



# Marine Science (Course #2002500 Hons #2002510)



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Quarter	Big Idea	Benchmark Description		Suggested Pacing Days*
First Quarter (39 days)	Lab Safety	1	<a href="#">SC.912.N.1.2</a> Describe and explain what characterizes science and its methods	3
	Principles of Marine Science	2	<a href="#">SC.912.N.1.2</a> : Describe & explain what characterizes science & its methods. (supporting standards SC.912.N.1.6 and SC.912.N.4.1) <i>Special Focus: Principles of Marine Science</i>	7
	Plate Tectonics	3	<a href="#">SC.912.P.10.2</a> Explore the Law of Conservation of Energy by differentiating among open, closed, and isolated systems and explain that the total energy in an isolated system is a conserved quantity. <i>Special Focus: Plate Tectonics</i>	7
	Ocean Chemistry and Structure	4	<a href="#">SC.912.L.18.12</a> Discuss the special properties of water that contribute to Earth's suitability as an environment for life: cohesive behavior, ability to moderate temperature, expansion upon freezing, and versatility as a solvent. <i>Special Focus: Ocean Chemistry &amp; Structure SC.912.E.7.9, SC.912.L.17.2</i>	7
	Waves and Tides	5	<a href="#">SC.912.P.10.20</a> Describe the measurable properties of waves and explain the relationships among them and how these properties change when the wave moves from one medium to another. <i>Special Focus: Waves &amp; Tides SC.912.E.7.9</i>	8
	Ocean and Atmospheric Circulation	6	<a href="#">SC.912.E.7.9</a> Analyze the causes of the various kinds of surface and deep water motion within the oceans and their impacts on the transfer of energy between the poles and the equator. <i>Special focus: Ocean and Atmospheric Circulation</i>	7
Second Quarter (36 days)	The Microbial World	7	<a href="#">SC.912.L.17.7</a> : Characterize the biotic and abiotic components that define freshwater systems, marine systems and terrestrial systems. <i>Special Focus: Microbes</i>	5
	Multicellular Primary Producers: Seaweeds & Plants	8	<a href="#">SC.912.L.17.7</a> Characterize the biotic and abiotic components that define freshwater systems, marine systems and terrestrial systems. <i>Special Focus: Seaweeds &amp; Plants</i>	7
	Marine Animals without a Backbone	9	<a href="#">SC.912.L.17.7</a> Characterize the biotic and abiotic components that define freshwater systems, marine systems and terrestrial systems. <i>Special Focus: Marine Invertebrates SC.912.L.15.13</i>	13
	Marine Fishes	10	<a href="#">SC.912.L.17.7</a> Characterize the biotic and abiotic components that define freshwater systems, marine systems and terrestrial systems. <i>Special Focus: Marine Vertebrates SC.912.L.15.13</i>	12
Third Quarter (34 days)	Marine Reptiles, Birds, and Mammals	11	<a href="#">SC.912.L.17.7</a> : Characterize the <b>biotic</b> and abiotic components that define freshwater systems, marine systems and terrestrial systems. <i>Special Focus: Marine Reptiles, Birds, &amp; Mammals SC.912.L.15.13</i>	11
	Introduction to Marine Ecology	12	<a href="#">SC.912.L.17.9</a> Use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels. <i>Special Focus: Introduction to Marine Ecology</i>	7
	Between the Tides	13	<a href="#">SC.912.L.17.2</a> : Explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature. <i>Special Focus: Coastal Ecosystems SC.912.L.17.7, SC.912.L.17.10, SC.912.L.17.1, SC.912.L.17.9, SC.912.L.17.6, SC.912.L.17.4</i>	6
	Estuaries: Where the Rivers Meet the Sea	14	<a href="#">SC.912.L.17.3</a> : Discuss how various oceanic and freshwater processes, such as currents, tides, and waves, affect the abundance of aquatic organisms. <i>Special Focus: Estuaries SC.912.L.17.7, SC.912.L.17.16, SC.912.L.17.10, SC.912.L.17.1, SC.912.L.17.9, SC.912.L.17.6, SC.912.L.17.4</i>	7
	Life on the Continental Shelf	15	<a href="#">SC.912.L.17.3</a> : Discuss how various oceanic and freshwater processes, such as currents, tides, and waves, affect the abundance of aquatic organisms. <i>Special Focus: Continental Shelf Ecosystem SC.912.L.17.7, SC.912.L.17.16, SC.912.L.17.10, SC.912.L.17.1, SC.912.L.17.9, SC.912.L.17.6, SC.912.L.17.4</i>	5
	Coral Reefs	16	<a href="#">SC.912.L.17.2</a> : Explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature. <i>Special Focus: Coral Reefs SC.912.L.17.7, SC.912.L.17.16, SC.912.L.17.10, SC.912.L.17.1, SC.912.L.17.9, SC.912.L.17.6, SC.912.L.17.4</i>	7
Fourth Quarter (27 days)	The Ocean Depths	17	<a href="#">SC.912.L.17.2</a> : Explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature. <i>Special Focus: Deep Ocean Environment SC.912.L.17.7, SC.912.L.17.10, SC.912.L.17.1, SC.912.L.17.9, SC.912.L.17.6</i>	6
	Life Near the Surface	18	<a href="#">SC.912.L.17.2</a> : Explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature. <i>Special Focus: Photic Zone SC.912.L.17.7, SC.912.L.17.10, SC.912.L.17.1, SC.912.L.17.9, SC.912.L.17.6</i>	7
	Resources from the Sea	19	<a href="#">SC.912.L.17.11</a> : Evaluate the costs and benefits of renewable and nonrenewable resources <i>Special Focus: Marine Resources SC.912.L.17.16, SC.912.L.17.4</i>	11

	The impact of Humans on the Marine Environment	20	<b>SC.912.L.17.16:</b> Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gasses, ozone depletion, and surface and groundwater pollution. <i>Special Focus: Human Impact SC.912.L.17.11, SC.912.L.17.8, SC.912.L.14.6, SC.912.N.4.2</i>	11
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*\*The days provided for each unit/topic is an estimate that may be adjusted by subject-level PLCs based on student achievement data and should be adjusted, if necessary, based upon a daily format. The recommended days shown are less than the actual days for each quarter to allow for additional time for routines, testing, absences, remediation and outside considerations. \*\* This does not include the days in May or June due to testing schedules and end of year events.*

