



Unit 4: CTE Alignment Matrix

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Executive Summary

Sponsored by Genentech, Futurelab+ brought together a coalition of partners to develop an innovative, modular, 2-year biotechnology curriculum, along with instructional materials, to expose students and educators to the breadth of education and career pathways across biotechnology. To increase adoption and access to such curricula in California and beyond, the modular curriculum was designed to align with the [California Career Technical Education \(CTE\) Model Curriculum Standards for Biotechnology](#), meet at least 1 year of the [University of California science \(D\) subject requirement](#), and incorporate some of the three-dimensional learning innovations of the [Next Generation Science Standards](#). The 2-year biotechnology curriculum has four core units per year; each core unit has nine lessons and a lab that each take approximately 1 week to complete (9–10 weeks for the full unit). In total, the biotechnology curriculum has 72 lessons and eight labs that span 2 full instructional years. Because the Futurelab+ biotechnology curriculum is modular, teachers can select specific units and materials to design biotechnology courses that are relevant and appropriate for their students and teaching environments.

The purpose of this report is to provide teachers an independent review of which California CTE biotechnology standards are addressed within the curriculum and where they are addressed. The matrices that follow indicate the assignments and/or activities in which students demonstrate their understanding of a particular standard.

This review was completed on materials received March 24, 2022, and has not been updated to reflect any revisions made to materials since then. Only the standards met within Unit 4 are included in the matrices.

Anchor Standards

Standard	Description	Assessed (all student sections)
<p>4.0 Technology: Use existing and emerging technology to investigate, research, and produce products and services, including new information, as required in the Health Science and Medical Technology sector workplace environment. (Direct alignment with Writing Standards WS 11–12.6)</p>		
4.3	Use information and communication technologies to synthesize, summarize, compare, and contrast information from multiple sources.	<p>Lesson 4, Day 1 <i>Thumbs Up, Thumbs Down</i>—strategy, assessment at teacher discretion <i>Connect the Dots</i>—strategy, assessment at teacher discretion</p> <p>Lesson 4, Day 3 <i>Three Truths and a Lie</i>—capture sheet <i>Design Journal Entry</i></p> <p>Lesson 4, Day 5 <i>Synthetic Organism</i>—poster and rubric <i>Gallery Walk</i>—strategy, assessment at teacher discretion <i>Plus/Delta</i>—strategy, assessment at teacher discretion</p> <p>Lesson 6, Day 1 <i>GMO Plant</i>—rubric <i>Paper Slide</i>—strategy, assessment at teacher discretion</p> <p>Lesson 6, Day 2 <i>GMO Webquest</i>—capture sheet and rubric</p> <p>Lesson 6, Day 3 <i>GMO Trading Card</i>—activity and rubric</p> <p>Lesson 6, Day 4 <i>Golden Rice</i>—anticipation guide <i>Golden Rice Response Prompts</i>—capture sheet and rubric <i>Design Journal Entry</i></p>
<p>5.0 Problem Solving and Critical Thinking: Conduct short, as well as more sustained, research to create alternative solutions to answer a question or solve a problem unique to the Health Science and Medical Technology sector using critical and creative thinking, logical reasoning, analysis, inquiry, and problem-solving techniques. (Direct alignment with WS 11-12.7)</p>		
5.4	Interpret information and draw conclusions, based on the best analysis, to make informed decisions.	<p>Lesson 4, Day 1 <i>Thumbs Up, Thumbs Down</i>—strategy, assessment at teacher discretion <i>Connect the Dots</i>—strategy, assessment at teacher discretion</p> <p>Lesson 4, Day 2 <i>DNA Synthesis: Mission NOT Impossible!</i>—capture sheet <i>Round Robin</i>—strategy, assessment at teacher discretion</p>

Standard	Description	Assessed (all student sections)
		<p>Lesson 4, Day 3 <i>Three Truths and a Lie</i>—capture sheet <i>Design Journal Entry</i> <i>Round Robin</i>—strategy, assessment at teacher discretion</p> <p>Lesson 4, Day 4 <i>What Are the Boundaries of Synthetic Biology?</i>—capture sheet <i>Computational Synthetic Biology</i>—video-sequencing activity and capture sheet <i>Thumbs Up, Thumbs Down</i>—strategy, assessment at teacher discretion <i>Design Journal Entry</i></p> <p>Lesson 4, Day 5 <i>Synthetic Organism</i>—poster and rubric <i>Gallery Walk</i>—strategy, assessment at teacher discretion <i>Plus/Delta</i>—strategy, assessment at teacher discretion</p>
5.6	Read, interpret, and extract information from documents.	<p>Lesson 4, Day 3 <i>Three Truths and a Lie</i>—capture sheet <i>Design Journal Entry</i></p> <p>Lesson 4, Day 4 <i>Guiding Ethical Principles in Engineering Biology Research</i>—sticky note activity, assessment at teacher discretion <i>Design Journal Entry</i></p> <p>Lesson 4, Day 5 <i>Synthetic Organism</i>—poster and rubric <i>Gallery Walk</i>—strategy, assessment at teacher discretion <i>Plus/Delta</i>—strategy, assessment at teacher discretion</p>

Pathway Standards

Standard	Description	Assessed
A1.0: Define and assess biotechnology and recognize the diverse applications and impact on society.		
A1.3	Recognize the role of innovation in creation of emerging biotechnology careers, including those in nanotechnology, biofuels, and forensics.	<p>Lesson 5, Day 2 <i>Brainstorm</i>—strategy, assessment at teacher discretion</p> <p>Lesson 5, Day 5 <i>Design Journal Entry</i></p>
A1.4	Research and identify public misunderstandings related to	Lesson 6, Day 1

Standard	Description	Assessed
	biotechnology and discern the source of these misunderstandings.	<p><i>Pick a Stick</i>—strategy, assessment at teacher discretion</p> <p><i>Brainstorm</i>—strategy, assessment at teacher discretion</p> <p>Lesson 6, Day 2</p> <p><i>GMO Webquest</i>—capture sheet and rubric</p> <p><i>GMO Safety Article Response</i>—capture sheet and rubric</p> <p>Lesson 6, Day 3</p> <p><i>How Do GMOs Improve Health?</i>—poster and rubric</p> <p><i>Gallery Walk</i>—activity, assessment at teacher discretion</p> <p>Lesson 6, Day 4</p> <p><i>Golden Rice</i>—anticipation guide</p> <p><i>Golden Rice Response Prompts</i>—capture sheet and rubric</p> <p>Lesson 6, Day 5</p> <p><i>Statement Reflection</i></p> <p><i>Debate</i>—rubric</p> <p><i>Philosophical Chairs</i>—activity, assessment at teacher discretion</p>
<p>A2.0: Understand the ethical, moral, legal, and cultural issues related to the use of biotechnology research and product development.</p>		
A2.1	Know the relationship between morality and ethics in the development of biotechnology health care products.	<p>Lesson 9, Day 1</p> <p><i>Virtual Polling</i>—strategy, assessment at teacher discretion</p> <p><i>Think-Pair-Share</i>—strategy, assessment at teacher discretion</p> <p><i>Design Journal Entry</i></p> <p>Lesson 9, Day 2</p> <p><i>Think-Pair-Share</i>—strategy, assessment at teacher discretion</p> <p><i>Raise a Righteous Hand</i>—strategy, assessment at teacher discretion</p> <p><i>Question Identity</i>—assignment</p> <p>Lesson 9, Day 3</p> <p><i>Case Study Video Storyboard</i>—capture sheet and rubric</p> <p>Lesson 9, Day 3 (optional activity)</p> <p><i>Ethical Scenario</i>—capture sheet</p> <p>Lesson 9, Day 4</p> <p><i>Socratic Seminar</i>—preparation homework</p> <p><i>Socratic Seminar</i>—capture sheet, parts 1 and 2</p> <p><i>Socratic Seminar</i>—reflection and optional participation rubric</p>

Standard	Description	Assessed
		<p>Lesson 9, Days 5–7 <i>Scientific Breakthrough Briefings</i> <i>Final Project Packet</i> <i>Design Journal Entry</i></p>
A2.4	Understand the critical need for ethical policies and procedures for institutions engaged in biotechnology research and product development.	<p>Lesson 2, Day 2 <i>TOP Strategy</i>—activity, assessment at teacher discretion <i>Tweet, Tweet!</i>—activity, assessment at teacher discretion <i>Gallery Walk</i>—activity, assessment at teacher discretion</p> <p>Lesson 2, Day 3 <i>Cancer Health Disparities</i>—capture sheet <i>Cancer Health Disparities</i>—reflection paragraph, assessment at teacher discretion <i>Cancer PSA</i>—capture sheet</p> <p>Lesson 2, Day 5 <i>The Ownership of DNA</i>—assignment and rubric</p>
A2.6	Prepare a presentation comparing the benefits and harm that can be the result of biotechnology innovations in both the research and application phases and which course of action will result in the best outcomes.	<p>Lesson 4, Day 5 <i>Synthetic Organism</i>—poster and rubric <i>Gallery Walk</i>—strategy, assessment at teacher discretion <i>Plus/Delta</i>—strategy, assessment at teacher discretion</p>
<p>A3.0: Demonstrate competencies in the fundamentals of molecular cell biology, including deoxyribonucleic acid (DNA) and proteins and standard techniques for their purification and manipulation.</p>		
A3.1	Define and describe the structure and function of DNA ribonucleic acid (RNA) and proteins, explain the consequences of DNA mutations on proteins.	<p>Lesson 1, Day 1 <i>Henrietta Lacks</i>—video and capture sheet <i>Stand and Share</i>—classroom discussion, assessment at teacher discretion <i>Hallmarks of Cellular Aging</i>—presentation and rubric <i>Pick a Stick</i>—strategy, assessment at teacher discretion</p> <p>Lesson 1, Day 2 <i>Biomedical Research Conference</i>—capture sheet <i>Jigsaw Method</i>—strategy, assessment at teacher discretion <i>Autophagy WebQuest</i>—activity and capture sheet</p> <p>Lesson 1, Day 3 <i>DNA Regions</i>—capture sheet</p>

Standard	Description	Assessed
		<p>Disease and Lifestyle Factors of Cellular Aging—capture sheet and rubric <i>Design Journal Entry</i> <i>Exit Ticket</i>—strategy, assessment at teacher discretion</p> <p>Lesson 1, Day 4 <i>Internal and External Changes in Cellular Aging</i>—poster project</p> <p>Lesson 2, Day 1 <i>Modeling Recombinant DNA</i>—capture sheet <i>Exit Ticket</i>—strategy, assessment at teacher discretion <i>Design Journal Entry</i></p> <p>Lesson 2, Day 3 <i>Cancer PSA</i>—capture sheet</p> <p>Lesson 2, Day 4 <i>Longevity Genes</i>—capture sheet <i>Design Journal Entry</i></p> <p>Lesson 3, Day 1 <i>Pick a Stick</i>—strategy, assessment at teacher discretion <i>25 Things You Didn't Know</i>—poster project, assessment at teacher discretion</p> <p>Lesson 3, Day 2 <i>Proteomics Video</i>—capture sheet <i>Raise a Righteous Hand</i>—strategy, assessment at teacher discretion <i>Online Interactive: Transcribe and Translate a Gene</i>—capture sheet and flowchart</p> <p>Lesson 3, Day 3 <i>Gene Control</i>—capture sheet</p> <p>Lesson 3, Day 4 <i>Jigsaw</i>—strategy, assessment at teacher discretion <i>Create Your Own Mini Biotech Unit</i>—capture sheet <i>Design Journal Entry</i></p> <p>Lesson 8, Day 1 <i>Causes of Senescence Model</i>—capture sheet and rubric</p> <p>Lesson 8, Day 2 <i>Museum of Senescence</i>—capture sheet <i>Gallery Walk</i>—activity, assessment at teacher discretion <i>Design Journal Entry</i></p>

Standard	Description	Assessed
		<p>Lesson 8, Day 3 <i>Signs of Cellular Senescence</i>—capture sheet <i>Senescent Cell Removal</i>—capture sheet and rubric</p> <p>Lesson 8, Day 4 <i>Senolytic Drugs Presentation</i>—guidelines and rubric <i>Design Journal Entry</i></p> <p>Lesson 8, Day 5 <i>Applications of Senescence, Parts 1, 2, and 3</i>—capture sheets <i>Stand and Share</i>—activity, assessment at teacher discretion <i>Pick a Stick</i>—strategy, assessment at teacher discretion <i>Senolytics Infographic</i>—guidelines and rubric</p>
A3.3	Employ standard techniques of DNA extraction, purification, restriction digests, bacterial cell culture, and agarose gel electrophoresis and document and evaluate results.	<p>Laboratory Investigation, Day 1 <i>Agarose Gel Electrophoresis</i> (agarose gel electrophoresis) <i>Exit Ticket</i>—strategy, assessment at teacher discretion</p> <p>Laboratory Investigation, Day 2 <i>Phenomenon Charts</i> (agarose gel electrophoresis)—assessment at teacher discretion <i>Student Guide, Part 1: Pre-Lab</i> (agarose gel electrophoresis) <i>Genetic Markers of Longevity</i> (agarose gel electrophoresis)—background reading <i>Vocabulary Tool</i> (agarose gel electrophoresis)</p> <p>Laboratory Investigation, Day 3 <i>Student Guide, Part 2: Lab and Data Collection</i> (agarose gel electrophoresis)—laboratory activities <i>Student Protocol, Part 1: DNA Extraction</i> (agarose gel electrophoresis)—laboratory activity</p> <p>Laboratory Investigation, Day 3 (optional activity) <i>Student Protocol, Alternative Part 1: Strawberry DNA Extraction</i> (agarose gel electrophoresis)—laboratory activity</p> <p>Laboratory Investigation, Day 4 <i>Student Protocol, Part 2: Agarose Gel Electrophoresis</i> (agarose gel electrophoresis)—laboratory activity <i>Student Guide, Part 2: Lab and Data Collection</i> (agarose gel electrophoresis)—laboratory activity</p>

Standard	Description	Assessed
		Laboratory Investigation, Day 5 <i>Data Analysis</i> —rubric
A4.0: Recognize basic concepts in cell biology and become familiar with the laboratory tools used for their analysis.		
A4.1	List and describe the structure and function of cellular organelle.	Lesson 8, Day 1 <i>Causes of Senescence Model</i> —capture sheet and rubric Lesson 8, Day 3 <i>Senescent Cell Removal</i> —capture sheet and rubric Lesson 8, Day 4 <i>Senolytic Drugs Presentation</i> —guidelines and rubric <i>Design Journal Entry</i> Lesson 8, Day 5 <i>Senolytics Infographic</i> —guidelines and rubric
A5.0: Integrate computer skills into program components.		
A5.1	Use the Internet and World Wide Web to collect and share scientific information.	Lesson 1, Day 1 <i>Henrietta Lacks</i> —video and capture sheet <i>Stand and Share</i> —classroom discussion, assessment at teacher discretion <i>Hallmarks of Cellular Aging</i> —presentation and rubric <i>Pick a Stick</i> —strategy, assessment at teacher discretion Lesson 1, Day 2 <i>Autophagy WebQuest</i> —activity and capture sheet Lesson 1, Day 3 <i>Disease and Lifestyle Factors of Cellular Aging</i> —capture sheet and rubric Lesson 1, Day 4 <i>Internal and External Changes in Cellular Aging</i> —poster project Lesson 2, Day 1 <i>Modeling Recombinant DNA</i> —capture sheet <i>Exit Ticket</i> —strategy, assessment at teacher discretion <i>Design Journal Entry</i> Lesson 2, Day 2 <i>TOP Strategy</i> —activity, assessment at teacher discretion <i>Tweet, Tweet!</i> —activity, assessment at teacher discretion <i>Gallery Walk</i> —activity, assessment at teacher discretion

		<p>Lesson 2, Day 3 <i>Cancer Health Disparities</i>—capture sheet <i>Cancer Health Disparities</i>—reflection paragraph, assessment at teacher discretion <i>Cancer PSA</i>—capture sheet</p> <p>Lesson 2, Day 4 <i>Longevity Genes</i>—capture sheet <i>Design Journal Entry</i></p> <p>Lesson 2, Day 5 <i>The Ownership of DNA</i>—assignment and rubric</p> <p>Lesson 4, Day 3 <i>Three Truths and a Lie</i>—capture sheet <i>Design Journal Entry</i></p> <p>Lesson 4, Day 5 <i>Synthetic Organism</i>—poster and rubric <i>Gallery Walk</i>—strategy, assessment at teacher discretion <i>Plus/Delta</i>—strategy, assessment at teacher discretion</p> <p>Lesson 6, Day 1 <i>GMO Plant</i>—rubric <i>Paper Slide</i>—strategy, assessment at teacher discretion</p> <p>Lesson 6, Day 2 <i>GMO Webquest</i>—capture sheet and rubric</p> <p>Lesson 6, Day 3 <i>GMO Trading Card</i>—activity and rubric</p> <p>Lesson 7, Day 2 <i>Therapeutic vs. Reproductive Cloning</i>—T-chart, written response, Venn diagram <i>Reproductive vs. Therapeutic Cloning</i>—rubric</p> <p>Lesson 7, Day 3 <i>Cloning Facts Presentation</i>—guidelines and rubric <i>Exit Ticket</i>—strategy, assessment at teacher discretion</p> <p>Lesson 7, Day 4 <i>Biotechnology Professions Recruitment Poster</i>—activity and rubric</p> <p>Lesson 7, Day 5 <i>Ethics of Cloning</i>—presentation and rubric</p> <p>Lesson 9, Day 3 <i>Case Study Video Storyboard</i>—capture sheet and rubric</p>
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Standard	Description	Assessed
		<p>Lesson 9, Days 5–7 <i>Scientific Breakthrough Briefings</i> <i>Final Project Packet</i> <i>Design Journal Entry</i></p>
A5.2	Use a variety of methods, including literature searches in libraries, computer databases, and online for gathering background information, making observations, and collecting and organizing data.	<p>Lesson 1, Day 1 <i>Henrietta Lacks</i> (online)—video and capture sheet <i>Stand and Share</i> (online)—classroom discussion, assessment at teacher discretion <i>Hallmarks of Cellular Aging</i>—presentation and rubric <i>Pick a Stick</i>—strategy, assessment at teacher discretion</p> <p>Lesson 1, Day 2 <i>Autophagy WebQuest</i> (online)—activity and capture sheet</p> <p>Lesson 1, Day 3 <i>Disease and Lifestyle Factors of Cellular Aging</i> (online)—capture sheet and rubric</p> <p>Lesson 1, Day 4 <i>Internal and External Changes in Cellular Aging</i> (online)—poster project</p> <p>Lesson 2, Day 1 <i>Modeling Recombinant DNA</i> (databases, online)—capture sheet <i>Exit Ticket</i> (databases, online)—strategy, assessment at teacher discretion <i>Design Journal Entry</i></p> <p>Lesson 2, Day 2 <i>TOP Strategy</i>—activity, assessment at teacher discretion <i>Tweet, Tweet!</i>—activity, assessment at teacher discretion <i>Gallery Walk</i>—activity, assessment at teacher discretion</p> <p>Lesson 2, Day 3 <i>Cancer Health Disparities</i>—capture sheet <i>Cancer Health Disparities</i>—reflection paragraph, assessment at teacher discretion <i>Cancer PSA</i>—capture sheet</p> <p>Lesson 2, Day 4 <i>Longevity Genes</i>—capture sheet <i>Design Journal Entry</i></p>

		<p>Lesson 2, Day 5 <i>The Ownership of DNA</i>—assignment and rubric</p> <p>Lesson 5, Day 1 <i>Genes Modification</i>—capture sheet <i>Design Journal Entry</i></p> <p>Lesson 5, Day 1 (optional links included) <i>Turn and Talk</i>—strategy, assessment at teacher discretion <i>Snowball Fight</i>—strategy, assessment at teacher discretion <i>Exit Ticket</i>—strategy, assessment at teacher discretion</p> <p>Lesson 5, Day 2 <i>Train or Pass It On</i>—strategy, assessment at teacher discretion <i>Brainstorm</i>—strategy, assessment at teacher discretion</p> <p>Lesson 5, Day 3 <i>Pick a Stick</i>—strategy, assessment at teacher discretion</p> <p>Lesson 5, Day 4 <i>DNA Editing</i>—activity and rubric</p> <p>Lesson 5, Day 5 <i>Design Journal Entry</i> <i>How to Slow Aging!</i>—capture sheet <i>Increase Life Expectancy</i>—poster and rubric</p> <p>Lesson 6, Day 1 <i>Pick a Stick</i>—strategy, assessment at teacher discretion <i>Brainstorm</i>—strategy, assessment at teacher discretion <i>GMO Plant</i>—rubric <i>Paper Slide</i>—strategy, assessment at teacher discretion</p> <p>Lesson 6, Day 2 <i>GMO Webquest</i> (computer databases, online)—capture sheet and rubric <i>GMO Safety Article Response</i> (online)—capture sheet and rubric</p> <p>Lesson 6, Day 3 <i>How Do GMOs Improve Health?</i>—poster and rubric <i>Gallery Walk</i>—activity, assessment at teacher discretion <i>GMO Trading Card</i>—activity and rubric</p> <p>Lesson 6, Day 4 <i>Golden Rice</i>—anticipation guide</p>
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Standard	Description	Assessed
		<p><i>Golden Rice Response Prompts</i>—capture sheet and rubric</p> <p>Lesson 7, Day 1 <i>Cloning One-Pager</i>—rubric <i>The History of Cloning Timeline</i>—template and rubric <i>Design Journal Entry</i></p> <p>Lesson 7, Day 2 <i>Stem Cell Scenario, Parts 1 and 2</i>—capture sheets <i>Snowball Fight</i>—activity, assessment at teacher discretion</p> <p><i>Therapeutic vs. Reproductive Cloning</i>—T-chart, written response, Venn diagram <i>Reproductive vs. Therapeutic Cloning</i>—rubric <i>Cloning Facts Presentation</i>—guidelines and rubric</p> <p>Lesson 7, Day 3 <i>Exit Ticket</i>—strategy, assessment at teacher discretion</p> <p>Lesson 7, Day 4 <i>Lab Grown Organoids</i>—capture sheet <i>Biotechnology Professions Recruitment Poster</i>—activity and rubric <i>Design Journal Entry</i></p> <p>Lesson 7, Day 5 <i>Ethics of Cloning</i>—presentation and rubric</p> <p>Lesson 9, Day 2 (with optional case study) <i>Think-Pair-Share</i>—strategy, assessment at teacher discretion <i>Raise a Righteous Hand</i>—strategy, assessment at teacher discretion</p> <p>Lesson 9, Day 3 <i>Case Study Video Storyboard</i>—capture sheet and rubric</p> <p>Lesson 9, Day 4 <i>Socratic Seminar</i>—preparation homework</p> <p>Lesson 9, Days 5–7 <i>Scientific Breakthrough Briefings</i> <i>Final Project Packet</i> <i>Design Journal Entry</i></p>

Standard	Description	Assessed
A6.0: <i>Implement use of the metric system, orders of magnitude, and the pH scale in preparation of reagents, analysis of data, and graphing.</i>		
A6.4	Create data tables and graphs using Excel for the purpose of collecting and analyzing data.	Lesson 6, Day 2 <i>GMO Webquest</i> (graphs)—capture sheet and rubric
A8.0: <i>Follow sustainable and safe practices with high regard for quality control.</i>		
A8.1	Follow written protocols and oral directions to perform a variety of laboratory and technical tasks.	<p>Laboratory Investigation, Day 1 <i>Agarose Gel Electrophoresis</i> <i>Exit Ticket</i>—strategy, assessment at teacher discretion</p> <p>Laboratory Investigation, Day 3 <i>Student Guide, Part 2: Lab and Data Collection</i>—laboratory activities <i>Student Protocol, Part 1: DNA Extraction</i>—laboratory activity</p> <p>Laboratory Investigation, Day 3 (optional activity) <i>Student Protocol, Alternative Part 1: Strawberry DNA Extraction</i>—laboratory activity</p> <p>Laboratory Investigation, Day 4 <i>Student Protocol, Part 2: Agarose Gel Electrophoresis</i>—laboratory activity <i>Student Protocol, Part 3: DNA Sequence Analysis with BLAST</i>—laboratory activity</p> <p>Laboratory Investigation, Day 5 <i>Student Guide, Part 3: Data Analysis</i> (data analysis activities)—laboratory activity <i>Data Analysis</i>—rubric</p> <p>Laboratory Investigation, Day 5 (optional activity) <i>Student Guide Part 4: Extension</i>—note that this activity is an extension, so it may not be covered by all students</p>
A8.6	Properly and safely use and monitor a variety of scientific equipment, including pH meters, microscopes, spectrophotometers, pipets, micropipettes, and balances.	<p>Laboratory Investigation, Day 1 <i>Agarose Gel Electrophoresis</i> (micropipettes) <i>Exit Ticket</i>—strategy, assessment at teacher discretion</p> <p>Laboratory Investigation, Day 3 <i>Student Guide, Part 2: Lab and Data Collection</i> (micropipettes)—laboratory activities <i>Student Protocol, Part 1: DNA Extraction</i> (micropipettes)—laboratory activity</p> <p>Laboratory Investigation, Day 3 (optional activity) <i>Student Protocol, Alternative Part 1: Strawberry DNA Extraction</i> (micropipettes)—laboratory activity</p>

Standard	Description	Assessed
		<p>Laboratory Investigation, Day 4 <i>Student Protocol, Part 2: Agarose Gel Electrophoresis (micropipettes)</i>—laboratory activity</p>
A8.7	Determine which equipment is appropriate to use for a given task and the units of measurement used.	<p>Laboratory Investigation, Day 1 <i>Agarose Gel Electrophoresis</i> <i>Exit Ticket</i>—strategy, assessment at teacher discretion</p> <p>Laboratory Investigation, Day 3 <i>Student Guide, Part 2: Lab and Data Collection</i>—laboratory activities <i>Student Protocol, Part 1: DNA Extraction</i>—laboratory activity</p> <p>Laboratory Investigation, Day 3 (optional activity) <i>Student Protocol, Alternative Part 1: Strawberry DNA Extraction</i>—laboratory activity</p> <p>Laboratory Investigation, Day 4 <i>Student Protocol, Part 2: Agarose Gel Electrophoresis</i>—laboratory activity <i>Student Protocol, Part 3: DNA Sequence Analysis with BLAST</i>—laboratory activity</p>



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