

OIMB GK12 CURRICULUM

5th grade

60 minutes

JELLIES

Oregon Science Content Standards:

- 5.1L.1. Explain that organisms are composed of parts that function together to form a living system
- 5.2L.1. Explain the interdependence of plants, animals, and the environment, and how adaptation influences survival

Ocean Literacy Principles:

- 5. The Ocean supports a great diversity of life and ecosystems

Goal: Learn about jellies and the variety of jellies

Concepts:

- Plankton are any organism that gets pushed around by the ocean currents.
- Jellies are the largest plankton, and can be over 100 feet long.
- There is a great diversity of jellies.

Materials:

- Several kinds of jellies
- Buckets, cold seawater and aerators
- Collecting Permit
- Clear plastic containers to display jellies (or cups for small ones)
- PowerPoint on jellies and anemones
- Optional Jelly worksheet

<http://www.enchantedlearning.com/subjects/invertebrates/jellyfish/Jellyfishcoloring.shtml>

Background:

Jellies are the largest plankton at up to over 100 feet long. Most plankton are microscopic, but anything that cannot swim against a current is considered plankton. Though jellies do move by pulsing (contracting their bells), this is not strong enough to counter a current, so they are considered plankton. We call them jellies instead of jellyfish because they are not a kind of fish. Jellies are in a group called cnidarians, and are closely related to sea anemones which are also in this group. Jellies have a complex lifecycle that includes an anemone-like attached phase (polyp), and a jelly-like swimming phase called a medusa. What we think of as “jellyfish” is this medusa phase. Most jellies capture their prey and defend themselves using stinging cells called nematocysts. Nematocysts are coiled, barbed threads wound up in a capsule. When they are triggered (often by touch), the barbed thread springs out. These nematocysts are in the jellies’

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tentacles, and some jellies such as the box jelly can have extremely powerful stings, enough to kill a person. Most, however, are harmless to people. Some jellies are small (few inches), while the Arctic Lion's Mane Jelly can be over 100 feet long, and Nomura's jelly can be up to 7 feet wide. Jellies don't have a brain, but do have an elementary nervous system with receptors capable of detecting light and odors. Digestion takes place inside the bell. Some jellies are bioluminescent, meaning they produce light. Jellies are 98% water.

Lesson Plan:

1. Jellies can be collected at the Charleston docks, and are most common in late spring and early fall. They can be caught with a bucket or with a 'jelly-catcher', which is a plastic container attached to the end of a stick (available at OIMB).
2. Display jellies in small plastic containers so that students can get a good look at them.
3. Start the class by talking about what jellies are (cnidarians, related to anemones)
4. Ask students what they know about jellies, and write their responses on the board
5. Show included PowerPoint of some jellies and anemones.
6. After the PowerPoint, split students up into small groups, so that each group has one jelly at their table.
7. Have students draw the jelly at their station and write down some observations.
8. Once all groups are done, give each group a different kind of jelly.
9. Once again, have the students draw the jelly and make observations. These observations can be about things that are different between this jelly and the other.
10. Keep switching the jellies until all groups have seen all types and made observations.
11. If there is time, have students describe a jelly and see if the rest of the class can guess which one is being described. This helps the students realize what makes good observations (clear, specific descriptions, not opinions).

Assessment: Drawings, discussions, description game. You can also have students write down facts about jellies (mentioned in 'background'), and draw a jelly and label parts (e.g. bell, mouth, tentacles, nematocyst).

Tips: The more kinds of jellies you have, the better. Jellies will be more active if they were just collected that day or the day before. Late spring is the best time of year to find jellies off the docks. When the students are making observations, emphasize the importance of detail and that they should be able to distinguish between the different kinds of jellies based on their descriptions. Even though many kinds of jellies don't sting, it is best to not let the students touch any of them, because it is better for the jellies and a good habit to avoid touching jellies. Return the jellies to where you collected them as soon as possible.

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