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
- Lunch if you plan to stay
- Sunscreen
- Pages 6 & 7 of this packet and pens or pencils (if you choose)

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
- 10:10am-10:20pm- Large group AltaSea Introduction
- 10:20am-12:00pm-Separate into smaller groups and visit AltaSea Partners and the dock to drive the ROV’s.
- 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

Prep your students for your upcoming field trip to AltaSea!

WHAT IS ALTASEA?

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

- **Innovation hub**: A place where scientists, engineers, entrepreneurs, educators, and other professionals collaborate to develop new ideas, technologies, and solutions.
- **Blue Economy**: Jobs, businesses, and industries connected to ocean resources that contribute to economic growth while supporting healthy and sustainable ocean ecosystems.

WHERE IS ALTASEA?

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

- The largest seaport in the United States and a major center for international shipping and trade. In addition to maritime industries, the port supports research, education, technology, and innovation related to ocean science and the Blue Economy.

WHAT IS ALTASEA'S MISSION?

AltaSea's mission is to bring together science, business, technology, and education to develop solutions to major ocean and environmental challenges. By advancing the Blue Economy, supporting job creation, and inspiring the next generation, AltaSea works toward a more sustainable, just, and equitable future.

HERE IS A VIDEO TO LEARN EVEN MORE ABOUT ALTASEA

WHAT WILL WE DISCOVER

Before your visit, consider what you already know about the Blue Economy and what you hope to discover at AltaSea.

- WHAT KINDS OF CAREERS DO YOU THINK ARE CONNECTED TO THE BLUE ECONOMY? WHY?

- WHAT OCEAN OR ENVIRONMENTAL CHALLENGES ARE YOU INTERESTED IN LEARNING MORE ABOUT?

- WHAT TYPES OF TECHNOLOGY DO YOU THINK ARE BEING DEVELOPED TO ADDRESS CHALLENGES FACING OUR OCEANS?

- WHAT QUESTION WOULD YOU LIKE TO ASK A SCIENTIST, ENGINEER, ENTREPRENEUR, OR OTHER BLUE ECONOMY PROFESSIONAL?

BLUE ECONOMY CAREERS

The Blue Economy includes careers across science, engineering, technology, business, policy, education, and many other fields. Explore two examples below and consider how your own interests and skills could connect to a career involving the ocean.

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. RESEARCH THE CAREER YOU ARE INTERESTED IN MOST.

- 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 ENGINEER
- ETC.

VOCABULARY

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

AQUACULTURE

- THE CONTROLLED CULTIVATION OF AQUATIC ORGANISMS, INCLUDING FISH, SHELLFISH, AND SEAWEED, 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 ASSISTING DAMAGED OR DEGRADED ECOSYSTEMS IN RECOVERING THEIR HEALTH, BIODIVERSITY, AND ECOLOGICAL FUNCTIONS.

BIOFUEL

- RENEWABLE FUEL PRODUCED FROM BIOLOGICAL MATERIALS SUCH AS PLANTS AND ALGAE AS AN ALTERNATIVE TO FOSSIL FUELS.

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.

DESALINIZATION

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

MARINE ROBOTICS

- THE DESIGN AND USE OF ROBOTIC SYSTEMS THAT OPERATE IN MARINE ENVIRONMENTS TO CONDUCT RESEARCH, COLLECT DATA, EXPLORE, OR PERFORM UNDERWATER TASKS.

SUSTAINABILITY

- MEETING CURRENT ENVIRONMENTAL, SOCIAL, AND ECONOMIC NEEDS WITHOUT COMPROMISING THE RESOURCES AND OPPORTUNITIES AVAILABLE TO 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 LIVING ORGANISMS WITHIN AN ECOSYSTEM, INCLUDING DIVERSITY AMONG SPECIES AND THEIR HABITATS.

USE THIS PAGE DURING YOUR TOUR TO RECORD OBSERVATIONS, NEW IDEAS, CAREER CONNECTIONS, AND QUESTIONS.

New Vocabulary & Concepts

Observations & Connections

Career or Career Pathway

Questions for Professionals

ALTASEA SCAVENGER HUNT

🌎 AT 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!)
- □ CORMORANT (ALL BLACK- OFTEN SEEN DIVING TO CATCH FISH)
- □ 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)

REFLECT ON YOUR VISIT TO ALTASEA

Write about three interesting facts you learned, two careers you might be interested in, and one ocean challenge that is the most urgent to you.

FOLLOW-UP ACTIVITIES

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

Learning Focus: Students evaluate real-world environmental issues, emerging technologies, and careers shaping the future of the Blue Economy.

CA NGSS Connections:

- HS-ESS2
- HS-ESS3
- HS-LS2
- HS-ETS1

Activity 1: Blue Economy Career Pathway Project

Students investigate one career they discovered during their AltaSea visit.

Include:

- Daily responsibilities
- Required education or training
- College or certification options
- Typical salary
- Future job outlook
- Why the career matters

Students conclude by sharing the career with the class.

Activity 2: Ocean Innovation Proposal

Students imagine they have received funding to solve one ocean challenge.

Possible topics:

- Plastic pollution
- Renewable energy
- Ocean exploration
- Sustainable seafood
- Marine biodiversity

Their proposal can include:

- Researching companies and organizations advancing ocean innovation
- Problem statement
- Proposed solution
- Technology needed
- Expected environmental benefits
- Potential challenges

Students present their ideas to the class (and can share it with AltaSea).