



LESSON 7

Marine Animal Movement

Kindergarten to Grade 3

Objectives

- To describe ways that marine animals move.
- To demonstrate how some marine animals move.
- To explain reasons why marine animals move.

Materials

Clear container for water, 2 balloons, 2 marbles, 4" x 3" construction paper cards, pictures of intertidal animals moving.

Animal movement worksheet from *Beside the Sea* by K. Francis and F. Jamison (page 56).

Whale and fish models.

Videos: Octopus section of *The Biology of Molluscs*, Biomedica Associates (www.ebiomedica.com).

Videos: *The Biology of Cnidarians*, Biomedica Associates.

Concepts

- Marine animals move for a variety of reasons and in a variety of different ways.
- Jet propulsion is the way octopus and scallops move.
- Fish move up and down in the water using their swim bladder.

Activities

1. Human Movement

What are some different ways that humans can move?

A. Crawl, walk, run, swim.

What is the fastest way humans can move?

A. Running

Why do humans move?

A. To get from one place to another, to get food, to get exercise, etc.

“Freeze” Game

Get students to stand up and move in different ways in the classroom. When the teacher says “Freeze,” students should stop moving and stay in their positions. When the teacher says “Go,” students will start moving in a different way than before. For example, teachers may ask students to move: low to the ground, medium from the ground, on tiptoes as high as they can, on one foot, on two feet, etc.

2. Why and How Marine Animals Move

Marine animals have many reasons to move.

Can you name some?

A: To escape predators, find shelter, find mates, find food.

Marine animals have different ways of moving. Can you name some animals and how they move?

A: Fish and whales swim, octopus and scallops use jet propulsion, sea stars use tube feet, snails use their one big foot, shrimp use their legs, swimmerettes and tail, sea urchins use their spines and tube feet, clams use their foot.

Do fish and whales move the same way? How do they move? Let students look at models of an orca and a salmon.

A: No. Whales move their tails up and down while fish move their tails from side to side.

Whales can also spy hop and breach.

Fish use their pectoral and pelvic fins for balance and to steer. To swim quickly, the fins are kept flat against the body. To stop quickly, the fish extends all the fins at once. The dorsal and anal fins prevent the fish from rocking from side to side.

Marine Movement Game

Get students standing up in the room. Review actions for different animal movements. Call out the names of different marine animals and students will move the way that animal moves.



Whale – move hands up and down like a whale tail

Salmon – move hands from side to side

Clam – hop on one foot

Scallop – jump forward like jet propulsion

3. Swim Bladders (for fish movement up and down in the water)

To demonstrate how a swim bladder works, fill 2 balloons with air. Put a marble in each one and tie them. Make sure that one balloon has very little air in it and that the other one has a lot of air. Put the balloons in a container of water so that students can see that one floats near the surface and one stays near the bottom of the container. Ask if students know what an air bladder is.

Do you remember what an air bladder is used for in seaweed?

A: It is used to make the seaweed float to the surface so it can use the sun's energy to make food.

Why would a fish need a swim bladder? From observing the balloons in the water what do students think the swim bladder would be used for.

A: Most fish have a swim bladder. It allows the fish to stay at a certain level in the water. The air enters through the fishes mouth or from the bloodstream. As the bladder expands with air, the fish rises in the water. The less air in the bladder, the lower in the water the fish is. When the bladder deflates, the fish sinks. Fish without swim bladders like sharks must swim continuously to keep from sinking. In salmon, the swim bladder is connected to the gut. They rise to the surface and gulp air. When the swim bladder is closed off like in a rockfish, they reabsorb the gases. When a rockfish is caught by a fisher, it may have the bladder forced out of its mouth because it

doesn't have enough time to reabsorb gases as it is quickly pulled to the surface of the water.

4. Marine Animal Movement

Students complete the *Animal Movement Worksheet* on page 57 of *Beside the Sea*. Go over the answers together.

Animal Movement Flipbook

Students will choose a favourite marine animal and make a flipbook to show the movement of that animal. Have lots of marine animal pictures on hand. Videos of different marine creatures moving can help students decide which one they want to draw.

Show the octopus section of the video *The Biology of Molluscs* and the video *The Biology of Cnidarians*.

To make a flipbook, students need to have 6 pieces of 4" x 3" blue construction paper. Instruct students to draw some seaweed or rocks that are in the same place on each sheet – this will give the illusion of movement as the pages are flipped. Then ask them to draw their favourite marine animal on each page with a slightly different pose each time, as if it were moving through the pages. Staple the pages together in order when the drawings are finished. When the book is flipped, it will look like the animal is moving!

Conclusion

- Review ways animals move and reasons they move.
- Flip through each student's flipbook.

Extension

Demonstrate how jet propulsion works by placing a straw through a string. Tie the string securely to two chairs. Blow up a balloon and attach it to the straw with masking tape. When it is attached, let go of the balloon and watch the straw move from one end of the string to the other. Let students try it.