NAUTILUSLIVE.ORG
OCEAN EXPLORATION TRUST

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Science Lesson: Deep Ocean Coral Reefs

Objective: TLW explore characteristics and facts about coral and coral reefs in the deep sea IOT discuss the importance of coral for marine life.

Note: Corals in this activity are different from shallow, tropical corals in that they do not gather energy from the sun. Deep sea corals capture all of their food—sinking particles falling from shallow parts of the ocean—from currents with tentacles.

"Look Fors": TL uses vocabulary presented in the galleries, videos, and descriptions to further explore and discuss coral/coral reefs.

Key

TTW: The Teacher (Will)

TLW: The Learner (Will)

WG: Whole Group work

SG: Small Group work

IOT: In Order To

- TLW explore various corals and creatures of the Channel Islands NMS using the photo gallery at Nautilus Live. Using images and image descriptions, TTW lead the discussion of the various corals (e.g. size, color, shape). TT should focus on the image of the Bamboo Coral and Brittle Star. This is a ***symbiotic relationship*** (species behavioral adaptation) in which the survival of both species benefits from their connection—both animals have a greater rate of survival by working together.
- Brainstorm what types of coral TL would like to discover to further drive the focus of instruction as well (i.e. what coral need to survive and how certain species benefit from coral/coral reefs).

1. Engage

- TLW explore corals as TT continues to further the discussion of corals and coral reefs with the video: Colorful Corals of the Channel Islands NMS.
- TL is encouraged to document and record the various corals observed by E/V Nautilus researchers using the "Marine Species Showcase" documentation sheet (provided in *Additional Resources*). A more detailed Learn to Log - Data Logging Activity sheet may be used for ready learners.
- TLW record and label the name of four kinds of corals that observed in the video. During the discussion of corals, TL should note various characteristics of each coral (e.g. size, shape, color) that make them unique, as well as, any other marine life observed in the video that may be interacting with the corals.

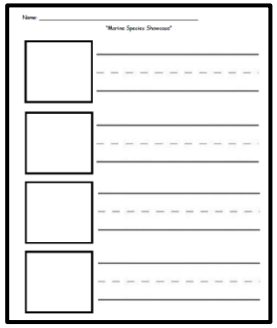
2. Explore

- Chenille Stems (Pipe cleaners)
- Clay dough

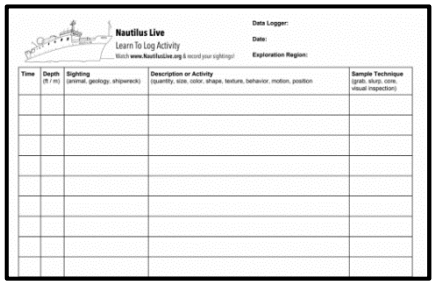
Supplies

Student Work

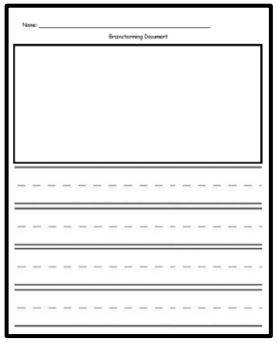
Marine Species Showcase



Learn to Log-Data Logging Activity



Brainstorming Document



- Until now, TL may be unaware what coral really is. Utilize A Springtime Coral Mystery to guide the discussion in which TL analyzes and infers ideas from the text to decide if corals are animals or plants.
- TT should pause as he/she is reading to guide the discussion.
- For more about corals: TTW read the following text from GetEpic.com- *Ocean Life Up Close: Corals* by Mari Schuh. TLW discuss any new information about the coral from both texts. This will guide our *Extension* task.

3. Explain

- TLW brainstorm and create a coral(s) and explain the makes it unique with species' survival adaptations (e.g. symbiotic relationships, habitat, features, eating patterns, etc.). TLW use information from the links, videos, texts and their imagination. Using the Brainstorm Document (provided in *Additional Resources*), TLW describe their ideas and write how it will survive in the ocean in this "Coral Reef Discovery".
- TLW model their coral (from the brainstorming document) using the provided supplies. TL should discuss the characteristics about their created coral with a partner or large group.

4. Extend

Supporting essential questions that can be used to evaluate student understanding:

- How would you compare coral to other marine animal species? Marine plant species?
- How does knowing that corals gather food from the water help E/V *Nautilus* explorers understand coral reefs on the seafloor?
- How would you describe the importance of coral symbiotic relationships?
- In your own words, how would you describe the impact of the Sea Cucumber on the ocean and coral reefs?

5. Evaluate

Animal Showcase:

Inspire your young explorer by showcasing a new ocean animal each class/club meeting.

For this lesson, TT may showcase the *Sea Cucumber* with links below. This animal was chosen because, similar to deep sea corals, it eats only food which has sunk to the seafloor.

https://nautiluslive.org/video/2014/08/27/sea-cucumbers-deep

https://www.youtube.com/watch?v=vsLBOkYLLeI

https://www.youtube.com/watch?v=LO1epZE7js4

Additional Resources and Links

- Record the species mentioned in the video: *Colorful Corals of the Channel Islands National Marine Sanctuary-video* (*Explore*), on the Marine Species Showcase worksheet. This is a resource that can be utilized to document species encountered throughout the **Animal Showcase.**
- Record brainstorming ideas and blueprints for "Coral Reef Discovery" STEM (*Extend*) on the Brainstorming Document.
- GetEpic.com- *Ocean Life Up Close: Corals* by Mari Schuh https://www.getepic.com/app/read/41679
- TT should reference the following link as a model for the STEM activity in *Extend* https://www.powerfulmothering.com/coral-reef-craft-for-kids/