Rocky Shore Marine Science Curriculum: An Ecosystem Unit for Elementary Educators

Unit Overview

Lesson	Topic	Duration	Next Generation Science Standards	Ocean Literacy Principles	Focus Question	Cross-Curricular Connections*
1. Toss the Blue Planet	Ocean Size & Importance	1 Session	**2-ESS2-3.** Obtain information to identify where water is found on Earth and that it can be solid or liquid.	OLP 1, OLP 2	How much of the Earth's crust is covered by the ocean?	Math, Social Studies, Physical Education, Writing
2. Build Your Own Watershed	Watersheds & Watershed Conservation	1 Session	**2-ESS2-2.** Develop a model to represent the shapes and kinds of land and bodies of water in an area.	OLP 1, OLP 2	What is a watershed?	Social Studies, Conservation, Engineering, Technology
3. Introduction to the Rocky Shore	Rocky Shore Identification	1 Session	**2-LS4-1.** Make observations of plants and animals to compare the diversity of life in different habitats.	OLP 5	What is a rocky shore?	Reading, Technology
4. Rocky Shore Waves	Waves & Change	2 Sessions	**2-ESS2-2.** Develop a model to represent the shapes and kinds of land and bodies of water in an area.	OLP 1, OLP 2	What impact do waves have on rocky shore communities?	Engineering
5. The Ocean's Tides	Tides & Change	1 Session	**3-PS2-2.** Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.	OLP 1, OLP 2	What are the tides?	Physical Education, Math, Technology
6. Taking the Rocky Shore's Temperature	Land & Water Temperature Changes	1 Session	**3-ESS2-1.** Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.	OLP 1, OLP 3	Why is the temperature of the land and water different at the rocky shore?	Math
7. Create-a-Critter, Part One	Adaptations & Change	2 Session	**4-LS1-1.** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	OLP 5	What is an adaptation?	Engineering, Writing
8. The Splash Zone	Zonation & Adaptation	2 Sessions	**3-LS4-3.** Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	OLP 5	What is the splash zone?	Art, Reading, Writing

* Cross-curricular connections include lesson extension suggestions. Extra time will need to be allotted to fit in lesson extension suggestions.

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9. Hungry Birds	Shorebirds, Adaptations	1 Session	**4-LS1-1.** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	OLP 5	Why do shorebirds have beaks that are shaped differently?	Physical Education
10. The Upper Intertidal Zone	Zonation, Adaptations	2 Sessions	**3-LS4-3.** Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	OLP 5	What is the upper intertidal zone?	Reading, Art
11. Tide Pool Painting	Tide Pool, Adaptations	2 Sessions	**3-LS4-3.** Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	OLP 2, OLP 5	What is a tide pool?	Math, Art, Technology
12. The Middle Intertidal Zone	Zonation, Adaptations	2 Sessions	**3-LS4-3.** Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	OLP 5	What is the middle intertidal zone?	Reading, Art
13. Hide and Seek	Camouflage, Adaptations	2 Sessions	**3-LS4-2.**Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.	OLP 5	What types of camouflage do ocean animals have that help them survive?	Writing, Art, Technology
14. The Lower Intertidal Zone	Zonation, Adaptations	2 Sessions	**3-LS4-3.** Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	OLP 5	What is the lower intertidal zone?	Writing, Art
15. Survive the Shore	Rocky Shore Crabs, Adaptations	1 Session	**1-LS1-2.** Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.	OLP 5	How do a crab's adaptations help it survive?	Physical Education
16. The Subtidal Zone	Zonation, Adaptations	2 Sessions	**3-LS4-3.** Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	OLP 5	What is the subtidal zone?	Writing, Art

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17. The Four Traits of Fish	Fish, Traits	1 Session	3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.	OLP 5	What is a fish?	Math, Technology
18. The Wandering Plankton	Plankton, Marine Food Web	1 Session	**5-PS3-1.** Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.	OLP 3, OLP 4, OLP 5, OLP 6	Why is plankton important?	Art, Technology
19. Create-a-Critter, Part Two	The Engineering Design Process, Adaptations	2 Sessions	**4-LS1-1.** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	OLP 5	What is the engineering design process?	Engineering
20. Rocky Shore Algae	Algae, Plants	1 Session	**3-LS3-1.** Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.	OLP 5, OLP 6	What is the difference between algae and plants	Physical Education
21. Rocky Shore Scoot	Rocky Shore Ecosystem	1 Session	**3-LS4-3.** Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	OLP 1, OLP 2, OLP 3, OLP 4, OLP 5, OLP 6	What rocky shore facts do I know?	Physical Education
22. Marine Conservation	Marine Conservation, Recycling	2 Sessions	**5-ESS3-1.** Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.	OLP 1, OLP 4, OLP 6, OLP 7	What is marine conservation?	Conservation, Physical Education, Technology
23. Rocky Shore Ecosystem Assessment	Rocky Shore Ecosystem	1 Session	N/A	OLP 1, OLP 2, OLP 3, OLP 4, OLP 5, OLP 6, OLP 7	What have you learned about the rocky shore ecosystem?	N/A
24. Explore the Shore	Planning a Visit to the Rocky Shore	1 Session	**5-ESS3-1.** Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.	OLP 1, OLP 5, OLP 6, OLP 7	How can I be prepared to visit the rocky shore?	Technology, Music, Writing