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

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Connecticut Curriculum Frameworks
Science
Grade 7

DOMAIN / CONTENT STANDARD	CT.SI.	Scientific Inquiry: Scientific inquiry is a thoughtful and coordinated attempt to search out, describe, explain and predict natural phenomena. Scientific inquiry progresses through a continuous process of questioning, data collection, analysis and interpretation. Scientific inquiry requires the sharing of findings and ideas for critical review by colleagues and other scientists.
STATE FRAMEWORK	C.INQ.1.	Identify questions that can be answered through scientific investigation. • 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 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
STATE FRAMEWORK	C.INQ.2.	Read, interpret and examine the credibility of scientific claims in different sources of information. • 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
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STATE FRAMEWORK	**C.INQ.5.**	Use appropriate tools and techniques to make observations and gather data. • 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
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DOMAIN / CONTENT STANDARD	**CT.SN.**	**Scientific Numeracy: Scientific numeracy includes the ability to use mathematical operations and procedures to calculate, analyze and present scientific data and ideas.**
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DOMAIN / CONTENT STANDARD	**CT.7.2.**	**Structure and Function: Many organisms, including humans, have specialized organ systems that interact with each other to maintain dynamic internal balance.**
STATE FRAMEWORK	**C.15.**	Describe the basic structures of an animal cell, including nucleus, cytoplasm, mitochondria and cell membrane, and how they function to support life. • Teacher Resource CD: Biotechnology in Medicine
DOMAIN / CONTENT STANDARD	**CT.7.4.**	**Science and Technology in Society: Technology allows us to improve food production and preservation, thus improving our ability to meet the nutritional needs of growing populations.**
STATE FRAMEWORK	**C.21.**	Describe how freezing, dehydration, pickling and irradiation prevent food spoilage caused by microbes. • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way

Connecticut Curriculum Frameworks
Science
Grade 8

DOMAIN / CONTENT STANDARD	**CT.SI.**	**Scientific Inquiry: Scientific inquiry is a thoughtful and coordinated attempt to search out, describe, explain and predict natural phenomena. Scientific inquiry progresses through a continuous process of questioning, data collection, analysis and interpretation. Scientific inquiry requires the sharing of findings and ideas for critical review by colleagues and other scientists.**
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		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
STATE FRAMEWORK	**C.INQ.5.**	Use appropriate tools and techniques to make observations and gather data. • 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
STATE FRAMEWORK	**C.INQ.7.**	Identify and present relationships between variables in appropriate graphs. • 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
STATE FRAMEWORK	**C.INQ.8.**	Draw conclusions and identify sources of error. • 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
STATE FRAMEWORK	**C.INQ.10.**	Communicate about science in different formats, using relevant science vocabulary, supporting evidence and clear logic. • 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
DOMAIN / CONTENT STANDARD	**CT.SL.**	**Scientific Literacy: Scientific literacy includes speaking, listening, presenting, interpreting, reading and writing about science. Scientific literacy also includes the ability to search for and assess the relevance and credibility of scientific information found in various print and electronic media.**
STATE FRAMEWORK	**C.INQ.1.**	Identify questions that can be answered through scientific investigation.

		• 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 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
STATE FRAMEWORK	**C.INQ.2.**	Read, interpret and examine the credibility of scientific claims in different sources of information. • 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
STATE FRAMEWORK	**C.INQ.3.**	Design and conduct appropriate types of scientific investigations to answer different questions. • 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
STATE FRAMEWORK	**C.INQ.5.**	Use appropriate tools and techniques to make observations and gather data. • 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
STATE FRAMEWORK	**C.INQ.7.**	Identify and present relationships between variables in appropriate graphs. • 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

STATE FRAMEWORK	**C.INQ.8.**	Draw conclusions and identify sources of error. • 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
STATE FRAMEWORK	**C.INQ.10.**	Communicate about science in different formats, using relevant science vocabulary, supporting evidence and clear logic. • 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
DOMAIN / CONTENT STANDARD	**CT.SN.**	**Scientific Numeracy: Scientific numeracy includes the ability to use mathematical operations and procedures to calculate, analyze and present scientific data and ideas.**
STATE FRAMEWORK	**C.INQ.1.**	Identify questions that can be answered through scientific investigation. • 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 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
STATE FRAMEWORK	**C.INQ.2.**	Read, interpret and examine the credibility of scientific claims in different sources of information. • 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
STATE FRAMEWORK	**C.INQ.3.**	Design and conduct appropriate types of scientific investigations to answer different questions. • 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
STATE FRAMEWORK	**C.INQ.5.**	Use appropriate tools and techniques to make observations and gather data. • 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
STATE FRAMEWORK	**C.INQ.7.**	Identify and present relationships between variables in appropriate graphs. • 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
STATE FRAMEWORK	**C.INQ.8.**	Draw conclusions and identify sources of error. • 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
STATE FRAMEWORK	**C.INQ.10.**	Communicate about science in different formats, using relevant science vocabulary, supporting evidence and clear logic. • 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
DOMAIN / CONTENT STANDARD	**CT.8.2.**	**Heredity and Evolution: Reproduction is a characteristic of living systems and it is essential for the continuation of every species.**
STATE FRAMEWORK	**C.25.**	Explain the similarities and differences in cell division in somatic and germ cells. • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
STATE FRAMEWORK	**C.27.**	Describe how genetic information is organized in genes on chromosomes, and explain sex determination in humans. • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • 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 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine

		• Virtual Laboratory: Preparation and Analysis of a Human Karyotype

Connecticut Curriculum Frameworks
Science
Grade 9

DOMAIN / CONTENT STANDARD	CT.SI.	**Scientific Inquiry: Scientific inquiry is a thoughtful and coordinated attempt to search out, describe, explain and predict natural phenomena. Scientific inquiry progresses through a continuous process of questioning, data collection, analysis and interpretation. Scientific inquiry requires the sharing of findings and ideas for critical review by colleagues and other scientists.**
STATE FRAMEWORK	D.INQ.1.	Identify questions that can be answered through scientific investigation. • 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 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
STATE FRAMEWORK	D.INQ.3.	Formulate a testable hypothesis and demonstrate logical connections between the scientific concepts guiding the hypothesis and the design of the experiment. • 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
STATE FRAMEWORK	**D.INQ.4.**	Design and conduct appropriate types of scientific investigations to answer different questions. • 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

STATE FRAMEWORK	**D.INQ.6.**	Use appropriate tools and techniques to make observations and gather data. • 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
STATE FRAMEWORK	**D.INQ.8.**	Use mathematical operations to analyze and interpret data, and present relationships between variables in appropriate forms. • 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
STATE FRAMEWORK	**D.INQ.10.**	Communicate about science in different formats, using relevant science vocabulary, supporting evidence and clear logic. • 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
DOMAIN / CONTENT STANDARD	**CT.SL.**	**Scientific Literacy: Scientific literacy includes the ability to read, write, discuss and present coherent ideas about science. Scientific literacy also includes the ability to search for and assess the relevance and credibility of scientific information found in various print and electronic media.**
STATE FRAMEWORK	**D.INQ.1.**	Identify questions that can be answered through scientific investigation. • 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 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
STATE FRAMEWORK	**D.INQ.3.**	Formulate a testable hypothesis and demonstrate logical connections between the scientific concepts guiding the hypothesis and the design of the experiment. • 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
STATE FRAMEWORK	**D.INQ.4.**	Design and conduct appropriate types of scientific investigations to answer different questions. • 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
STATE FRAMEWORK	**D.INQ.6.**	Use appropriate tools and techniques to make observations and gather data. • 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
STATE FRAMEWORK	**D.INQ.8.**	Use mathematical operations to analyze and interpret data, and present relationships between variables in appropriate forms. • 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
STATE FRAMEWORK	**D.INQ.10.**	Communicate about science in different formats, using relevant science vocabulary, supporting evidence and clear logic. • 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
DOMAIN / CONTENT STANDARD	**CT.SN.**	**Scientific Numeracy: Scientific numeracy includes the ability to use mathematical operations and procedures to calculate, analyze and present scientific data and ideas.**
STATE FRAMEWORK	**D.INQ.1.**	Identify questions that can be answered through scientific investigation. • 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 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
STATE FRAMEWORK	**D.INQ.3.**	Formulate a testable hypothesis and demonstrate logical connections between the scientific concepts guiding the hypothesis and the design of the experiment. • 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
STATE FRAMEWORK	**D.INQ.4.**	Design and conduct appropriate types of scientific investigations to answer different questions. • 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
STATE FRAMEWORK	**D.INQ.6.**	Use appropriate tools and techniques to make observations and gather data. • 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

STATE FRAMEWORK	**D.INQ.8.**	Use mathematical operations to analyze and interpret data, and present relationships between variables in appropriate forms. • 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
STATE FRAMEWORK	**D.INQ.10.**	Communicate about science in different formats, using relevant science vocabulary, supporting evidence and clear logic. • 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
DOMAIN / CONTENT STANDARD	**CT.9.3.**	**Energy Transformations: Science and Technology in Society: Various sources of energy are used by humans and all have advantages and disadvantages.**
STATE FRAMEWORK	**D.8.**	Describe the availability, current uses and environmental issues related to the use of fossil and nuclear fuels to produce electricity. • 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
DOMAIN / CONTENT STANDARD	**CT.9.4.**	**Chemical Structures and Properties: Properties of Matter: Atoms react with one another to form new molecules.**
STATE FRAMEWORK	**D.12.**	Explain the chemical composition of acids and bases, and explain the change of pH in neutralization reactions. • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way
DOMAIN / CONTENT STANDARD	**CT.9.8.**	**Chemical Structure and Properties: Science and Technology in Society: The use of resources by human populations may affect the quality of the environment.**
STATE FRAMEWORK	**D.24.**	Explain how the accumulation of mercury, phosphates and nitrates affects the quality of water and the organisms that live in rivers, lakes and oceans. • 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
DOMAIN / CONTENT STANDARD	**CT.9.9.**	**Chemical Structure and Properties: Science and Technology in Society: Some materials can be recycled, but others accumulate in the environment and may affect the balance of the Earth systems.**
STATE FRAMEWORK	**D.25.**	Explain how land development, transportation options and consumption of resources may affect the environment. • 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

Connecticut Curriculum Frameworks
Science
Grade 10

DOMAIN / CONTENT STANDARD	CT.SI.	**Scientific Inquiry: Scientific inquiry is a thoughtful and coordinated attempt to search out, describe, explain and predict natural phenomena. Scientific inquiry progresses through a continuous process of questioning, data collection, analysis and interpretation. Scientific inquiry requires the sharing of findings and ideas for critical review by colleagues and other scientists.**
STATE FRAMEWORK	D.INQ.1.	Identify questions that can be answered through scientific investigation. • 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 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
STATE FRAMEWORK	D.INQ.3.	Formulate a testable hypothesis and demonstrate logical connections between the scientific concepts guiding the hypothesis and the design of the experiment. • 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
STATE FRAMEWORK	**D.INQ.4.**	Design and conduct appropriate types of scientific investigations to answer different questions. • 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
STATE FRAMEWORK	**D.INQ.6.**	Use appropriate tools and techniques to make observations and gather data. • 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
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		• 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
STATE FRAMEWORK	**D.INQ.10.**	Communicate about science in different formats, using relevant science vocabulary, supporting evidence and clear logic. • 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
DOMAIN / CONTENT STANDARD	**CT.SL.**	**Scientific Literacy: Scientific literacy includes the ability to read, write, discuss and present coherent ideas about science. Scientific literacy also includes the ability to search for and assess the relevance and credibility of scientific information found in various print and electronic media.**
STATE FRAMEWORK	**D.INQ.1.**	Identify questions that can be answered through scientific investigation. • 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 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
STATE FRAMEWORK	**D.INQ.3.**	Formulate a testable hypothesis and demonstrate logical connections between the scientific concepts guiding the hypothesis and the design of the experiment. • 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
STATE FRAMEWORK	**D.INQ.4.**	Design and conduct appropriate types of scientific investigations to answer different questions. • 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
STATE FRAMEWORK	**D.INQ.6.**	Use appropriate tools and techniques to make observations and gather data. • 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
STATE FRAMEWORK	**D.INQ.8.**	Use mathematical operations to analyze and interpret data, and present relationships between variables in appropriate forms. • 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
STATE FRAMEWORK	**D.INQ.10.**	Communicate about science in different formats, using relevant science

		vocabulary, supporting evidence and clear logic. • 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
DOMAIN / CONTENT STANDARD	**CT.SN.**	**Scientific Numeracy: Scientific numeracy includes the ability to use mathematical operations and procedures to calculate, analyze and present scientific data and ideas.**
STATE FRAMEWORK	**D.INQ.1.**	Identify questions that can be answered through scientific investigation. • 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 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
STATE FRAMEWORK	**D.INQ.3.**	Formulate a testable hypothesis and demonstrate logical connections between the scientific concepts guiding the hypothesis and the design of the experiment. • 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
STATE FRAMEWORK	**D.INQ.4.**	Design and conduct appropriate types of scientific investigations to answer different questions. • 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
STATE FRAMEWORK	**D.INQ.6.**	Use appropriate tools and techniques to make observations and gather data. • 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
STATE FRAMEWORK	**D.INQ.8.**	Use mathematical operations to analyze and interpret data, and present relationships between variables in appropriate forms. • 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
STATE FRAMEWORK	**D.INQ.10.**	Communicate about science in different formats, using relevant science vocabulary, supporting evidence and clear logic. • 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
DOMAIN / CONTENT STANDARD	**CT.10.1.**	**Cell Chemistry and Biotechnology: Fundamental life processes depend on the physical structure and the chemical activities of the cell.**
STATE FRAMEWORK	**D.28.**	Describe the general role of DNA and RNA in protein synthesis. • 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
STATE FRAMEWORK	**D.29.**	Describe the general role of enzymes in metabolic cell processes. • Biotechnology Applications: Unit 1 Lab 2 Activity 1: Making Cheese the Biotech Way • Biotechnology Applications: Unit 4 Lab 8 Activity 1: Case of the Second Examination • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science
DOMAIN / CONTENT STANDARD	**CT.10.2.**	**Cell Chemistry and Biotechnology: Science and Technology in Society: Microorganisms have an essential role in life processes and cycles on Earth.**
STATE FRAMEWORK	**D.31.**	Describe the similarities and differences between bacteria and viruses. • 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
STATE FRAMEWORK	**D.32.**	Describe how bacterial and viral infectious diseases are transmitted, and explain the roles of sanitation, vaccination and antibiotic medications in the prevention and treatment of infectious diseases. • 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 • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Medicine
STATE FRAMEWORK	**D.33.**	Explain how bacteria and yeasts are used to produce foods for human consumption. • 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
DOMAIN / CONTENT STANDARD	**CT.10.3.**	**Cell Chemistry and Biotechnology: Science and Technology in Society: Similarities in the chemical and structural properties of DNA in all living organisms allow the transfer of genes from one organism to another.**
STATE FRAMEWORK	**D.34.**	Describe, in general terms, how the genetic information of organisms can be altered to make them produce new materials. • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • 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 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Teacher Resource CD: Biotechnology in Agriculture and the

		Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
STATE FRAMEWORK	**D.35.**	Explain the risks and benefits of altering the genetic composition and cell products of existing organisms. • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill • Biotechnology Applications: Unit 3 Lab 6 Activity 1: Modeling DNA Profiles to Solve a Mystery • Teacher Resource CD: Biotechnology in Agriculture and the Environment • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
DOMAIN / CONTENT STANDARD	**CT.10.4.**	**Genetics, Evolution and Biodiversity: Heredity and Evolution: In sexually reproducing organisms, each offspring contains a mix of characteristics inherited from both parents.**
STATE FRAMEWORK	**D.37.**	Use the Punnet Square technique to predict the distribution of traits in mono- and di-hybrid crossings. • Biotechnology Applications: Unit 2 Lab 5 Activity 1: Diagnosing a Gene Defect • Teacher Resource CD: Biotechnology in Forensic Science
STATE FRAMEWORK	**D.38.**	Deduce the probable mode of inheritance of traits (e.g., recessive/dominant, sex-linked) from pedigree diagrams showing phenotypes. • Biotechnology Applications: Unit 1 Lab 1 Activity 1: Genetically Modified Crops • Biotechnology Applications: Unit 2 Lab 4 Activity 1: Taking a Case History of Baby Mike • 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 4 Lab 8 Activity 2: Finding Out Who Is at Risk for SARS • Teacher Resource CD: Biotechnology in Forensic Science • Teacher Resource CD: Biotechnology in Medicine
STATE FRAMEWORK	**D.39.**	Describe the difference between genetic disorders and infectious diseases. • 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 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 Medicine • Virtual Laboratory: Preparation and Analysis of a Human Karyotype
DOMAIN / CONTENT STANDARD	**CT.10.5.**	**Genetics, Evolution and Biodiversity: Evolution and biodiversity are the result of genetic changes that occur over time in constantly changing environments.**
STATE FRAMEWORK	**D.40.**	Explain how the processes of genetic mutation and natural selection are related to the evolution of species. • 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 • Teacher Resource CD: Biotechnology in Medicine
STATE FRAMEWORK	**D.41.**	Explain how the current theory of evolution provides a scientific explanation for fossil records of ancient life forms. • 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
DOMAIN / CONTENT STANDARD	**CT.10.6.**	**Genetics, Evolution and Biodiversity: Science and Technology in Society: Living organisms have the capability of producing populations of unlimited size, but the environment can support only a limited number of individuals from each species.**
STATE FRAMEWORK	**D.43.**	Describe the factors that affect the carrying capacity of the environment. • 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 3: The Blue People of Troublesome Creek
STATE FRAMEWORK	**D.44.**	Explain how change in population density is affected by emigration, immigration, birth rate and death rate, and relate these factors to the exponential growth of human populations. • 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 3: The Blue People of Troublesome Creek