

**Inquiry Investigations™**  
**Forensic Science MODULE - 1013062**  
**Grades: 7-10**

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**Rhode Island Standards and State Frameworks**  
**Science**  
**Grade 7**

<b>DOMAIN / STATEMENT OF ENDURING KNOWLEDGE</b>	<b>RI.LS1.</b>	<b>Life Science: All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, &amp; species).</b>
<b>ASSESSMENT TARGET</b>	<b>LS1 (5-8) SAE+FAF-2.</b>	Describe or compare how different organisms have mechanisms that work in a coordinated way to obtain energy, grow, move, respond, provide defense, enable reproduction, or maintain internal balance (e.g., cells, tissues, organs and systems).
<b>PERFORMANCE STANDARD</b>	<b>LS1 (7-8)-2.</b>	Students demonstrate understanding of structure and function-survival requirements by...
<b>GRADE SPAN EXPECTATION</b>	<b>2a.</b>	Explaining how the cell, as the basic unit of life, has the same survival needs as an organism (i.e., obtain energy, grow, eliminate waste, reproduce, provide for defense). <ul style="list-style-type: none"> <li>• Teacher Resource CD: Simulating DNA Analysis</li> </ul>
<b>GRADE SPAN EXPECTATION</b>	<b>2b.</b>	Observing and describing (e.g., drawing, labeling) individual cells as seen through a microscope targeting cell membrane, cell wall, nucleus, and chloroplasts. <ul style="list-style-type: none"> <li>• Teacher Resource CD: Simulating DNA Analysis</li> </ul>
<b>DOMAIN / STATEMENT OF ENDURING KNOWLEDGE</b>	<b>RI.LS1.</b>	<b>Life Science: All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, &amp; species).</b>
<b>ASSESSMENT TARGET</b>	<b>LS1 (5-8) POC-3.</b>	Compare and contrast sexual reproduction with asexual reproduction.
<b>PERFORMANCE STANDARD</b>	<b>LS1 (7-8)-3.</b>	Students demonstrate an understanding of reproduction by...
<b>GRADE SPAN EXPECTATION</b>	<b>3a.</b>	Explaining reproduction as a fundamental process by which the new individual receives genetic information from parent(s). <ul style="list-style-type: none"> <li>• Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>• Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>• Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>• Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> </ul>

		<ul style="list-style-type: none"> <li>Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> <li>Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
<b>DOMAIN / STATEMENT OF ENDURING KNOWLEDGE</b>	<b>RI.LS1.</b>	<b>Life Science: All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, &amp; species).</b>
<b>ASSESSMENT TARGET</b>	<b>LS1 (5-8) FAF-4.</b>	<b>Explain relationships between or among the structure and function of the cells, tissues, organs, and organ systems in an organism.</b>
<b>PERFORMANCE STANDARD</b>	<b>LS1 (7-8)-4.</b>	<b>Students demonstrate understanding of differentiation by...</b>
<b>GRADE SPAN EXPECTATION</b>	<b>4b.</b>	<p>Comparing individual cells of tissues and recognizing the similarities of cells and how they work together to perform specific functions.</p> <ul style="list-style-type: none"> <li>Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> </ul>
<b>DOMAIN / STATEMENT OF ENDURING KNOWLEDGE</b>	<b>RI.LS3.</b>	<b>Life Science: Groups of organisms show evidence of change over time (structures, behaviors, and biochemistry).</b>
<b>ASSESSMENT TARGET</b>	<b>LS3 (5-8) POC-9.</b>	<b>Cite examples supporting the concept that certain traits of organisms may provide a survival advantage in a specific environment and therefore, an increased likelihood to produce offspring.</b>
<b>PERFORMANCE STANDARD</b>	<b>LS3 (7-8)-9.</b>	<b>Students demonstrate an understanding of Natural Selection/ evolution by...</b>
<b>GRADE SPAN EXPECTATION</b>	<b>9a.</b>	<p>Explaining that genetic variations/traits of organisms are passed on through reproduction and random genetic changes.</p> <ul style="list-style-type: none"> <li>Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> <li>Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
<b>GRADE SPAN EXPECTATION</b>	<b>9c.</b>	<b>Differentiating between acquired and inherited characteristics and</b>

		<p>giving examples of each.</p> <ul style="list-style-type: none"> <li>• Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>• Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>• Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>• Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> <li>• Teacher Resource CD: Simulating DNA Analysis</li> </ul>
<b>DOMAIN / STATEMENT OF ENDURING KNOWLEDGE</b>	<b>RI.LS 4.</b>	<b>Life Science: Humans are similar to other species in many ways, and yet are unique among Earth's life forms.</b>
<b>ASSESSMENT TARGET</b>	<b>LS4 (5-8) INQ+POC-11.</b>	Using data provided, select evidence that supports the concept that genetic information is passed on from both parents to offspring.
<b>PERFORMANCE STANDARD</b>	<b>LS4 (7-8)-11.</b>	Students demonstrate an understanding of human heredity by...
<b>GRADE SPAN EXPECTATION</b>	<b>11a.</b>	<p>Recognizing that characteristics of an organism result from inherited traits of one or more genes from the parents and others result from interactions with the environment.</p> <ul style="list-style-type: none"> <li>• Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>• Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>• Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>• Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> <li>• Teacher Resource CD: Simulating DNA Analysis</li> </ul>

GRADE SPAN EXPECTATION	11c.	Identifying that genetic material (i.e. chromosomes and genes) is located in the cell's nucleus.  <ul style="list-style-type: none"> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.PS1.	Physical Science: All living and nonliving things are composed of matter having characteristic properties that distinguish one substance from another (independent of size or amount of substance).
ASSESSMENT TARGET	PS1 (5-8) INQ-1.	Investigate the relationships among mass, volume and density.
PERFORMANCE STANDARD	PS1 (7-8)-1.	Students demonstrate an understanding of characteristic properties of matter by...
GRADE SPAN EXPECTATION	1a.	Measuring mass and volume of both regular and irregular objects and using those values as well as the relationship $D=m/v$ to calculate density.  <ul style="list-style-type: none"> <li>Forensic Science: Unit 4 Case Activity 3: The Incriminating Headlamp</li> </ul>
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.PS1.	Physical Science: All living and nonliving things are composed of matter having characteristic properties that distinguish one substance from another (independent of size or amount of substance).
ASSESSMENT TARGET	PS1 (5-8) MAS-5.	Given graphic or written information, classify matter as atom/molecule or element/compound (Not the structure of an atom).
PERFORMANCE STANDARD	PS1 (7-8)-5.	Students demonstrate an understanding of the structure of matter by...
GRADE SPAN EXPECTATION	5f.	Explaining that when substances undergo chemical changes to form new substances, the properties of the new combinations may be very different from those of the old.  <ul style="list-style-type: none"> <li>Forensic Science: Unit 1 Case Activity 5: The Black Plastic Bag</li> <li>Forensic Science: Unit 1 Skill Learning Activity 6: Exposing Latent Fingerprints Using Vapors</li> <li>Teacher Resource CD: Fingerprinting</li> <li>Teacher Resource CD: Learning About Paper</li> <li>Teacher Resource CD: The Case of the Silent Sentinel</li> </ul>

### Rhode Island Standards and State Frameworks

#### Science

#### Grade 8

DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS1.	Life Science: All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).
ASSESSMENT TARGET	LS1 (5-8) SAE+FAF-2.	Describe or compare how different organisms have mechanisms that work in a coordinated way to obtain energy, grow, move, respond, provide defense, enable reproduction, or maintain internal balance (e.g., cells, tissues, organs and systems).
PERFORMANCE STANDARD	LS1 (7-8)-2.	Students demonstrate understanding of structure and function-survival requirements by...
GRADE SPAN EXPECTATION	2a.	Explaining how the cell, as the basic unit of life, has the same survival needs as an organism (i.e., obtain energy, grow, eliminate waste, reproduce, provide for defense).  <ul style="list-style-type: none"> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>

GRADE SPAN EXPECTATION	2b.	Observing and describing (e.g., drawing, labeling) individual cells as seen through a microscope targeting cell membrane, cell wall, nucleus, and chloroplasts. <ul style="list-style-type: none"> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS1.	Life Science: All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).
ASSESSMENT TARGET	LS1 (5-8) POC-3.	Compare and contrast sexual reproduction with asexual reproduction.
PERFORMANCE STANDARD	LS1 (7-8)-3.	Students demonstrate an understanding of reproduction by...
GRADE SPAN EXPECTATION	3a.	Explaining reproduction as a fundamental process by which the new individual receives genetic information from parent(s). <ul style="list-style-type: none"> <li>Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> <li>Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS1.	Life Science: All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).
ASSESSMENT TARGET	LS1 (5-8) FAF-4.	Explain relationships between or among the structure and function of the cells, tissues, organs, and organ systems in an organism.
PERFORMANCE STANDARD	LS1 (7-8)-4.	Students demonstrate understanding of differentiation by...
GRADE SPAN EXPECTATION	4b.	Comparing individual cells of tissues and recognizing the similarities of cells and how they work together to perform specific functions. <ul style="list-style-type: none"> <li>Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> </ul>
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS3.	Life Science: Groups of organisms show evidence of change over time (structures, behaviors, and biochemistry).
ASSESSMENT TARGET	LS3 (5-8) POC-9.	Cite examples supporting the concept that certain traits of organisms may provide a survival advantage in a specific environment and therefore, an increased likelihood to produce offspring.
PERFORMANCE	LS3 (7-8)-9.	Students demonstrate an understanding of Natural Selection/ evolution by...

STANDARD		
GRADE SPAN EXPECTATION	9a.	<p>Explaining that genetic variations/traits of organisms are passed on through reproduction and random genetic changes.</p> <ul style="list-style-type: none"> <li>• Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>• Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>• Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>• Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> <li>• Teacher Resource CD: Simulating DNA Analysis</li> </ul>
GRADE SPAN EXPECTATION	9c.	<p>Differentiating between acquired and inherited characteristics and giving examples of each.</p> <ul style="list-style-type: none"> <li>• Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>• Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>• Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>• Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> <li>• Teacher Resource CD: Simulating DNA Analysis</li> </ul>
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS 4.	Life Science: Humans are similar to other species in many ways, and yet are unique among Earth's life forms.
ASSESSMENT TARGET	LS4 (5-8) INQ+POC-11.	Using data provided, select evidence that supports the concept that genetic information is passed on from both parents to offspring.
PERFORMANCE	LS4 (7-8)-	Students demonstrate an understanding of human heredity by...

STANDARD	11.	
GRADE SPAN EXPECTATION	11a.	<p>Recognizing that characteristics of an organism result from inherited traits of one or more genes from the parents and others result from interactions with the environment.</p> <ul style="list-style-type: none"> <li>Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> <li>Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
GRADE SPAN EXPECTATION	11c.	<p>Identifying that genetic material (i.e. chromosomes and genes) is located in the cell's nucleus.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.PS1.	Physical Science: All living and nonliving things are composed of matter having characteristic properties that distinguish one substance from another (independent of size or amount of substance).
ASSESSMENT TARGET	PS1 (5-8) INQ-1.	Investigate the relationships among mass, volume and density.
PERFORMANCE STANDARD	PS1 (7-8)-1.	Students demonstrate an understanding of characteristic properties of matter by...
GRADE SPAN EXPECTATION	1a.	<p>Measuring mass and volume of both regular and irregular objects and using those values as well as the relationship <math>D=m/v</math> to calculate density.</p> <ul style="list-style-type: none"> <li>Forensic Science: Unit 4 Case Activity 3: The Incriminating Headlamp</li> </ul>
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.PS1.	Physical Science: All living and nonliving things are composed of matter having characteristic properties that distinguish one substance from another (independent of size or amount of substance).
ASSESSMENT TARGET	PS1 (5-8) MAS-5.	Given graphic or written information, classify matter as atom/molecule or element/compound (Not the structure of an atom).
PERFORMANCE STANDARD	PS1 (7-8)-5.	Students demonstrate an understanding of the structure of matter by...
GRADE SPAN EXPECTATION	5f.	Explaining that when substances undergo chemical changes to form new substances, the properties of the new combinations may be very different from those of the old.

		<ul style="list-style-type: none"> <li>• Forensic Science: Unit 1 Case Activity 5: The Black Plastic Bag</li> <li>• Forensic Science: Unit 1 Skill Learning Activity 6: Exposing Latent Fingerprints Using Vapors</li> <li>• Teacher Resource CD: Fingerprinting</li> <li>• Teacher Resource CD: Learning About Paper</li> <li>• Teacher Resource CD: The Case of the Silent Sentinel</li> </ul>
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**Rhode Island Standards and State Frameworks  
Science  
Grade 9**

<b>DOMAIN / STATEMENT OF ENDURING KNOWLEDGE</b>	RI.LS1.	Life Science: All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).
<b>ASSESSMENT TARGET</b>	LS1 (9-11) INQ+SAE+FAF-1.	Use data and observation to make connections between, to explain, or to justify how specific cell organelles produce/regulate what the cell needs or what a unicellular or multi-cellular organism needs for survival (e.g., protein synthesis, DNA replication, nerve cells).
<b>PERFORMANCE STANDARD</b>	LS1 (9-11)-1.	Students demonstrate understanding of structure and function-survival requirements by...
<b>GRADE SPAN EXPECTATION</b>	1a.	<p>Explaining the relationships between and amongst the specialized structures of the cell and their functions (e.g. transport of materials, energy transfer, protein building, waste disposal, information feedback, and even movement).</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Simulating DNA Analysis</li> </ul>
<b>DOMAIN / STATEMENT OF ENDURING KNOWLEDGE</b>	RI.LS1.	Life Science: All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).
<b>ASSESSMENT TARGET</b>	LS1 (9-11) FAF+POC-2.	Explain or justify with evidence how the alteration of the DNA sequence may produce new gene combinations that make little difference, enhance capabilities, or can be harmful to the organism (e.g., selective breeding, genetic engineering, mutations).
<b>PERFORMANCE STANDARD</b>	LS1 (9-11)-2.	Students demonstrate an understanding of the molecular basis for heredity by...
<b>GRADE SPAN EXPECTATION</b>	2a.	<p>Describing the DNA structure and relating the DNA sequence to the genetic code.</p> <ul style="list-style-type: none"> <li>• Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>• Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>• Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>• Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> </ul>

		<ul style="list-style-type: none"> <li>Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS1.	Life Science: All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).
ASSESSMENT TARGET	LS1 (9-11) FAF+ POC-2.	Explain or justify with evidence how the alteration of the DNA sequence may produce new gene combinations that make little difference, enhance capabilities, or can be harmful to the organism (e.g., selective breeding, genetic engineering, mutations).
PERFORMANCE STANDARD	LS1 (Ext)-2.	Example Extension(s): Students demonstrate an understanding of the molecular basis for heredity by...
GRADE SPAN EXPECTATION	2aa.	<p>Diagramming or modeling the relationship between chromosomes, genes and DNA, including histones and nucleosomes.</p> <ul style="list-style-type: none"> <li>Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> <li>Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS3.	Life Science: Groups of organisms show evidence of change over time (structures, behaviors, and biochemistry).
ASSESSMENT TARGET	LS3 (9-11) NOS-6.	Explain how evidence from technological advances supports or refutes the genetic relationships among groups of organisms (e.g., DNA analysis, protein analysis).
PERFORMANCE STANDARD	LS3 (9-11)-6.	Students will demonstrate their understanding of the degree of genetic relationships among organisms by...
GRADE SPAN EXPECTATION	6a.	<p>Using given data (diagrams, charts, narratives, etc.) and advances in technology to explain how our understanding of genetic variation has developed over time.</p> <ul style="list-style-type: none"> <li>Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> </ul>

DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS3.	Life Science: Groups of organisms show evidence of change over time (structures, behaviors, and biochemistry).
ASSESSMENT TARGET	LS3 (9-11) NOS-6.	Explain how evidence from technological advances supports or refutes the genetic relationships among groups of organisms (e.g., DNA analysis, protein analysis).
PERFORMANCE STANDARD	LS3 (Ext)-6.	Example Extension(s): Students will demonstrate their understanding of the degree of genetic relationships among organisms by...
GRADE SPAN EXPECTATION	6aa.	Describing how the Human Genome Project has contributed to our understanding of both human heredity and the commonality of DNA sequences among organisms. <ul style="list-style-type: none"> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS3.	Life Science: Groups of organisms show evidence of change over time (structures, behaviors, and biochemistry).
ASSESSMENT TARGET	LS3 (9-11) INQ POC-7.	Given a scenario, provide evidence that demonstrates how sexual reproduction results in a great variety of possible gene combinations and contributes to natural selection (e.g., Darwin's finches, isolation of a species, Tay Sach's disease).
PERFORMANCE STANDARD	LS3 (9-11)-7.	Students demonstrate an understanding of Natural Selection/ evolution by...
GRADE SPAN EXPECTATION	7a.	Investigating how information is passed from parents to offspring by encoded molecules (e.g. evidence from electrophoresis, DNA fingerprinting). <ul style="list-style-type: none"> <li>Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> <li>Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
GRADE SPAN EXPECTATION	7b.	Investigating how the sorting and recombination of genes in sexual reproduction results in a great variety of possible gene combinations in the offspring of any two parents. (e.g. manipulate models to represent and predict genotypes and phenotypes, Punnett Squares, probability activities). <ul style="list-style-type: none"> <li>Forensic Science: Unit 1 Skill Learning Activity 3: Practicing</li> </ul>

		<p>Fingerprint Identification Skills</p> <ul style="list-style-type: none"> <li>Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
<b>DOMAIN / STATEMENT OF ENDURING KNOWLEDGE</b>	RI.LS4.	Life Science: Humans are similar to other species in many ways, and yet are unique among Earth's life forms.
<b>ASSESSMENT TARGET</b>	LS4 (9-11) NOS+INQ-9.	Use evidence to make and support conclusions about the ways that humans or other organisms are affected by environmental factors or heredity (e.g., pathogens, diseases, medical advances, pollution, mutations).
<b>PERFORMANCE STANDARD</b>	LS4 (9-11)-9.	Students demonstrate an understanding of how humans are affected by environmental factors and/or heredity by...
<b>GRADE SPAN EXPECTATION</b>	9b.	<p>Providing an explanation of how the human species impacts the environment and other organisms (e.g. reducing the amount of the earth's surface available to those other species, interfering with their food sources, changing the temperature and chemical composition of their habitats, introducing foreign species into their ecosystems, and altering organisms directly through selective breeding and genetic engineering).</p> <ul style="list-style-type: none"> <li>Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> <li>Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> </ul>

Rhode Island Standards and State Frameworks  
 Science  
 Grade 10

<b>DOMAIN / STATEMENT OF</b>	RI.LS1.	Life Science: All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, &
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ENDURING KNOWLEDGE		species).
ASSESSMENT TARGET	LS1 (9-11) INQ+SAE+FAF-1.	Use data and observation to make connections between, to explain, or to justify how specific cell organelles produce/regulate what the cell needs or what a unicellular or multi-cellular organism needs for survival (e.g., protein synthesis, DNA replication, nerve cells).
PERFORMANCE STANDARD	LS1 (9-11)-1.	Students demonstrate understanding of structure and function-survival requirements by...
GRADE SPAN EXPECTATION	1a.	Explaining the relationships between and amongst the specialized structures of the cell and their functions (e.g. transport of materials, energy transfer, protein building, waste disposal, information feedback, and even movement). <ul style="list-style-type: none"> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS1.	Life Science: All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).
ASSESSMENT TARGET	LS1 (9-11) FAF+ POC-2.	Explain or justify with evidence how the alteration of the DNA sequence may produce new gene combinations that make little difference, enhance capabilities, or can be harmful to the organism (e.g., selective breeding, genetic engineering, mutations).
PERFORMANCE STANDARD	LS1 (9-11)-2.	Students demonstrate an understanding of the molecular basis for heredity by...
GRADE SPAN EXPECTATION	2a.	Describing the DNA structure and relating the DNA sequence to the genetic code. <ul style="list-style-type: none"> <li>Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> <li>Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS1.	Life Science: All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).
ASSESSMENT TARGET	LS1 (9-11) FAF+ POC-2.	Explain or justify with evidence how the alteration of the DNA sequence may produce new gene combinations that make little difference, enhance capabilities, or can be harmful to the organism (e.g., selective breeding, genetic engineering, mutations).

PERFORMANCE STANDARD	LS1 (Ext)-2.	Example Extension(s): Students demonstrate an understanding of the molecular basis for heredity by...
GRADE SPAN EXPECTATION	2aa.	<p>Diagramming or modeling the relationship between chromosomes, genes and DNA, including histones and nucleosomes.</p> <ul style="list-style-type: none"> <li>• Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>• Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>• Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>• Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>• Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> <li>• Teacher Resource CD: Simulating DNA Analysis</li> </ul>
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS3.	Life Science: Groups of organisms show evidence of change over time (structures, behaviors, and biochemistry).
ASSESSMENT TARGET	LS3 (9-11) NOS-6.	Explain how evidence from technological advances supports or refutes the genetic relationships among groups of organisms (e.g., DNA analysis, protein analysis).
PERFORMANCE STANDARD	LS3 (9-11)-6.	Students will demonstrate their understanding of the degree of genetic relationships among organisms by...
GRADE SPAN EXPECTATION	6a.	<p>Using given data (diagrams, charts, narratives, etc.) and advances in technology to explain how our understanding of genetic variation has developed over time.</p> <ul style="list-style-type: none"> <li>• Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> </ul>
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS3.	Life Science: Groups of organisms show evidence of change over time (structures, behaviors, and biochemistry).
ASSESSMENT TARGET	LS3 (9-11) NOS-6.	Explain how evidence from technological advances supports or refutes the genetic relationships among groups of organisms (e.g., DNA analysis, protein analysis).
PERFORMANCE STANDARD	LS3 (Ext)-6.	Example Extension(s): Students will demonstrate their understanding of the degree of genetic relationships among organisms by...
GRADE SPAN EXPECTATION	6aa.	Describing how the Human Genome Project has contributed to our understanding of both human heredity and the commonality of DNA sequences among organisms.

		<ul style="list-style-type: none"> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
<b>DOMAIN / STATEMENT OF ENDURING KNOWLEDGE</b>	RI.LS3.	Life Science: Groups of organisms show evidence of change over time (structures, behaviors, and biochemistry).
<b>ASSESSMENT TARGET</b>	LS3 (9-11) INQ POC-7.	Given a scenario, provide evidence that demonstrates how sexual reproduction results in a great variety of possible gene combinations and contributes to natural selection (e.g., Darwin's finches, isolation of a species, Tay Sach's disease).
<b>PERFORMANCE STANDARD</b>	LS3 (9-11)-7.	Students demonstrate an understanding of Natural Selection/ evolution by...
<b>GRADE SPAN EXPECTATION</b>	7a.	<p>Investigating how information is passed from parents to offspring by encoded molecules (e.g. evidence from electrophoresis, DNA fingerprinting).</p> <ul style="list-style-type: none"> <li>Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> <li>Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
<b>GRADE SPAN EXPECTATION</b>	7b.	<p>Investigating how the sorting and recombination of genes in sexual reproduction results in a great variety of possible gene combinations in the offspring of any two parents. (e.g. manipulate models to represent and predict genotypes and phenotypes, Punnett Squares, probability activities).</p> <ul style="list-style-type: none"> <li>Forensic Science: Unit 1 Skill Learning Activity 3: Practicing Fingerprint Identification Skills</li> <li>Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> </ul>

		<ul style="list-style-type: none"> <li>Teacher Resource CD: Simulating DNA Analysis</li> </ul>
<b>DOMAIN / STATEMENT OF ENDURING KNOWLEDGE</b>	RI.LS4.	Life Science: Humans are similar to other species in many ways, and yet are unique among Earth's life forms.
<b>ASSESSMENT TARGET</b>	LS4 (9-11) NOS+INQ-9.	Use evidence to make and support conclusions about the ways that humans or other organisms are affected by environmental factors or heredity (e.g., pathogens, diseases, medical advances, pollution, mutations).
<b>PERFORMANCE STANDARD</b>	LS4 (9-11)-9.	Students demonstrate an understanding of how humans are affected by environmental factors and/or heredity by...
<b>GRADE SPAN EXPECTATION</b>	9b.	<p>Providing an explanation of how the human species impacts the environment and other organisms (e.g. reducing the amount of the earth's surface available to those other species, interfering with their food sources, changing the temperature and chemical composition of their habitats, introducing foreign species into their ecosystems, and altering organisms directly through selective breeding and genetic engineering).</p> <ul style="list-style-type: none"> <li>Forensic Science: Unit 2 Case Activity 1: The Questioned Parentage</li> <li>Forensic Science: Unit 2 Case Activity 2: The Uncommon Outlaw - Thomas Howard</li> <li>Forensic Science: Unit 2 Case Activity 3: The Telling Tissue</li> <li>Forensic Science: Unit 2 Case Activity 4: The Second Examination</li> <li>Forensic Science: Unit 2 Skill Learning Activity 1: Modeling a DNA Profile</li> <li>Forensic Science: Unit 2 Skill Learning Activity 2: The Discarded Cigarette - RFLP Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 3: The Bloody Cloth - DNA Profile Analysis</li> <li>Forensic Science: Unit 2 Skill Learning Activity 4: A Closer Look at STR Polymorphisms</li> <li>Forensic Science: Unit 2 Skill Learning Activity 5: Practicing Genetic Analysis using DNA Profile Frequency Calculations</li> <li>Forensic Science: Unit 2 Skill Learning Activity 6: Genetic Analysis of DNA Profiles</li> </ul>