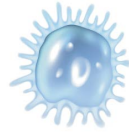


Name: _____

Welcome to the Museum! In the *Unseen Oceans* exhibition, you will explore how scientists study the oceans and the organisms that live there.



1. Mysterious Drifters

In this section, you will investigate **plankton**, free-floating marine organisms that drift with ocean currents.

Why is plankton an important part of the marine ecosystem?

Draw and **label** one of the plankton organisms in the exhibition.

Name of organism:

Notes / Observations / Questions:

SCIENTIST AT WORK



Watch the *Scientist at Work* video about Kelly Benoit-Bird.

"I spend a lot of time aboard ship. There, when things break you have to fix them yourself, and I like the challenge."

–Kelly Benoit-Bird

How does Kelly study organisms in the ocean?

What did Kelly do as a child that is now useful to her work as an oceanographer?

2. Secret Lives

Some marine organisms are **biofluorescent**. They have molecules in their bodies that absorb light and then reemit it.

Draw and **label** one of the biofluorescent animals in the exhibition.

Name of organism:

Notes / Observations / Questions:

Why is biofluorescence helpful to marine organisms?

SCIENTIST AT WORK

Watch the *Scientist at Work* video about John Sparks and Dave Gruber, and **experiment** with the camera interactive.

What tools do John Sparks and Dave Gruber use to study fluorescent sharks?

3. Encountering Giants

Whales are some of the most charismatic marine animals, but we know relatively little about them.

SCIENTIST AT WORK

Watch the *Scientist at Work* video about Jeremy Goldbogen and Ari Friedlaender, and **examine** the whale trackers on the table.

"Curiosity drives a lot of our research. We want to understand how these enigmatic gigantic animals live."

– Jeremy Goldbogen



List some of the problems with the design of the first tracker, the "Fickle Beast"	List how scientists have improved upon the first prototype in the Version 3.0 tracker

4. Going Deep

The **deep ocean** is mostly explored from afar using sound waves, radar, and lasers.

Explore the topography interactive in the middle of the room, in particular, the section titled "Hidden."

Describe the Hudson Canyon, how it was made, and its biodiversity today.

SCIENTIST AT WORK

Watch the *Scientist at Work* video about Kaitlyn Becker, and **examine** the robotic gripper on the table.

Why was the robotic gripper developed? How does it help scientists study the creatures of the deep?



5. Taking a Dive

Observe the styrofoam cups and plexiglass display.

Traveling to the deep involves major challenges. What are some of those challenges and how did scientists tackle them?

SCIENTIST AT WORK

Read about Dawn Wright next to the plexiglass display.

What is her job? Why is her work important?

6. Vital Abundance

From overfishing to altering Earth's climate, **Human activity** is changing the ocean and threatening the organisms that live there. Scientists are working to understand how we are affecting the ocean ecosystems and how we can stop their degradation.

Watch the Conservation Scientist stories about sustainable fishing, protecting marine habitats, and addressing climate changes.

Choose one story and **record** the following:

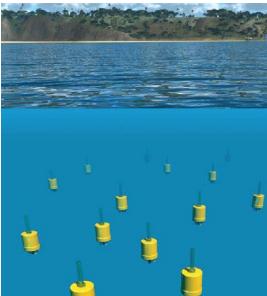
Name of scientist:

Description of the threat:

How is this conservation scientist working to address the threat?

SCIENTIST AT WORK

Explore the *Scientist at Work* display about Jules Jaffe.



"I love the experience of discovery-when you know you are literally the first person on the planet to observe something."

– Jules Jaffe

How are mini-autonomous underwater explorers (m-AUEs) helpful in studying the ocean?
