

# Marine Ecology - Honors Course Guide

## Marine Ecology - Honors

### Unit 1: Introduction to Marine Ecology

Unit	Day	State Standards	Key Concepts / Instruction
Unit 1: Introduction to Marine Ecology	1 - 5	1.0 Explain the formation of the oceans and describe the history of the marine sciences. 3 Evaluate the living and non-living factors that define the marine ecosystems. 3.1 Biogeochemical cycles 3.2 Chemical and physical properties of water	Formation of the Oceans History of Marine Ecology Ecosystems and Biogeochemical Cycles Formation of the Oceans History of Marine Ecology Ecosystems and Biogeochemical Cycles  <a href="#">Instructional Guide</a>
Unit 1: Introduction to Marine Ecology	6 - 10	3.0 Evaluate the living and non-living factors that define the marine ecosystems. 3.1 Natural selection 3.2 Interspecific and intraspecific competition	Natural Selection  <a href="#">Instructional Guide</a>

### Unit 2: Physical Oceanography

Unit	Day	State Standards	Key Concepts / Instruction
Unit 2: Physical Oceanography	11 - 15	2.0 Describe the physical features of the ocean floor and explain the processes that create them. 2.1 Plate tectonics and bathymetry 2.2 Circulation of water 2.3 Erosion and sediment	Marine Geology  <a href="#">Instructional Guide</a>
Unit 2: Physical Oceanography	16 - 20	2.0 Describe the physical features of the ocean floor and explain the processes that create them. 2.1 Plate tectonics and bathymetry 2.2 Circulation of water 2.3 Erosion and sediment	Physical Properties of Water  <a href="#">Instructional Guide</a>
Unit 2: Physical Oceanography	21 - 25	2.0 Describe the physical features of the ocean floor and explain the processes that create them. 2.1 Plate tectonics and bathymetry 2.2 Circulation of water 2.3 Erosion and sediment	Thermodynamics and Circulation  <a href="#">Instructional Guide</a>

### Unit 3: Marine Producers

Unit	Day	State Standards	Key Concepts / Instruction
Unit 3: Marine Producers	26 - 30	4.0 Identify the role of autotrophic organisms as a basis for marine food webs. 4.1 Microbes, viruses and chemoautotrophs 4.2 Algae (protists) 4.3 Angiosperm	Types of Marine Producers The Importance of Algae Marine Adaptations For Photosynthesis Marine Microbes  <a href="#">Instructional Guide</a>

### Unit 4: Marine Invertebrates

Unit	Day	State Standards	Key Concepts / Instruction
Unit 4: Marine Invertebrates	31 - 35	5.0 Compare and contrast the invertebrate phyla.	Phylum Porifera, Phyla Cnideria and Ctenophora

		5.1 Evolutionary developmental biology 5.2 Form function analysis 5.3 Adaptation to the environment	<a href="#">Instructional Guide</a>
Unit 4: Marine Invertebrates	36 - 40	5.0 Compare and contrast the invertebrate phyla. 5.1 Evolutionary developmental biology 5.2 Form function analysis 5.3 Adaptation to the environment	Phylum Platyhelminthes, Phylum Nematoda, Phylum Mollusca  <a href="#">Instructional Guide</a>
Unit 4: Marine Invertebrates	41 - 45	5.0 Compare and contrast the invertebrate phyla. 5.1 Evolutionary developmental biology 5.2 Form function analysis 5.3 Adaptation to the environment	Phylum Annelida, Phylum Arthropoda, Phylum Echinodermata  <a href="#">Instructional Guide</a>

### Unit 5: Marine Vertebrates

Unit	Day	State Standards	Key Concepts / Instruction
Unit 5: Marine Vertebrates	46 - 50	6.0 Distinguish characteristics of the vertebrate phyla that allow them to be successful in marine ecosystems. 6.1 Primarily aquatic marine invertebrates 6.2 Secondarily aquatic marine vertebrates	Phyla Chordata, Agnatha, Chondrichthyes and Osteichthyes  <a href="#">Instructional Guide</a>
Unit 5: Marine Vertebrates	51 - 55	6.0 Distinguish characteristics of the vertebrate phyla that allow them to be successful in marine ecosystems. 6.1 Primarily aquatic marine vertebrates 6.2 Secondarily aquatic marine vertebrates	Phylum Reptilia, Phylum Aves  <a href="#">Instructional Guide</a>
Unit 5: Marine Vertebrates	56 - 60	6.0 Distinguish characteristics of the vertebrate phyla that allow them to be successful in marine ecosystems. 6.1 Primarily aquatic marine vertebrates 6.2 Secondarily aquatic marine vertebrates	Phylum Mammalia  <a href="#">Instructional Guide</a>
Unit 5: Marine Vertebrates	61 - 65	5.0 Distinguish characteristics of the vertebrate phyla that allow them to be successful in marine ecosystems. 6.1 Primarily aquatic marine vertebrates 6.2 Secondarily aquatic marine vertebrates	Phylum Mammalia  <a href="#">Instructional Guide</a>

### Unit 6: Marine Ecosystems

Unit	Day	State Standards	Key Concepts / Instruction
Unit 6: Marine Ecosystems	66 - 70	7.0 Examine marine ecosystems to construct detailed ecological profiles. 7.1 The neritic zone 7.2 The pelagic zones 7.3 Extreme marine ecosystems	Zonation, The Neritic Zones  <a href="#">Instructional Guide</a>
Unit 6: Marine Ecosystems	71 - 75	7.0 Examine marine ecosystems to construct detailed ecological profiles. 7.1 The neritic zones 7.2 The pelagic zones 7.3 Extreme marine ecosystems	The Pelagic Zones and Extreme Ecosystems  <a href="#">Instructional Guide</a>

### Unit 7: Stewardship

Unit	Day	State Standards	Key Concepts / Instruction
Unit 7: Stewardship	76 - 80	8.0 Appraise the effect of human interaction with marine ecosystems.	Maritime Law and Pollution, Fisheries Management

		8.1 Maritime law 8.2 Sustainability 8.3 Resource stewardship 8.4 Coastal Development	<a href="#">Instructional Guide</a>
Unit 7: Stewardship	81 - 85	8.0 Appraise the effect of human interaction with marine ecosystems. 8.1 Maritime law 8.2 Sustainability 8.3 Resource stewardship 8.4 Coastal development	Marine Mammals and Off-shore Oil Drilling and Coastal Development  <a href="#">Instructional Guide</a>
<b>Review and Final Exam</b>			
<b>Unit</b>	<b>Day</b>	<b>State Standards</b>	<b>Key Concepts / Instruction</b>
Review and Final Exam	85 - 90		Review and Final Exam  <a href="#">Instructional Guide</a>