Crystal Cove® CONSERVANCY

Session 1: Welcome to Project Crystal!

Focus: Changing Landscapes
Grade Level: 3-5
Session Length: 45-60 minutes

Driving Questions

- How has the landscape in Moro Canyon changed over time?
- How are plants in Moro Canyon adapted to survive?
- Is Moro Canyon worth protecting?

NGSS Links

- Asking Questions

Systems Thinking Characteristics

- Identifying System Components & Processes

In the first session of Project Crystal, students visit Crystal Cove State Park virtually through a live Zoom field trip with Crystal Cove Conservancy, and are introduced to the phenomena of how Moro Canyon's landscape has changed over time.

During a Video Field Trip to Moro Canyon, they meet Crystal Cove Conservancy staff and are invited to help protect the ecosystem there. They then explore Moro Canyon's coastal sage scrub ecosystem, investigate how the landscape has changed over time, and reflect on why we might want to protect it.

Learning Outcomes & Assessments

By the end of this module, students will be able to...	*You can assess this using...*
1. *Describe* the difference between coastal sage scrub and degraded landscapes in Crystal Cove State Park's Moro Canyon.	Student discussions; Science journals
2. *Describe* how the history of Moro Canyon has affected and changed the landscape.	Student discussions

Session Overview

Section	Description	Length	Format
Launch	Students are welcomed virtually to Moro Canyon, and invited to join Project Crystal and help protect the unique landscapes in the park.	5 minutes	Whole group
Explore	Students use their science journals to record observations of the different habitat types in Crystal Cove's Moro Canyon, and use virtual polls on mentimeter to share their initial ideas and observations.	25-30 minutes	Whole group
Share	Studens share their initial thoughts about how Moro Canyon has changed over time.	5 minutes	Whole group
Reflect	In their science journals, students reflect on whether they think it is important to protect Moro Canyon.	5-10 minutes	Individual

Materials

- Science Journals and pencils (1 per student)
- Smartphone to join Mentimeter poll at ***menti.com*** (1 per instructor)

Before You Start Teaching

- Make sure you have the link to join the live field trip with Crystal Cove Conservancy on Zoom. Live field trips can be booked by contacting ***kaitlin@crystalcove.org***.

- Make sure each student has a notebook to use as a Science Journal for the duration of Project Crystal. You can purchase notebooks, or have students create them by folding and stapling together blank pieces of paper. Just make sure notebooks have around 30-50 pages each.

  If you have time, you can get students started with setting up a science journal and making observations before the live Zoom using our Explore at Home: Nature Observation activity on our website: ***https://crystalcove.org/nature-observations/***

- Open up menti.com on your smartphone, or any device separate from the one you will be using to livestream the field trip. Crystal Cove Conservancy will share the code to join the poll at the beginning of the field trip.

Learning Sequence

Launch

Welcome to Project Crystal! (5 minutes)

1. Before joining the live field trip, tell the students that they have been invited by Crystal Cove Conservancy to help with an environmental problem in Crystal Cove State Park. Let them know that today, they will get to meet someone from Crystal Cove to learn more about the problem and how they can help!

2. Join the live video field trip with the provided link, and Kaitlin from Crystal Cove Conservancy will welcome the group to the park!

Explore

Exploring Moro Canyon's Changing Landscape (25-30 minutes)

1. During the live field trip, Kaitlin will invite the students to compare two types of landscapes in Moro Canyon - coastal sage scrub habitat and the degraded landscape dominated by black mustard - and share their observations and initial ideas. She'll also introduce them to the idea of plant adaptations, or how some plants in Moro Canyon are adapted to survive the hot, dry conditions.

2. In order to share students' ideas, Kaitlin will prompt students to answer questions for polls in a platform called Mentimeter, as well as sharing ideas in the chat. Students can relay their ideas and questions to instructors who can type their answers into menti.com or into the chat on Zoom.

Share

Thinking about Moro Cnanyon's Changing Landscape (5 minutes)

1. After making observations of the two habitat types, Kaitlin will invite the students to share any initial ideas they have about why the landscape has changed. Type any ideas the students in your group share into the chat.

2. Finally, Kaitlin will introduce the problem that the students can help with! We want to turn the degraded black mustard fields back into coastal sage scrub, and students can help with that process by studying the plants in their garden!

Reflect

Reflecting on Session 1 (5-10 minutes)

1. After the live field trip, let the students know that we will be spending the next few weeks helping Crystal Cove by conducting an investigation in their gardens! We'll learn more tomorrow, but for now, tell the students to take a moment to reflect on their own. Ask them to answer in their science journals, "Do you think Moro Canyon is a place worth protecting? Why or why not?"

2. Finally, if you are able, thank the group for their time today. Tell them that when you come back next, they will start diving deeper into the specific research project they will be helping with in Crystal Cove State Park!