Crystal Cove® CONSERVANCY

Session 6: Collecting Data

Focus: Collecting Data
Grade Level: 7-12
Session Length: 45-60 minutes

Driving Questions

- How can we collect data to see if the Crystal Cove SMCA is changing over time?

NGSS Links

- Planning and Carrying Out Investigations

Systems Thinking Characteristics

- Identifying Hidden Dimensions of the System

In the sixth session of the MPA Exploration, student research teams take part in a virtual expedition to the Crystal Cove SMCA and help to record data for the three monitoring projects.

After a short introduction to the virtual expedition, research teams explore Newport Landing's fishing vessel, Western Pride, through an interactive Thinglink. As they move around the vessel, they meet the research team members and observe the process of collecting data. Each specialist then breaks off to help record and process data for the fish monitoring, plankton monitoring, and water quality monitoring projects.

Learning Outcomes & Assessments

By the end of this module, students will be able to...	*You can assess this using...*
1. *Describe* the process of collecting scientific data for the three monitoring projects.	Field notebook reflection
2. *Record* and process data for their assigned monitoring project.	Field notebook notes

Session Overview

Section	Description	Length	Format
Launch	Holly welcomes research teams to the virtual field expedition during a short video.	5 minutes	Whole class
Explore	Students explore *Western Pride* virtually through a Thinglink as they observe data collection and then help to process samples for their specialized research project.	30-40 minutes	Individual
Share	Students debrief on their experiences with their research team.	5-10 minutes	Research teams
Reflect	Students reflect on their experience during Session 6.	5 minutes	Individual

Virtual Materials

- Session 6 Google Slides Presentation: **https://bit.ly/375GnjS**
- Session 6 Field Notebook template (optional): **http://bit.ly/2LNmcPx**
- Field Expedition Thinglink: **http://bit.ly/2Wohr0G**
- Data Processing Resources
    - Fish Data Processing: **http://bit.ly/3nILfRW**
    - Plankton Data Processing: **http://bit.ly/2WDg5iV**
    - Water Quality Data Processing: **http://bit.ly/2WGxirE**

Each student will need...

- A device with internet access (a computer, smartphone, or tablet will all work!)
- Field notebook and pencil

Before You Start Teaching

- Copy over the ***Session 6 Slideshow*** for your chosen platform to your own Google Drive account. Test to make sure that the videos work. (If not, you may have to check the permissions on the Crystal Cove Conservancy Youtube Account.)

- Take a few minutes to explore the Thinglink and the Data Processing resources for each project. Most of the session should be self-guided for students, but you can check to see if there are any parts where you may need to offer specific assistance.

Learning Sequence

Launch

Getting Ready to Collect Data! (5 minutes)

1. Open the ***Session 6 Slideshow*** and play the video on ***Slide 2*** for your class. In this video, Holly will introduce the virtual field expedition that students will take part in during Session 6.

2. After watching the video, move on to ***Slide 3***, which gives an overview of what students will do and learn during Session 6.

Explore

Virtual Field Expedition (30-40 minutes)

1. Advance ***to Slide 4*** and play the video. Holly will give the research teams specific instructions for what to expect as they explore the virtual field expedition: As they move through the Thinglink, they can click on the various people and pieces of equipment to see each monitoring project in action. When they get to their specialized project (fish monitoring, plankton monitoring, or water quality monitoring), they will find a link that will take them to Crystal Cove Conservancy's website where they can help record and process data from our most recent monitoring cruise.

2. Once the video is done, move on to ***Slide 5***. Give students any additional instructions and let them access the Thinglink link to begin exploring!

3. Give students 25-35 minutes to explore the Thinglink and assist with their assigned data collection project. This can take place during class time or independently outside of class.

Share

Sharing Our Monitoring Projects (5-10 minutes)

1. Open ***Slide 6*** and ask students to regroup with their research teams. Ask them to describe what they found during their monitoring project.

- What kind of data did you process?
- What did you notice? Was there anything that surprised you?
- What will you need to do next to see if the Crystal Cove SMCA is changing over time??

2. If there is time, bring the whole class back together. Ask students to briefly recap their experience on the virtual monitoring cruise.

Remind students that our goal is to understand whether and how the Crystal Cove SMCA is changing over time, so that we can get a sense as to whether the MPA regulations are starting to work. Invite students to share their thoughts on possible next steps. Elevate ideas that today's data is only one snapshot -- we'll have to look at the extended data set, which has been tracking these same indicators for years, to really see how the SMCA's ecosystem is changing over time.

Reflect

Reflecting on Session 6 (5 minutes)

1. At the end of the discussion, advance to ***Slide 6*** in the slideshow and play the video, where will recap the experience on the virtual field expedition and then ask students to spend a few minutes reflecting.

2. Move on to the final slide, which will share reflection questions. Ask students to spend five minutes reflecting on their experiences today in their field notebook.

3. Finally, thank the class for their time today. Tell them that when you gather again, they will get a chance to analyze the full data sets to determine whether the Crystal Cove SMCA's ecosystem is changing over time!