GLENDALE UNIFIED SCHOOL DISTRICT

Senior High School

June 2, 2009

Department:	Science
Course Title:	Marine Biology 1, 2
Course Number:	
Grade Level:	11, 12
Semester Hours:	10 credits (2 semesters)
Prerequisites:	C or better in both a physical science and a life science course or teacher approval
Approved Text:	Marine Biology 6th Ed. Copyright 2007 McGraw Hill SE ISBN: 0-07-325838-5
Course Description:	Marine Biology 1, 2 is a lab science course, based on California State Science Standards. Students will gain an understanding of biological concepts as they apply to the oceans and other living systems on the following topics: basic chemistry of the ocean, cell biology, and microscopy. *(Submitted, but not yet approved, for d or g UC credit.)*

I. Standards

Investigation and Experimentation Standards	1a – m
Earth Science Standards	4c, 5a, 5b, 5c, 5d, 5f and 5g; 8b, 8c; 9a
Biology Standards	1a, 1b, 1c, 1f, 1g, 1h, 1i; 2a, 2b, 2f; 6a, 6b, 6c, 6d, 6e, 6f; 7a, 7b, 7c; 8; 9, 9a, 9b, 9c; 10d
Chemistry Standards	4a and 4b; 6a
AP Earth Science	IC, ID, IIA, IIB, IIC, IID, IIIB, IVA, IVE, IVF, VB, VC, VIA, VIB, VIC, VIIB, VIIC

II. Sample Assessments

Students' learning will be assessed through a variety of activities: Reviewing literature, self-reflection, individual and cooperative research projects, class and group discussions, dissection, labs, lecture, and individual reading,

III. Topic of Study

Material Covered by Chapter	Standards	Time on Topic
Ch 1: The Science of Marine Biology The Scientific Method The Scientific Theory	Investigation and Experimentation 1a—m	
Ch 2: The Water Planet The Geological Provinces of the Ocean The Mid-Ocean Ridge and Hydrothermal Vents	APES 1a (plate tectonics)	
Ch 3: The Waters of the Ocean Water Density and the Three-Layered Ocean Ocean Circulation Waves and Tides	Earth 5 b, d, f, g Chemistry 4 a, b (gases and their properties) APES 1B (ocean circulation, Coriolis effect)	
Ch 4: The Ingredients of Life Living Machinery Challenges of Life in the Sea Perpetuating Life The Diversity of Life in the Sea	Biology 1 f, g (photosynthesis & respiration) 1h (macromolecules) 1 a—e (the cell) 1a, i (diffusion & chemiosomotic gradients) 9 (reproductive system) Earth 8 b Chemistry 6a (solutions)	
Ch 5: Prokaryotes Unicellular Algae	Biology 1c (cell differentiation) 6 e (ecology)	

Protozoans: The Animal-like Protists Fungi	6 d (biogeochemical cycles) Earth 7 a, b, c (biogeochemical cycles) APES IIA (ecosystem structure)	

Material Covered by Chapter	Standards	Time on Topic
Ch 6: Multicellular Algae: The Seaweeds Flowering Plants	Biology 1 f (photosynthesis) 6 e, f (ecology) Earth 9 a (economic importance) APES V C (economic importance)	
Ch 7: Sponges Cnidarians: Radial Symmetry Comb Jellies: Radial Symmetry Revisited Bilaterally Symmetrical Worms Molluscs: The Successful Soft Body Arthropods: The Armored Achievers Lophophorates Arrow Worms Echinoderms: Five-Way Symmetry Hemichordates: A "Missing Link"? Chordates Without a Backbone	Biology 9 a, b, c, (physiology) 2 a, b, f (reproduction, genes) APES IV F (fishing-dredging)	
Ch 8: Vertebrates: An Introduction Types of Fishes Biology of Fishes	Biology 9 a, b, c (physiology) 2 a, b, f (reproduction, genes) APES IV F (fishing)	
Ch 9: Marine Reptiles Seabirds Marine Mammals	Biology 9 (physiology and reproduction) APES II A (ecosystem	

	structure)	
Ch 10: The Organization of Communities Major Marine Lifestyles and Environments The Flow of Energy and Materials	Biology 6 a, b, c, f (ecology) APES II A (ecosystem structure) II B (energy flow)	
Ch 11: Rocky Shore Communities Soft-Bottom Intertidal Communities	Biology 6 f (ecology) APES I C (saltwater, global water) I D (soil dynamics) II D (natural ecosystem change)	

Material Covered by Chapter	Standards	Time on Topic
Ch 12: Origin and Types of Estuaries Physical Characteristics of Estuaries Estuaries as Ecosystems Human Impact on Estuarine Communities	Biology 6 (ecology) 8 (evolution and adaptations) Earth 5 c (salinity) Chemistry 6 a (solutions) APES I C (global water and salinity) II A (ecosystem structure) II D (ecological succession)	
Ch 13: Physical Characteristics of the Subtidal Environment Continental Shelf Bottom Communities		
Ch 14: The Organisms that Build Reefs Kinds of Coral Reefs The Ecology of Coral Reefs	Biology 6 a, b, d, e, f (ecology) Earth 5 a—g (ocean winds, currents, salinity) APES II A (ecosystem structure) IV F (fishing)	
Ch 15: The Organisms of the Epipelagic Living in the Epipelagic Epipelagic Food Webs	Biology 6a, b, d, e, f (ecology) Earth 5f (ENSO) APES IIA (ecosystem structure) IID (ecological succession)	
Ch 16: The Twilight World The World of Perpetual Darkness The Deep-Ocean Floor	Biology 10 d (bacteria) APES II D (ecosystem change)	

Hot Springs, Cold Seeps, and Dead Bodies	VI A (water pollution)	
Ch 17: The Living Resources of the Sea Non-Living Resources from the Sea Floor Non-Living Resources from Seawater	APES I C (global water resources) IV F (fishing) IV E (mining, minerals) V B, C (energy, oil, gas)	
Material Covered by Chapter	**Standards**	**Time on Topic**
Ch 18: Modification and Destruction of Habitats Pollution Threatened and Endangered Species Conserving and Enhancing the Environment	Earth 8 c APES III B (human population) IV A (pesticides) VI A (pollution and sewage, PCB, metals, thermal, etc.) VI B (impacts on environment and human health) V B, C (energy, oil, gas) VII C (loss of biodiversity)	
Ch 19: Oceans as Barriers and Avenues Oceans and Cultures Oceans and Recreation Prospects for the Future	Earth 4 c (greenhouse gases) APES II C (atmospheric change) VI C (economic impacts) VII B (global warming) VII C (loss of biodiversity and conservation)	

IV. Recommended Materials: Marine Biology 6th Ed.
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