Name:_____ Period: _____ Date: _____

Investigating Ocean Mysteries

Ocean exploration helps us better understand natural processes and life on Earth. It yields valuable new information every day, helps us manage resources and locate new resources.

Instructions

1. Put a checkmark next to mysteries found within national marine sanctuaries you'd like to investigate. Then rank your choices from 1–5 with numbers to the left of the check boxes.

Phenomenon / One Research Organization Investigating It

- ☐ Bioluminescent organisms in the deep sea / NOAA
- ☐ Challenges to salmon and their migration / NOAA
- ☐ Coral bleaching / NOAA
- ☐ Crown-of-thorns starfish overpopulation in American Samoa / NOAA
- ☐ Deep-sea corals / *Nautilus* Live (Ocean Exploration Trust)
- ☐ DNA from the seafloor / NOAA
- ☐ Humpback whales migrating to Hawai'i to breed / NOAA
- ☐ Hydrothermal vents / *Nautilus* Live (Ocean Exploration Trust)
- ☐ Life on Voyager Seamounts / *Nautilus* Live (Ocean Exploration Trust)
- ☐ Medicines derived from the ocean / NOAA
- ☐ Methane seeps / *Nautilus* Live (Ocean Exploration Trust)
- ☐ Microbial mats / *Nautilus* Live (Ocean Exploration Trust)
- ☐ Ocean acidification's impacts on Dungeness crabs / NOAA
- ☐ Octopus garden / *Nautilus* Live (Ocean Exploration Trust)
- ☐ Quicksands archaeology / NOAA
- ☐ Rocky reef habitats / *Nautilus* Live (Ocean Exploration Trust)
- ☐ Sea turtle eggs impacted by temperature / NOAA
- ☐ Shipwreck Ironton – Thunder Bay / *Nautilus* Live (Ocean Exploration Trust)
- ☐ Shipwreck – USS *Monitor* / NOAA
- ☐ "Sponge garden" / *Nautilus* Live (Ocean Exploration Trust)
- ☐ Vailulu'u seamount / NOAA
- ☐ Whale fall / *Nautilus* Live (Ocean Exploration Trust)
- ☐ "Yellow Brick Road" rock formation / *Nautilus* Live (Ocean Exploration Trust)
- ☐ Another ocean phenomenon:

_____

2. Tell your teacher your first choice. You may need to research one of your other choices if your first choice has already been selected.

   You will be creating a presentation about your assigned topic and why it is important in understanding the ocean and how it works.

NOAA Diver Kelly Gleason injects a crown-of-thorns starfish with ox bile. Killing the starfish protects corals. Photo: Greg McFall / NOAA

3. Let's investigate!

Research your topic. Record what you learn and your ideas about the phenomenon below or in science notebooks. Use sentences and/or pictures to help you prepare for your presentation.

a. What is the specific phenomenon explorers / scientists observed?

b. How do scientists explain this phenomenon? What does it tell us about the ocean? How does it impact humans?

c. Why is this phenomenon important to understand? In other words, how will scientists use this information?

d. Does this research shed light on how humans are changing the ocean environment? If yes, how?

e. Was this phenomenon observed during an ocean expedition? If so, what was the purpose of the expedition(s)?

f. What types of scientists or other experts are involved? How are individuals working together to explore?

g. What surprised you about this phenomenon or the related expedition?

h. What questions do you have about this discovery?

i. Why do we explore the ocean?

j. How does your phenomenon relate to the idea that "the ocean is largely unexplored?"