

Inquiry Investigations™
Biotechnology Applications MODULE - 1278382
Grades: 7-10

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Hawaii Content and Performance Standards
Science
Grade 7

CONTENT STANDARD / COURSE	HI.SC.7.1.	The Scientific Process: SCIENTIFIC INVESTIGATION: Discover, invent, and investigate using the skills necessary to engage in the scientific process
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.7.1.1.	<p>Scientific Inquiry: Design and safely conduct a scientific investigation to answer a question or test a hypothesis</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.7.1.3.	<p>Scientific Knowledge: Explain the need to revise conclusions and explanations based on new scientific evidence</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops

		<ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
CONTENT STANDARD / COURSE	HI.SC.7.3.	Life and Environmental Sciences: ORGANISMS AND THE ENVIRONMENT: Understand the unity, diversity, and interrelationships of organisms, including their relationship to cycles of matter and energy in the environment
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.7.3.2.	<p>Interdependence: Explain the interaction and dependence of organisms on one another</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait
CONTENT STANDARD / COURSE	HI.SC.7.5.	Life and Environmental Sciences: DIVERSITY, GENETICS, AND EVOLUTION: Understand genetics and biological evolution and their impact on the unity and diversity of organisms
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.7.5.2.	<p>Heredity: Describe how an inherited trait can be determined by one or more genes which are found on chromosomes</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue

		<p>People of Troublesome Creek</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Teacher Resource CD: Biotechnology in Medicine
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**Hawaii Content and Performance Standards
Science
Grade 8**

CONTENT STANDARD / COURSE	HI.SC.8.1.	The Scientific Process: SCIENTIFIC INVESTIGATION: Discover, invent, and investigate using the skills necessary to engage in the scientific process
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.8.1.1.	<p>Scientific Inquiry: Determine the link(s) between evidence and the conclusion(s) of an investigation</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.8.1.2.	<p>Scientific Inquiry: Communicate the significant components of the experimental design and results of a scientific investigation</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way

		<ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS
CONTENT STANDARD / COURSE	HI.SC.8.2.	The Scientific Process: NATURE OF SCIENCE: Understand that science, technology, and society are interrelated
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.8.2.1.	<p>Science, Technology, and Society: Describe significant relationships among society, science, and technology and how one impacts the other</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science

		<ul style="list-style-type: none"> Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.8.2.2.	<p>Unifying Concepts and Themes: Describe how scale and mathematical models can be used to support and explain scientific data</p> <ul style="list-style-type: none"> Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery
CONTENT STANDARD / COURSE	HI.SC.8.5.	Life and Environmental Sciences: DIVERSITY, GENETICS, AND EVOLUTION: Understand genetics and biological evolution and their impact on the unity and diversity of organisms
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.8.5.1.	<p>Biological Evolution: Describe how changes in the physical environment affect the survival of organisms</p> <ul style="list-style-type: none"> Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments

**Hawaii Content and Performance Standards
Science
Grade 9**

CONTENT STANDARD / COURSE	HI.SC.PS.	Physical Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.PS.2.	The Scientific Process: NATURE OF SCIENCE: Understand that science, technology, and society are interrelated
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.PS.2.1.	<p>Science, Technology, and Society: Explain how scientific advancements and emerging technologies have influenced society</p> <ul style="list-style-type: none"> Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops Teacher Resource CD: Biotechnology in Agriculture and the Environment Teacher Resource CD: Biotechnology in Forensic Science Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.PS.2.2.	<p>Science, Technology, and Society: Compare the risks and benefits of potential solutions to technological issues</p> <ul style="list-style-type: none"> Teacher Resource CD: Biotechnology in Agriculture and the Environment Teacher Resource CD: Biotechnology in Forensic Science Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / COURSE	HI.SC.BS.	Biological Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.BS.1.	The Scientific Process: SCIENTIFIC INVESTIGATION: Discover, invent, and investigate using the skills necessary to engage in the scientific process
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.1.2.	<p>Scientific Inquiry: Design and safely implement an experiment, including the appropriate use of tools and techniques to organize, analyze, and validate data</p> <ul style="list-style-type: none"> Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops

		<ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
<p>PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION</p>	<p>SC.BS.1.4.</p>	<p>Scientific Inquiry: Determine the connection(s) among hypotheses, scientific evidence, and conclusions</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect

		<ul style="list-style-type: none"> • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
<p>PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION</p>	<p>SC.BS.1.5.</p>	<p>Scientific Inquiry: Communicate the components of a scientific investigation, using appropriate techniques</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
<p>PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION</p>	<p>SC.BS.1.7.</p>	<p>Scientific Knowledge: Revise, as needed, conclusions and explanations based on new evidence</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill

		<ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
CONTENT STANDARD / COURSE	HI.SC.BS.	Biological Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.BS.2.	The Scientific Process: NATURE OF SCIENCE: Understand that science, technology, and society are interrelated
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.2.1.	Science, Technology, and Society: Explain how scientific advancements and emerging technology have influenced society <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.2.2.	Science, Technology, and Society: Compare the risks and benefits of potential solutions to technological issues <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / COURSE	HI.SC.BS.	Biological Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.BS.3.	Life and Environmental Sciences: ORGANISMS AND THE ENVIRONMENT: Understand the unity, diversity, and interrelationships of organisms, including their relationship to cycles of matter and energy in the environment

PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.3.3.	<p>Cycles of Matter and Energy: Explain how matter and energy flow through living systems and the physical environment</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS
CONTENT STANDARD / COURSE	HI.SC.BS.	Biological Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.BS.4.	Life and Environmental Sciences: STRUCTURE AND FUNCTION IN ORGANISMS: Understand the structures and functions of living organisms and how organisms can be compared scientifically
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.4.1.	<p>Cells, Tissues, Organs, and Organ Systems: Describe different cell parts and their functions</p> <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.4.3.	<p>Cells, Tissues, Organs, and Organ Systems: Differentiate between the processes of mitosis and meiosis</p> <ul style="list-style-type: none"> • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.4.5.	<p>Cells, Tissues, Organs, and Organ Systems: Describe the components and functions of a variety of macromolecules active in biological systems</p> <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / COURSE	HI.SC.BS.	Biological Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.PS.5.	Life and Environmental Sciences: DIVERSITY, GENETICS, AND EVOLUTION: Understand genetics and biological evolution and their impact on the unity and diversity of organisms
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.5.1.	<p>Biological Evolution: Explain the theory of evolution and describe evidence that supports this theory</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait
PERFORMANCE INDICATOR / GRADE	SC.BS.5.3.	Unity and Diversity: Explain the structural properties of DNA and the role of DNA

LEVEL EXPECTATION		<p>in heredity and protein synthesis</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.5.5.	<p>Unity and Diversity: Explain chromosomal mutations, their possible causes, and their effects on genetic variation</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / COURSE	HI.SC.ES.	Earth Space Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.ES.2.	The Scientific Process: NATURE OF SCIENCE: Understand that science, technology, and society are interrelated
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ES.2.1.	<p>Science, Technology, and Society Explain how scientific advancements and emerging technology have influenced society</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ES.2.2.	<p>Science, Technology, and Society: Compare the risks and benefits of potential solutions to technological issues</p> <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ES.2.3.	<p>Science, Technology, and Society: Explain the impact of humans on the Earth system</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2:

		<ul style="list-style-type: none"> Cleaning up Mini-Oil Spills in Various Shore Environments Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ES.2.4.	<p>Science, Technology, and Society: Describe technologies used to collect information about the universe</p> <ul style="list-style-type: none"> Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS Virtual Laboratory: Preparation and Analysis of a Human Karyotype
CONTENT STANDARD / COURSE	HI.SC.PH.	Physics
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.PH.2.	Nature of Science - Understand that science, technology, and society are interrelated
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.PH.2.1.	<p>Science, Technology, and Society: Explain how scientific advancements and emerging technologies have influenced society</p> <ul style="list-style-type: none"> Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops Teacher Resource CD: Biotechnology in Agriculture and the Environment Teacher Resource CD: Biotechnology in Forensic Science Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE	SC.PH.2.2.	Science, Technology, and Society: Compare the risks and benefits of potential

INDICATOR / GRADE LEVEL EXPECTATION		<p>solutions to technological issues</p> <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / COURSE	HI.SC.CH.	Chemistry
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.CH.2.	Nature of Science - Understand that science, technology, and society are interrelated
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.CH.2.1.	<p>Science, Technology, and Society: Explain how scientific advancements and emerging technologies have influenced society</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.CH.2.2.	<p>Science, Technology, and Society: Compare the risks and benefits of potential solutions to technological issues</p> <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / COURSE	HI.SC.CH.	Chemistry
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.CH.3.	Properties of Matter -Understand different states of matter
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.CH.3.2.	<p>Acids and Bases: Use the pH scale to characterize acid and base solutions</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.CH.3.4.	<p>Acids and Bases: Explain that buffers stabilize pH in acid-base reactions</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect
CONTENT STANDARD / COURSE	HI.SC.ENV.	Environmental Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.ENV.1.	Scientific Investigation - Discover, invent, and investigate using the skills necessary to engage in the scientific process
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ENV.1.2.	<p>Scientific Inquiry: Design and safely implement an experiment, including the appropriate use of tools and techniques to organize, analyze, and validate data</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops

		<ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
<p>PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION</p>	<p>SC.ENV.1.4.</p>	<p>Scientific Inquiry: Determine the connection(s) among hypotheses, scientific evidence, and conclusions</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect

		<ul style="list-style-type: none"> • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
<p>PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION</p>	<p>SC.ENV.1.5.</p>	<p>Scientific Inquiry: Communicate the components of a scientific investigation, using appropriate techniques</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
<p>PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION</p>	<p>SC.ENV.1.7.</p>	<p>Scientific Knowledge: Revise, as needed, conclusions and explanations based on new evidence</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill

		<ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
CONTENT STANDARD / COURSE	HI.SC.ENV.	Environmental Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.ENV.2.	Nature of Science - Understand that science, technology, and society are interrelated
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ENV.2.1.	<p>Science, Technology, and Society: Explain how scientific advancements and emerging technology have influenced society</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ENV.2.2.	<p>Science, Technology, and Society: Compare the risks and benefits of potential solutions to technological issues</p> <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / COURSE	HI.SC.ENV.	Environmental Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.ENV.3.	Earth Science - Understand the physical systems of the earth.
PERFORMANCE	SC.ENV.3.4.	Forces that shape the earth: Compare different methods of generating

INDICATOR / GRADE LEVEL EXPECTATION		<p>electricity (e.g., fossil fuels, nuclear)</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes
CONTENT STANDARD / COURSE	HI.SC.ENV.	Environmental Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.ENV.4.	Life Science - Understand the interconnections of living systems.
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ENV.4.3.	<p>Systems and Connections: Explain how ecosystems respond to human activities</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes
CONTENT STANDARD / COURSE	HI.SC.ENV.	Environmental Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.ENV.5.	Interdependence of The Environment and Human Societies - Understand the interdependence between environmental systems and human societies.
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ENV.5.2.	<p>Human Impact: Assess the effect of human actions on an environmental system</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ENV.5.5.	<p>Resource Use: Compare the consumption of natural resources by different nations</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes
CONTENT STANDARD / COURSE	HI.SC.MS.	Marine Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.MS.2.	Nature of Science - Understand that science, technology, and society are interrelated
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.MS.2.1.	<p>Science, Technology, and Society: Explain how scientific advancements and emerging technology have influenced society</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1:

		<p>Genetically Modified Crops</p> <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.MS.2.2.	<p>Science, Technology, and Society: Compare the risks and benefits of potential solutions to technological issues</p> <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / COURSE	HI.SC.MS.	Marine Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.MS.4.	Ecological Systems - Understand the locations and characteristics of marine ecosystems.
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.MS.4.1.	<p>Ecosystems: Differentiate freshwater, brackish, and saltwater ecosystems</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments
CONTENT STANDARD / COURSE	HI.SC.MS.	Marine Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.MS.6.	Interdependence of Humans and the Ocean - Understand the interdependence of humans and the ocean.
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.MS.6.4.	<p>Human Impact Explain how human activities and development lead to marine pollution (e.g., point sources, non-point sources)</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes

**Hawaii Content and Performance Standards
Science
Grade 10**

CONTENT STANDARD / COURSE	HI.SC.PS.	Physical Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.PS.2.	The Scientific Process: NATURE OF SCIENCE: Understand that science, technology, and society are interrelated
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.PS.2.1.	<p>Science, Technology, and Society: Explain how scientific advancements and emerging technologies have influenced society</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science

		<ul style="list-style-type: none"> Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.PS.2.2.	<p>Science, Technology, and Society: Compare the risks and benefits of potential solutions to technological issues</p> <ul style="list-style-type: none"> Teacher Resource CD: Biotechnology in Agriculture and the Environment Teacher Resource CD: Biotechnology in Forensic Science Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / COURSE	HI.SC.BS.	Biological Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.BS.1.	The Scientific Process: SCIENTIFIC INVESTIGATION: Discover, invent, and investigate using the skills necessary to engage in the scientific process
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.1.2.	<p>Scientific Inquiry: Design and safely implement an experiment, including the appropriate use of tools and techniques to organize, analyze, and validate data</p> <ul style="list-style-type: none"> Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS Virtual Laboratory: Preparation and Analysis of a Human Karyotype
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.1.4.	<p>Scientific Inquiry: Determine the connection(s) among hypotheses, scientific evidence, and conclusions</p> <ul style="list-style-type: none"> Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops

		<ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
<p>PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION</p>	<p>SC.BS.1.5.</p>	<p>Scientific Inquiry: Communicate the components of a scientific investigation, using appropriate techniques</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect

		<ul style="list-style-type: none"> • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.1.7.	<p>Scientific Knowledge: Revise, as needed, conclusions and explanations based on new evidence</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
CONTENT STANDARD / COURSE	HI.SC.BS.	Biological Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.BS.2.	The Scientific Process: NATURE OF SCIENCE: Understand that science, technology, and society are interrelated
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.2.1.	<p>Science, Technology, and Society: Explain how scientific advancements and emerging technology have influenced society</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1:

		<p>Genetically Modified Crops</p> <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.2.2.	<p>Science, Technology, and Society: Compare the risks and benefits of potential solutions to technological issues</p> <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / COURSE	HI.SC.BS.	Biological Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.BS.3.	<p>Life and Environmental Sciences: ORGANISMS AND THE ENVIRONMENT: Understand the unity, diversity, and interrelationships of organisms, including their relationship to cycles of matter and energy in the environment</p>
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.3.3.	<p>Cycles of Matter and Energy: Explain how matter and energy flow through living systems and the physical environment</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS
CONTENT STANDARD / COURSE	HI.SC.BS.	Biological Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.BS.4.	<p>Life and Environmental Sciences: STRUCTURE AND FUNCTION IN ORGANISMS: Understand the structures and functions of living organisms and how organisms can be compared scientifically</p>
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.4.1.	<p>Cells, Tissues, Organs, and Organ Systems: Describe different cell parts and their functions</p> <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.4.3.	<p>Cells, Tissues, Organs, and Organ Systems: Differentiate between the processes of mitosis and meiosis</p> <ul style="list-style-type: none"> • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.4.5.	<p>Cells, Tissues, Organs, and Organ Systems: Describe the components and functions of a variety of macromolecules active in biological systems</p> <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Medicine

CONTENT STANDARD / COURSE	HI.SC.BS.	Biological Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.PS.5.	Life and Environmental Sciences: DIVERSITY, GENETICS, AND EVOLUTION: Understand genetics and biological evolution and their impact on the unity and diversity of organisms
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.5.1.	<p>Biological Evolution: Explain the theory of evolution and describe evidence that supports this theory</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.5.3.	<p>Unity and Diversity: Explain the structural properties of DNA and the role of DNA in heredity and protein synthesis</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.BS.5.5.	<p>Unity and Diversity: Explain chromosomal mutations, their possible causes, and their effects on genetic variation</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / COURSE	HI.SC.ES.	Earth Space Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.ES.2.	The Scientific Process: NATURE OF SCIENCE: Understand that science, technology, and society are interrelated
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ES.2.1.	<p>Science, Technology, and Society Explain how scientific advancements and emerging technology have influenced society</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops

		<ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ES.2.2.	<p>Science, Technology, and Society: Compare the risks and benefits of potential solutions to technological issues</p> <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ES.2.3.	<p>Science, Technology, and Society: Explain the impact of humans on the Earth system</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ES.2.4.	<p>Science, Technology, and Society: Describe technologies used to collect information about the universe</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS

		<ul style="list-style-type: none"> Virtual Laboratory: Preparation and Analysis of a Human Karyotype
CONTENT STANDARD / COURSE	HI.SC.PH.	Physics
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.PH.2.	Nature of Science - Understand that science, technology, and society are interrelated
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.PH.2.1.	<p>Science, Technology, and Society: Explain how scientific advancements and emerging technologies have influenced society</p> <ul style="list-style-type: none"> Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops Teacher Resource CD: Biotechnology in Agriculture and the Environment Teacher Resource CD: Biotechnology in Forensic Science Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.PH.2.2.	<p>Science, Technology, and Society: Compare the risks and benefits of potential solutions to technological issues</p> <ul style="list-style-type: none"> Teacher Resource CD: Biotechnology in Agriculture and the Environment Teacher Resource CD: Biotechnology in Forensic Science Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / COURSE	HI.SC.CH.	Chemistry
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.CH.2.	Nature of Science - Understand that science, technology, and society are interrelated
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.CH.2.1.	<p>Science, Technology, and Society: Explain how scientific advancements and emerging technologies have influenced society</p> <ul style="list-style-type: none"> Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops Teacher Resource CD: Biotechnology in Agriculture and the Environment Teacher Resource CD: Biotechnology in Forensic Science Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.CH.2.2.	<p>Science, Technology, and Society: Compare the risks and benefits of potential solutions to technological issues</p> <ul style="list-style-type: none"> Teacher Resource CD: Biotechnology in Agriculture and the Environment Teacher Resource CD: Biotechnology in Forensic Science Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / COURSE	HI.SC.CH.	Chemistry
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.CH.3.	Properties of Matter -Understand different states of matter

PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.CH.3.2.	Acids and Bases: Use the pH scale to characterize acid and base solutions <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.CH.3.4.	Acids and Bases: Explain that buffers stabilize pH in acid-base reactions <ul style="list-style-type: none"> • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect
CONTENT STANDARD / COURSE	HI.SC.ENV.	Environmental Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.ENV.1.	Scientific Investigation - Discover, invent, and investigate using the skills necessary to engage in the scientific process
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ENV.1.2.	Scientific Inquiry: Design and safely implement an experiment, including the appropriate use of tools and techniques to organize, analyze, and validate data <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ENV.1.4.	Scientific Inquiry: Determine the connection(s) among hypotheses, scientific evidence, and conclusions <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops

		<ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
<p>PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION</p>	<p>SC.ENV.1.5.</p>	<p>Scientific Inquiry: Communicate the components of a scientific investigation, using appropriate techniques</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect

		<ul style="list-style-type: none"> • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ENV.1.7.	<p>Scientific Knowledge: Revise, as needed, conclusions and explanations based on new evidence</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • Biotechnology Applications: Unit 2 Lab 4 Activity 2: Analyzing Karyotypes • Biotechnology Applications: Unit 2 Lab 4 Activity 3: The Blue People of Troublesome Creek • Biotechnology Applications: Unit 2 Lab 4 Activity 4: Uncovering a Family Secret • Biotechnology Applications: Unit 2 Lab 4 Activity 5: Creating a Pedigree to Analyze a Family Trait • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 3 Lab 7 Activity 1: Comparing Electrophoresed DNA Profiles • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Biotechnology Applications: Unit 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
CONTENT STANDARD / COURSE	HI.SC.ENV.	Environmental Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.ENV.2.	Nature of Science - Understand that science, technology, and society are interrelated
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ENV.2.1.	<p>Science, Technology, and Society: Explain how scientific advancements and emerging technology have influenced society</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1:

		<p>Genetically Modified Crops</p> <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ENV.2.2.	<p>Science, Technology, and Society: Compare the risks and benefits of potential solutions to technological issues</p> <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / COURSE	HI.SC.ENV.	Environmental Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.ENV.3.	Earth Science - Understand the physical systems of the earth.
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ENV.3.4.	<p>Forces that shape the earth: Compare different methods of generating electricity (e.g., fossil fuels, nuclear)</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes
CONTENT STANDARD / COURSE	HI.SC.ENV.	Environmental Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.ENV.4.	Life Science - Understand the interconnections of living systems.
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ENV.4.3.	<p>Systems and Connections: Explain how ecosystems respond to human activities</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes
CONTENT STANDARD / COURSE	HI.SC.ENV.	Environmental Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.ENV.5.	Interdependence of The Environment and Human Societies - Understand the interdependence between environmental systems and human societies.
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ENV.5.2.	<p>Human Impact: Assess the effect of human actions on an environmental system</p> <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3:

		Examining Oil-Degrading Microbes
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.ENV.5.5.	Resource Use: Compare the consumption of natural resources by different nations <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments • Biotechnology Applications: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes
CONTENT STANDARD / COURSE	HI.SC.MS.	Marine Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.MS.2.	Nature of Science - Understand that science, technology, and society are interrelated
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.MS.2.1.	Science, Technology, and Society: Explain how scientific advancements and emerging technology have influenced society <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.MS.2.2.	Science, Technology, and Society: Compare the risks and benefits of potential solutions to technological issues <ul style="list-style-type: none"> • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
CONTENT STANDARD / COURSE	HI.SC.MS.	Marine Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.MS.4.	Ecological Systems - Understand the locations and characteristics of marine ecosystems.
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.MS.4.1.	Ecosystems: Differentiate freshwater, brackish, and saltwater ecosystems <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 2: Cleaning up Mini-Oil Spills in Various Shore Environments
CONTENT STANDARD / COURSE	HI.SC.MS.	Marine Science
CONTENT STANDARD / PERFORMANCE INDICATOR	SC.MS.6.	Interdependence of Humans and the Ocean - Understand the interdependence of humans and the ocean.
PERFORMANCE INDICATOR / GRADE LEVEL EXPECTATION	SC.MS.6.4.	Human Impact Explain how human activities and development lead to marine pollution (e.g., point sources, non-point sources) <ul style="list-style-type: none"> • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill

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| | | <ul style="list-style-type: none">• Biotechnology Applications: Unit 1 Lab 3 Activity 2:
Cleaning up Mini-Oil Spills in Various Shore Environments• Biotechnology Applications: Unit 1 Lab 3 Activity 3:
Examining Oil-Degrading Microbes |
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