Our Programs

The Conservancy's unique STEM education programs use community science to immerse students as future stewards of our environment. During our programs, students take part in real scientific investigations, working alongside researchers and land managers to investigate challenges faced by Crystal Cove State Park. Student findings inform real land management decisions, with past student data included in academic publications and furthering our understanding of how best to protect wild places like Crystal Cove State Park.

Supporting Classroom Learning

Our STEM Education programs are more than just a field trip. Carefully-designed lessons bring scientific practices to life in your classroom, with scaffolded slideshows, videos, and screencasts that make it easy to design models, make hypotheses, and graph data.

All classroom materials are available for free, including in-person and online workshops for educators to prepare you to immerse students in real scientific research!

Our Approach to STEM Learning Our

programs are anchored in in sociocultural approaches to learning and the idea of science-as-practice: that the best way to learn science is to do science and engage in conversation with each other, which mirrors how professional scientists work to solve challenging ideas together. Our programs integrate a three-dimensional approach to learning that aligns with the Next Generation Science Standards.



of students said it was the first time participating in real science.



of students said their experience influenced their college or career choices.



of our students served are from low income schools.

www.crystalcove.org



K-12 STEM Education Programs

Trouble with Trash Grades K-2 || Engineering

Lower elementary scientists help Steve the Crab investigate the problem with trash on Crystal Cove State Park's beaches. As they explore the seen and unseen effects of trash on the animals who call Crystal Cove home and the people who love to visit, they use their knowledge of science, engineering, and their community to come up with a solution.

Project Crystal Code Grade 7 || Restoration Ecology

Middle school scientists investigate how different types of mulch decompose and affect soil moisture retention at a restoration site in Moro Canyon. Students identify how the environment has changed, design a computer model to show how carbon moves through the ecosystem, create a hypothesis, program a soil moisture sensor, record and analyze their data before sharing their findings.

Coastal Dynamics Grades 8-12 || Engineering

Student teams investigate how Crystal Cove State Park's beaches are changing and determine what we can do to protect them. As they step into the shoes of environmental engineers, students define the problem, design a model to explore how different factors affect the shape of our beach, record and analyze data, propose a solution to protect the beach.



Project Crystal Grade 5 || Restoration Ecology

Fifth grade scientists investigate how the types of plants used in restoration affect insects and birds in Moro Canyon. Throughout this unit, they identify how the environment has changed, design a model to show ecosystem interactions, create a hypothesis, collect data in the field, analyze the data, and share their findings back with Crystal Cove State Park.

MPA Expedition Grades 7-12 || Marine Biology

Student research teams investigate how best to protect the marine ecosystem in the Crystal Cove State Marine Conservation Area. As they explore how MPA regulations protect coastal marine ecosystems, students design a model, process data aboard a fishing vessel, analyze the data, and share their findings with Crystal Cove State Park and Newport Landing.

Fire Ecology Grades 9-12 // Internship

Interns visit three Orange County burn scars managed by Irvine Ranch Conservancy and Crystal Cove Conservancy to investigate how increased fire frequency affects the recovery of coastal sage scrub habitats. Students' research contributes to a longterm study with local natural resources land managers.