Aquarium Webcam Resource Kit
Lesson Outline: *Ocean Drifters*
3rd-5th Grade

Next Generation Science Standards:

- **3-LS1-1** Develop models to describe that organisms have unique and diverse life cycles, but all have in common birth, growth, reproduction, and death.
- **4-LS1-1** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
- **5-LS2-1** Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Key Words:

- **Consumer:** an organism that derives the organic compounds and energy it needs from the consumption of other organisms
- **Decomposer:** an organism, especially a soil bacterium, fungus, or invertebrate, that decomposes organic material.
- **Food Web:** a system of interlocking and interdependent food chains
- **Phytoplankton:** plankton consisting of microscopic plants
- **Plankton:** the small and microscopic organisms drifting or floating in the sea or fresh water
- **Producer:** an organism that produces organic compounds from simple substances such as water and carbon dioxide
- **Zooplankton:** plankton consisting of small animals and the immature or baby stages of larger animals.

Supplies:

- *Ocean Drifters* Video
- *Ocean Drifters* Worksheets
- Computer & projector to show Sea Jellies Webcam: http://www.aquariumofpacific.org/exhibits/webcams

Step 1: Discussion

- Ask the class the following question. Answer individually or in pairs:
    - What would you see if you were to use a microscope to investigate ocean water?

If you use a microscope to investigate ocean water, you may find plankton! Plankton is a name used for animals, plants, and algae that drift in the ocean's currents.

Step 2: Watch the *Ocean Drifters* Video

- Post Video Prompt:
    - Not all animal plankton stays small, what are some examples of plankton that grow into larger animals?
        - *Lobsters, sea stars, and barnacles are examples of plankton that hatch from eggs and drift until they grow large enough to settle on the bottom of the ocean.*
        - *Fish larva hatch from eggs and drift until they are large enough to swim against ocean currents.*
    - Why is plankton important to our oceans and us?
        - *Many ocean food webs start with plankton.*
        - *Phytoplankton (plant/algae plankton) produces more than half of all the oxygen on the planet.*

Step 3: Use the Sea Jelly Webcam & *Ocean Drifters* Worksheets

- Encourage students to list or draw their observations.
    - Look closely at movement, colors, shapes, patterns. If you have time compare the jellies to another webcam animal.
    - What are students curious about? Have students record their questions.
    - In pairs or groups have students share their observations and questions.
        - Encourage them to use "I notice _____" as a sentence starter when sharing observations, or "I wonder_____" when sharing questions.
    - Pick a few questions to further investigate.
- Have students identify the parts of the moon jelly and the Pacific sea nettle.
    - What are some differences and similarities they notice about the moon jelly and the Pacific sea nettle?
    - Why would they have differently sized tentacles?
        - *The size of the tentacles matches the size of the food they catch. Moon jellies eat very small plankton and Pacific sea nettles eat larger plankton.*
    - What did you think the bell is used for?
        - *The main body of the sea jelly is called a bell. The bell contains main organs like the stomachs (they can have multiple and are a horseshoe shape). The bell also contains the main circular muscle that squeezes and releases to help the jelly pulse through the water.*
- Extension: Food Web: What's on the Menu?
    - As a class, introduce and discuss producers, consumers, and decomposers

- Students will explore a kelp forest by making predictions about how energy moves through a food web. Using the worksheet, students will draw arrows between predators and prey/energy source.
- As a bonus, student can label organisms as producers, consumers, and decomposers
- Have students pair up and discuss their answers

Fun Facts:

- A group of jellies is called a *Smack.*
- Jellies do not have a brain or heart. They do have special light and gravity sensing organs to help them orient themselves in the water.

Resources

- Explore a kelp forest by using the Aquarium of the Pacific's Blue Cavern Webcam
- Find out more about sea jellies at the Aquarium of the Pacific's Animal Database: http://www.aquariumofpacific.org/onlinelearningcenter