

Biology CR

State Standard Number	State Standard Area/Description	Unit Name	Course Topic Description
9-10.B.1	Nature of Science		
9-10.B.1.1	Understand Systems, Order, and Organization		
9-10.B.1.1.1	Explain the scientific meaning of system, order, and organization.		
9-10.B.1.1.2	Apply the concepts of order and organization to a given system.		
9-10.B.1.2	Understand Concepts and Processes of Evidence, Models, and Explanations		
9-10.B.1.2.1	Use observations and data as evidence on which to base scientific explanations.	The Nature of Science	Scientific Method Lab
9-10.B.1.2.2	Develop models to explain concepts or systems.		
9-10.B.1.2.3	Develop scientific explanations based on knowledge, logic and analysis.	The Nature of Science	Scientific Method Lab
9-10.B.1.3	Understand Constancy, Change, and Measurement		
9-10.B.1.3.1	Measure changes that can occur in and among systems.	The Nature of Science	Scientific Method Lab
9-10.B.1.3.2	Analyze changes that can occur in and among systems.	The Nature of Science	Scientific Method Lab
9-10.B.1.3.3	Measure and calculate using the metric system.	The Nature of Science	Scientific Method Lab (temperature)

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9-10.B.1.4	Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State		
0	Reference to 7.S.3.2.1		
9-10.B.1.5	Understand Concepts of Form and Function		
0	No objectives in Biology.		
9-10.B.1.6	Understand Scientific Inquiry and Develop Critical Thinking Skills		
9-10.B.1.6.1	Identify questions and concepts that guide scientific investigations.	The Nature of Science	Scientific Method Lab (intro)
9-10.B.1.6.2	Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations.	The Nature of Science	Scientific Method Lab

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9-10.B.1.6.3	Use appropriate technology and mathematics to make investigations.	The Nature of Science	Scientific Method Lab
9-10.B.1.6.4	Formulate scientific explanations and models using logic and evidence.	Evolution	Evolution Lab
9-10.B.1.6.5	Analyze alternative explanations and models.	Genetics	DNA Lab
9-10.B.1.6.6	Communicate and defend a scientific argument.	The Nature of Science	Scientific Method Lab
9-10.B.1.6.7	Explain the differences among observations, hypotheses, and theories.	The Nature of Science	Scientific Method Lab
9-10.B.1.7	Understand That Interpersonal Relationships Are Important in Scientific Endeavors		
0	No objectives in Biology.		
9-10.B.1.8	Understand Technical Communication		
9-10.B.1.8.1	Analyze technical writing, graphs, charts, and diagrams.		

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9-10.B.2	Physical Science		
0	No goals or objectives in Biology.		
9-10.B.3	Biology		
9-10.B.3.1	Understand the Theory of Biological Evolution		
9-10.B.3.1.1	Use the theory of evolution to explain how species change over time.	Evolution	Section 1, Part 3
9-10.B.3.1.2	Explain how evolution is the consequence of interactions among the potential of a species to increase its numbers, genetic variability, a finite supply of resources, and the selection by the environment of those offspring better able to survive and reproduce.	Evolution	Section 1, Part 4
9-10.B.3.2	Understand the Relationship between Matter and Energy in Living Systems		
9-10.B.3.2.1	Explain how matter tends toward more disorganized states (entropy).		

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9-10.B.3.2.2	Explain how organisms use the continuous input of energy and matter to maintain their chemical and physical organization.	Photosynthesis and Cellular Respiration	Introduction
9-10.B.3.2.3	Show how the energy for life is primarily derived from the sun through photosynthesis.	Photosynthesis and Cellular Respiration	Introduction
9-10.B.3.2.4	Describe cellular respiration and the synthesis of macromolecules.	Photosynthesis and Cellular Respiration	Cellular Respiration
9-10.B.3.2.5	Show how matter cycles and energy flows through the different levels of organization of living systems (cells, organs, organisms, communities) and their environment.	Ecology	Section 2, Parts 7-9
9-10.B.3.3	Understand the Cell is the Basis of Form and Function for All Living Things		
9-10.B.3.3.1	Identify the particular structures that underlie the cellular functions.	Cell Structure	Section 1, Parts 5-7
9-10.B.3.3.2	Explain cell functions involving chemical reactions.	Photosynthesis and Cellular Respiration	Enzyme Lab
9-10.B.3.3.3	Explain how cells use DNA to store and use information for cell functions.	Cell Structure	Section 3, Parts 4-5

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9-10.B.3.3.4	Explain how selective expression of genes can produce specialized cells from a single cell.		
9-10.B.4	Earth and Space Systems		
0	No goals or objectives in Biology.		
9-10.B.5	Personal and Social Perspectives; Technology		
9-10.B.5.1	Understand Common Environmental Quality Issues, Both Natural and Human Induced	Ecology	Section 1, Part 6
9-10.B.5.1.1	Analyze environmental issues such as water and air quality, hazardous waste, forest health, and agricultural production.	Ecology	All of Section 3 covers these types of topics
9-10.B.5.2	Understand the Relationship between Science and Technology		
9-10.B.5.2.1	Explain how science advances technology.	Cell Structure	Section 1, Parts 2-3

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9-10.B.5.2.2	Explain how technology advances science.	Cell Structure	Section 1, part 2
9-10.B.5.2.3	Explain how science and technology are pursued for different purposes.		
9-10.B.5.3	Understand the Importance of Natural Resources and the Need to Manage and Conserve Them		
9-10.B.5.3.1	Describe the difference between renewable and nonrenewable resources.	Ecology	Section 3, part 6