NAUTILUSLIVE.ORG
OCEAN EXPLORATION TRUST

Author: Jason McGee

Science Lesson: Exploring E/V *Nautilus*

Objective: TLW explore jobs, life, and activities aboard E/V *Nautilus* IOT identify the roles of the various scientist aboard E/V *Nautilus*.

"Look Fors": TL is using vocabulary presented in the Ship to Shore video conference to further explore and discuss the roles of various scientists aboard E/V *Nautilus*.

Key

TTW: The Teacher (Will)

TLW: The Learner (Will)

WG: Whole Group work

SG: Small Group work

PPT: PowerPoint

IOT: In Order To

- Boat layout diagram with nautical positional terms
- Computer/Laptop with internet connection
- Microphone
- Video Camera

Supplies

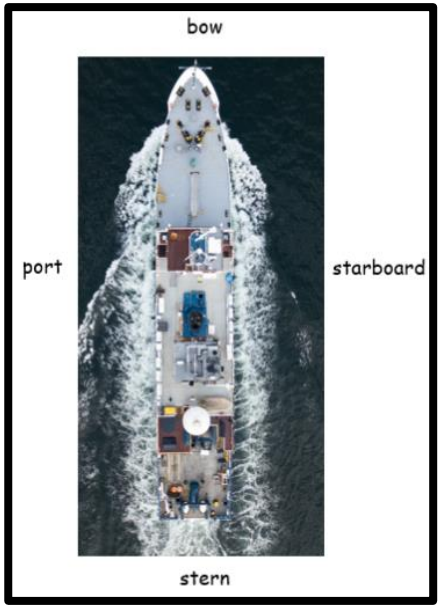
TTW show TL various photos and videos of deep-sea discoveries made by the team on Exploration Vessel (E/V) *Nautilus* using https://nautiluslive.org/. Using the provided photos and/or videos, TTW lead the discussion of the job of an **oceanographer** (studies the ocean make-up, various systems in the ocean) and a **marine biologist** (studies the organism within the ocean: life expectancy, patterns, characteristics). This will be a great time to brainstorm new ideas and potential jobs TL would like to discover to further drive the focus of instruction as well (e.g. ROV engineers, video engineers, the ship's crew, etc.)

1. Engage

TLW explore https://nautiluslive.org/ as TT continues to further the discussion of an **oceanographer** and a **marine biologist**. TT and TLW explore the tab: Science & Tech and the Corps of Exploration career pages on the Team Lab. This is a great start to understanding the descriptions of various scientists and STEM professionals that are needed to explore the ocean aboard E/V *Nautilus* (e.g. geologists, biologists, archeologists).

2. Explore

Student Work



One way that the roles of the various explorers aboard E/V *Nautilus* can be further explained is by TT inviting the scientists aboard E/V *Nautilus* to discuss ideas with TL in a live ship-to-shore video conference. These free programs last about 20 min. and TL may ask various questions to explore life aboard E/V *Nautilus*.

3. Explain

- To further explore ships and the resources a ship may provide, TTW read *Mighty Machines in Action: Ships* by Thomas K. Adamson on GetEpic.com (free download for educators).
- To further explore ships, TTW lead a "Simon Says" inspired ship-themed game. TTW provide TL with E/V *Nautilus* layout diagram with nautical positional words. TTW call out the various positional words and TLW move in the direction as if TL is on the boat.

4. Extend

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

- How is learning the nautical positional words beneficial to life aboard a ship/boat?
- Why do you feel it is necessary for E/V *Nautilus* to include so many various types of scientists on their expeditions?
- In your own words, how would you describe the impact of the Nautilus on the ocean and marine life?
- What other ways could the scientists aboard E/V *Nautilus* impact the ocean and marine life?

5. Evaluate

Animal Showcase:

To inspire your young marine biologists, it is suggested to showcase a new ocean animal each class/club meeting.

For this lesson, TT may showcase the "walking" *octopus* using the provided YouTube link.

https://www.youtube.com/watch?v=ebeNeQFUMa0

Additional Resources and Links

- GetEpic.com- *Mighty Machines in Action: Ships* by Thomas K. Adamson https://www.getepic.com/app/read/49157
- GetEpic.com- Machines at Work: Ships by Cari Meister https://www.getepic.com/app/read/11447
- Join the Corps of Exploration – a deep ocean exploration and research team who work aboard E/V Nautilus livestreaming discoveries and education resources for learners- https://nautiluslive.org/
- Ship Layout with Nautical Positional Words