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What is A Discovery Cruise?

Hands-on Discovery Cruises emphasize fundamental skills of inquiry through systematic, first-hand observations of natural phenomena and collections of data. Each 2-hour cruise will have your students actively participating in learning the major disciplines of oceanography. Manipulating research equipment, sampling, observing and handling (when appropriate) sea life they put into our live tank are all part of each cruise. As our "guest scientists" cruise from station to station, professional scientists, educators and mariners encourage inquiry and discovery

Core Program
Time during the cruise is divided among three stations. Students are given the appropriate data sheets for the work they will be doing and everyone actively participates in this mini ocean research voyage. Teachers and/or group leaders can use the data collected in follow-up sessions and the data will be used by OceanQuest to compile a baseline database for future use. This data may show students trends in fish populations, seasonal plankton abundance, temperature and salinity variances, and other basic oceanographic details from the study area.

Stern
Students are concentrating on the biological aspects of oceanography. This group puts out the plankton net to capture the various species of plankton present in the area. They may observe the setting of a bottom dredge or otter trawl that are towed to capture organisms that live near or on the ocean floor. The group observes and handles the diversity of life and makes observations about the diversity or lack thereof. A bottom grab is sometimes used to sample infauna (organisms which live in the bottom sediments).

Bow
Students are operating the instrumentation and equipment useful to study physical and meteorological oceanography. This group uses a water sampler to collect water to determine water temperature, density and salinity, enabling the group to see possible differences in the water character at different points within the water column. The group may be able to determine thermoclines and salinity gradients. A Secchi disk is used to determine turbidity and a Forel/Ule scale is used to determine the color of the water.

Cabin
Students explore basic chemistry of seawater. Here students will determine dissolved oxygen and carbon dioxide, pH, and salinity. These are the basic chemical parameters that affect the quality and diversity of life in the study area.

Attached is a list of alternative activities for the **Bow and Cabin** that can be substituted for the Discovery Cruise Core Program curriculum.

Please indicate your programming choice and return the form with your confirmation. Every effort will be made to accommodate your group

Group _____ Cruise Date_____

Cabin

Core Program

- ❑ **Chemistry**

Extended Biology

- ❑ Plankton study (Using the Flex-cam)
  - Adaptation
  - Camouflage
  - Diversity
  - Importance
- ❑ Invertebrate biology (Focus on one or two live animals)*
  - Life cycles
  - Habitats
- ❑ Sorting and classifying activity using shells*
- ❑ Fish anatomy and physiology (Brief dissection of a fin fish or squid)*
- ❑ Biodiversity – What is it and why must we conserve it? *

Pollution

- ❑ Natural vs. human induced
- ❑ Pollution* (activity) – How toxins move and accumulate in the food chain.

Navigation

- ❑ Plotting a course (How to read a chart and use plotting tools**)***
- ❑ Navigational aids (buoys, channel markers, GPS, etc.)

Bow

Core Program

- ❑ **Physical Science**

Extended meteorology

- ❑ Reading weather charts and predicting local weather*
- ❑ Wind chill and Relative humidity
- ❑ Cloud formation activity (Extension of water cycle)*

Navigation (See above)

- ❑ Determining speed and direction of a current using a current drifter. (Due to time requirements this activity will be completed in the cabin.)*

* Indicates guided inquiry activities appropriate for total group involvement. The remaining activities are more directed inquiry.