each writing prompt.

Collaborative Problem Solving

Each student plays a critical role as an individual, a member of a small team, and a member of the full classroom team. This structure creates an environment where students must communicate, cooperate, and collaborate to solve the problems.

Role Playing STEM Professions

Students step into the shoes of a STEM professional when they are assigned to an Adventure team. This role-play strategy introduces career skills needed for these professions and gives students the chance to become real-world STEM professionals, instead of reading about the job or watching a video.



The Commander of an undersea lab informs the students that Eric and his fellow Hawaiian monk seals are missing from their usual home in the Northwestern Hawaiian Islands. The Commander asks the class to investigate why the seals left their home and determine the possible location where scientists should

look for them. 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 returns to continue their search to find the missing 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.

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.



A paleontologist in the American Southwest calls on students for help after he finds two important but misplaced fossilized ground sloth bones. The paleontologist asks the students to figure out where the bones came from so scientists can locate the rest of the bones to complete the skeleton. As they

examine a series of scientific breadcrumbs, the students learn 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.

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 erosion by water, ice, wind, or vegetation.
- 4-ESS2-2- Analyze and interpret data from maps to describe patterns of Earth's features.



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 the bridge leading to their supplies has been washed out by an overnight storm. The classmates use teamwork and code breaking skills to help the park rangers 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.

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.



Minimum Requirements to Deliver Classroom Adventures:

- **Students:** Minimum of four students. Maximum 32-36 students (ideal). One device per student. A set of headphones for each student is highly encouraged.
- **Teacher:** One teacher/educator and one device.
- **Space:** Regular classroom or any room that allows for collaboration.
- **Internet:** A Wi-Fi connection for each device.

Software Features and Requirements:

- Learning Tool Interoperability (LTI) compatible
- Syncs with your Google/Google Classroom account
- Compatible with iOS and Android Tablets
- Optimized for Chrome
- Compatible Browsers: CMS Edge v38 or higher and Firefox v44 or higher



To learn more about Classroom Adventures, email adventures@challenger.org or call 202-827-1580.

For more than 35 years, Challenger Center has delivered incredible STEM programs to millions of students around the globe. Using our expertise in combining computer-driven simulations, hands-on activities, and role-playing, we have created classroom experiences unlike anything else on the market.



www.challenger.org