

Home on the Reef

Questions, comments, and in-class assistance:

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Description: How do animals find their home in the ocean? Some marine animals cannot see well in the ocean and must use other cues, like sound, to find their way. This lesson plan will introduce students to the concept of habitat-associated sounds and how marine animals, like the oyster, use those sounds to find a suitable home. Students will first learn about the oyster life cycle and sounds of the oyster reef. Students will then “become” the oyster reef and act out the process of oyster settlement. Some will be baby oyster larvae searching for the reef. Others will make the sounds of fish, shrimp, or wind and waves, and make lots of noise so that their oyster friends can find their way home.

<p>Learning Objectives</p> <ul style="list-style-type: none">- Identify sounds of an underwater habitat made by living and non-living things- Distinguish between different habitats and different sounds- Discuss reasons why animals use sounds- Demonstrate how baby oysters use sound to find their habitat	<p>ACTIVITY:</p> <p>Introduction</p> <ol style="list-style-type: none">1. Introduce the topic of habitat-associated sounds by asking the students about familiar habitats. What does a city sound like? What about a park? What about the woods?2. Introduce the sounds of an oyster reef. Play audio clips of some of the key living sound producers of an oyster reef (snapping shrimp, oyster toadfish, croaker), as well as the sounds of non-living things (wind, waves). (This information can be found in the power point).3. Have students practice the sounds.<ol style="list-style-type: none">a. Snapping shrimp: clap or snapb. Toadfish: say, “honk”c. Croaker fish: knock on bookd. Wind/Waves: make “whooshing” sound4. Review the concept of a life cycle, and summarize the basic oyster life history. An oyster starts its life swimming and searching for a good home. Once it finds a home, it stays put and grows into an adult oyster. <p>Become an Oyster!</p> <ol style="list-style-type: none">5. If possible, move to an open space (outside, gym).6. Tell the students that they are going to become part of the oyster reef and see if they can find the noisy reef.
<p>Essential standards: 1.L.1.2, 2.P.1, 2.L.1 Next Gen Science: 2-LS4-1</p>	
<p>Appropriate Grade Levels: Elementary School (K-3) Approximate Time: 1 hour + Group Size: Whole Class (25-30 students)</p>	
<p>Resources Needed: <i>Students:</i> noisemakers (book or block to hit, bottle for “whooshing” sound), blinfolds <i>Teacher:</i> powerpoint, speakers (to play sound), classroom, and open space</p>	

Assign roles:

- 6 students oyster larvae (babies, blindfolded)
 - 3 students adult oysters (reef, stand still together)
 - 4 students non-living sounds (whooshers)
 - o 2 “on reef”, 2 “off-reef”
 - 4 students snapping shrimp (clappers/snappers)
 - 4 students croaker fish (knockers)
 - 4 students toadfish (honkers)
7. Go over the rules of the game:
 - a. Only oyster larvae can move. Once larvae find the reef they become adults and cannot move.
 - b. Oyster larvae cannot see. They need to close or cover their eyes.
 - c. Only make the sound you were assigned.
 8. Put oyster larvae at the front of the room with backs turned. Then set up the reef with adult oysters and all the sound producers some distance from the larvae. Set up the 2 “off reef” whooshers in between the larvae and the reef. Larvae must swim past this habitat to get to the reef with the fish.
 9. Once students are in place, have the reef start making their individual sounds and have the blind larvae try to find the reef. Once larval students think they have reached the reef they must raise their hand and cannot move. Once all larvae have found their home, the game is over.
 10. Have all students open their eyes to see how well they did!
 11. Play multiple times with different scenarios
 - a. Strong wind and waves (hurricane)
 - b. Sunken ship in the way
 - c. Large boat motoring through

Discussion

12. Have the students return to the classroom. Ask the following discussion questions:
 - a. How did the baby oysters find the reef?
 - i. They used the sounds of their habitat such as fish knocks and snapping shrimp snaps.
 - b. Why do animals, like oysters, use sound to find their habitat?
 - i. In some environments, the animals cannot use vision to find their way and must use other cues (senses) to find their home.
 - c. What might make it harder for a baby oyster to find its home? What would happen if a loud boat passed by?
 - i. The oysters may not be able to “hear” their habitat, the boat masks the sounds of the reef.

Essential Standards

2.P.1 Understand the relationship between sound and vibrating objects

2.L.1 Understand animal life cycles

1.L.1.2 Give examples of how the needs of different plants and animals can be met by their environments in North Carolina or different places throughout the world

Next Generation Science Standards

2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats

Resources:

Powerpoint with audio clips of animals (Home on the Reef ppt.pptx)

Discovery of Sound in the Sea- audio gallery and information (www.dosits.org)

Wild Music: www.wildmusic.org/en/soundscapes

NC State Soundscape Research: <https://cmast.ncsu.edu/soundscapes>

Additional Activities:

Octonauts and the Snapping Shrimp: <https://www.youtube.com/watch?v=t3uHeMHdpko>
Children's show that explores the mysterious sound of the snapping shrimp

Have to Have a Habitat Song: <http://www.songsforteaching.com/jeffschroeder/habitat.htm>
Fun song about different habitats and why habitats are important