WELCOME TO ALTASEA

Location: Door 8 Berth 58. 2451 South Signal St., Berth 58, San Pedro, CA 90731

We are excited that you and your students will be joining us! Here are a few things to know before your tour:

WHAT TO BRING

- Closed-toed shoes (be prepared to walk 1-2 miles throughout the 35-acre campus)
- Light jackets and sunscrees
- Lunch if you plan to stay
- Pages 6-7 of this packet (if you want)

CODE OF CONDUCT

- 1. Students must stay in their groups under supervision. Groups must be kept together within eyesight.
- 2. School chaperones are responsible for student behavior and are expected to provide appropriate guidance and discipline.
- 3. School chaperones must accompany students to the bathroom as needed during the rotation below. A max of 5 students are allowed in the bathroom at a time.

WHARF SIDE SAFETY

• Stay alert — AltaSea is still under development. • There are no safety rails between the wharf and the ocean- please keep at least 3 feet back from the water’s edge. • Partners may have equipment near the paths. • No running, leaning, or touching equipment unless invited. • Watch your step — some areas may be uneven or wet. • If something falls in the water, don’t reach or jump in — alert staff right away. • Follow staff and chaperone directions at all times. • Safety comes first — protect yourself, your students, and the ocean environment.

TIMELINE

- 10:00am -10:10am – Students arrive- Welcome & Group Photos (bathroom trip if needed)
- 10:10am-10:20pm- Large group AltaSea Introduction
- 10:20am-12:00pm-Separate into smaller groups and visit AltaSea Partners and the hands-on exploration area.
- 12:00pm-1:00pm- Lunch time outdoors (weather permitting) Bathrooms to wash hands are available in Berth 58.
- 1:00pm- Students and chaperones pack up and depart

ALTASEA FIELD TRIP

Get ready for your upcoming field trip at AltaSea!

WHAT IS ALTASEA?

AltaSea is an **Innovation hub** for the **Blue Economy**

But what does that mean?

- **Innovation hub**: A place where people work together to create new ideas and solve problems.
- **Blue Economy**: jobs and businesses connected to the ocean that help people while also helping protect the ocean.

WHERE IS ALTASEA?

AltaSea is located at the **Port of Los Angeles**

- The **Port of Los Angeles:** The Port of Los Angeles is a busy place where ships bring goods from around the world. It is also home to people working in ocean science, technology, and other ocean-related jobs.

WHAT IS ALTASEA'S MISSION?

AltaSea's mission is to bring people together to create new ideas that help the ocean and our planet. AltaSea supports science, technology, education, and ocean-related jobs while inspiring young people to help create a healthier future.

HERE IS A VIDEO TO LEARN EVEN MORE ABOUT ALTASEA!

WHAT WILL WE DISCOVER

Get ready for your upcoming field trip at AltaSea!

Answer these questions before your field trip to get ready for your visit to AltaSea

WHAT CAREERS DO YOU THINK EXIST IN THE BLUE ECONOMY?

WHAT DO YOU HOPE TO LEARN?

WHAT TECHNOLOGY DO YOU THINK YOU'LL SEE?

WHAT QUESTIONS DO YOU HAVE BEFORE YOUR TRIP?

BLUE ECONOMY CAREERS

Exploring career pathways is a key part of AltaSea's mission. Take a look at just a few of the exciting careers that help drive the Blue Economy and discover how today's students can become tomorrow's ocean innovators.

MARINE ENGINEER

What They Do

Marine engineers design, build, and maintain ships, underwater vehicles, renewable energy systems, and other technologies that operate in or on the ocean. They develop innovative solutions to improve transportation, sustainability, and ocean exploration.

Education Needed

A bachelor's degree in marine engineering, mechanical engineering, or a related engineering field. Some careers may require a master's degree or professional engineering (PE) licensure.

Why It's Important

Marine engineers help create safer, more efficient, and more sustainable technologies that support ocean research, clean energy, global trade, and the protection of marine environments. Their work plays a vital role in advancing the Blue Economy.

SUSTAINABILITY CONSULTANT

What They Do

Sustainability consultants help businesses, organizations, and communities reduce their environmental impact. They evaluate current practices, identify opportunities for improvement, and develop strategies that promote sustainability while meeting organizational goals.

Education Needed

A bachelor's degree in environmental sustainability, environmental science, business, engineering, or a related field. Some positions may also require certifications or a master's degree.

Why It's Important

Sustainability consultants help organizations make informed decisions that protect natural resources, reduce waste and emissions, and create more environmentally responsible practices. Their work supports healthier communities, resilient businesses, and a more sustainable future.

AND THERE ARE COUNTLESS MORE

- MARINE BIOLOGIST
- AQUACULTURE TECHNICIAN
- COMMERCIAL DIVER
- MARINE MECHANIC
- PORT OPERATIONS MANAGER
- ENVIRONMENTAL EDUCATOR
- MARINE POLICY ANALYST
- BLUE ECONOMY ENTREPRENEUR
- CLIMATE SCIENTIST
- GIS (GEOGRAPHIC INFORMATION SYSTEMS) SPECIALIST
- PORT OPERATIONS MANAGER
- ENVIRONMENTAL POLICY ANALYST
- MARKETING SPECIALIST
- ENVIRONMENTAL ENGINNNER
- ETC.

VOCABULARY

Below are some words or phrases you might hear on the tour that are helpful to know

AQUACULTURE

- THE FARMING OF FISH, SHELLFISH, SEAWEED, AND OTHER WATER PLANTS OR ANIMALS FOR FOOD AND OTHER PRODUCTS.

GAMETOPHYTE SEED BANK

- A COLLECTION OF TINY YOUNG KELP CELLS THAT ARE STORED SO THEY CAN BE GROWN LATER TO HELP RESTORE KELP FORESTS.

RESTORATION

- THE PROCESS OF HELPING DAMAGED ECOSYSTEMS, LIKE FORESTS OR OCEANS, RECOVER AND BECOME HEALTHY AGAIN.

BIOFUEL

- A FUEL MADE FROM PLANTS, ALGAE, OR OTHER NATURAL MATERIALS INSTEAD OF FOSSIL FUELS LIKE OIL OR GAS.

KELP

- A LARGE TYPE OF BROWN SEAWEED THAT GROWS IN UNDERWATER FORESTS AND PROVIDES FOOD AND SHELTER FOR MANY OCEAN ANIMALS.

BLUE FOODS

- FOODS THAT COME FROM OCEANS, LAKES, AND RIVERS, SUCH AS FISH, SHELLFISH, AND SEAWEED.

ENVIRONMENTAL STEWARDSHIP

- TAKING CARE OF THE ENVIRONMENT BY PROTECTING NATURAL RESOURCES AND MAKING CHOICES THAT HELP KEEP THE EARTH HEALTHY.

DESALINATION

- THE PROCESS OF REMOVING SALT FROM SEAWATER TO MAKE IT SAFE TO DRINK OR USE.

MARINE ROBOTICS

- ROBOTS DESIGNED TO WORK IN OR AROUND THE OCEAN TO EXPLORE, COLLECT DATA, OR COMPLETE UNDERWATER TASKS.

SUSTAINABILITY

- USING NATURAL RESOURCES IN A WAY THAT MEETS OUR NEEDS TODAY WITHOUT HARMING THE ENVIRONMENT OR LIMITING RESOURCES FOR FUTURE GENERATIONS.

RENEWABLE ENERGY

- ENERGY THAT COMES FROM NATURAL SOURCES THAT CAN BE USED OVER AND OVER AGAIN, LIKE SUNLIGHT, WIND, AND OCEAN WAVES.

BIODIVERSITY

- THE VARIETY OF DIFFERENT PLANTS, ANIMALS, AND OTHER LIVING THINGS FOUND IN AN ECOSYSTEM.

FILL THIS PAGE OUT DURING THE TOUR TO KEEP TRACK OF WHAT YOU LEARN

New vocabulary

Observations

Career you learned about

Questions

SCAVENGER HUNT

🌎 ALTASEA

- □ AN ABALONE SHELL
- □ AN UNDERWATER ROBOT
- □ A SOLAR PANEL
- □ SOMETHING THAT HELPS FIGHT CLIMATE CHANGE (NAME IT:_____)
- □ A PIECE OF OCEAN-THEMED ART
- □ A BOAT

🌿 PLANTS & ALGAE

- □ GIANT PACIFIC KELP (LONG, BROWN ALGAE, VERY COMMON)
- □ OYSTER-THIEF (LIGHT BROWN, BUBBLY ALGAE FOUND ON THE SIDE OF THE DOCK)
- □ SEA LETTUCE (GREEN ALGAE- LOOKS LIKE LETTUCE)
- □ SARGASSUM (LOOKS LIKE MINIATURE GIANT PACIFIC KELP)

🐦 COASTAL BIRDS

- □ WESTERN GULL (BIG WHITE BIRD WITH A YELLOW BEAK AND GRAY WINGS – LOUD!)
- □ BROWN PELICAN (HUGE BIRD, DIVES HEADFIRST FOR FISH!)
- □ GREAT BLUE HERON (BLUISH GRAY) OR SNOWY EGRET (WHITE) (LONG LEGS)
- □ PIGEON (YES, THEY LIVE AT THE DOCKS TOO!)

🐟 MARINE VERTEBRATES AND INVERTEBRATES

- □ OCHRE STARS (ALONG FLOATING DOCKS OR PILINGS- RED OR PURPLE WITH WHITE BUMPS)
- □ MUSSELS (BLUE-BLACK SHELLS, GROWING IN BIG GROUPS ON PILINGS)
- □ FISH (ANY KIND – SARDINES, GOBIES, SMELT, ETC.)
- □ OYSTERS (OFTEN SEEN ON THE SIDES OF PIER PILINGS)
- □ BARNACLES (WHITE CRUSTY PATCHES ON DOCKS OR BOAT HULLS)

🐋 BONUS MARINE MAMMAL SIGHTINGS

- □ SEA LION (LARGE MARINE MAMMAL YOU MIGHT HEAR IT BEFORE YOU SEE IT!)
- □ HARBOR SEAL (ROUNDER FACE, BIGGER EYES, OFTEN QUIETER THAN SEA LIONS)

REFLECTION

Write about three interesting facts you learned, two careers you might be interested in, and one thing you can do to help protect our ocean.

FOLLOW-UP ACTIVITIES

Teachers: Feel free to choose which activity works best for you and your students.

Learning Focus: Students investigate environmental challenges, engineering solutions, and careers within California's Blue Economy.

CA NGSS Connections:

- MS-LS2
- MS-ESS3
- MS-ETS1

Activity 1: Blue Economy Career Research

Students select one Blue Economy profession and research:

- Job responsibilities
- Education pathway
- Skills needed
- Salary range
- How the career benefits the ocean

Students create a one-page paper, infographic or presentation and share it with the class

Activity 2: Engineering for Renewable Energy

Students design a device that captures energy from waves or tides.

Include:

- Labeled diagram
- Materials
- How electricity is generated
- Possible engineering challenges

Students explain how their design minimizes impacts on marine life.

Activity 3: Reflection

Students choose and research one oceanic problem including but not limited to:

- Global Warming
- Ocean Acidification
- Plastics and Microplastic Pollution
- Toxic Run-off
- Coral Reef Decline
- Invasive Species
- Overfishing

Students answer the question:

"How can science and technology help solve this problem facing our oceans?"