

Inquiry Investigations™
Kingdoms of Life MODULE - 1294372
Grades: 7-10

Frey Scientific
 80 Northwest Boulevard
 Nashua, NH 03063-4067
 1-800-225-3739
 www.freyscientific.com
 www.freyscientific.com/inquiryinvestigations

Rhode Island Standards and State Frameworks
Science
Grade 7

DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.ESS1.	Earth and Space Science: The earth and earth materials as we know them today have developed over long periods of time, through continual change processes.
ASSESSMENT TARGET	ESS1 (5-8) POC-3.	Explain how earth events (abruptly and over time) can bring about changes in Earth's surface: landforms, ocean floor, rock features, or climate.
PERFORMANCE STANDARD	ESS1 (7-8)-3.	Students demonstrate an understanding of processes and change over time within earth systems by...
GRADE SPAN EXPECTATION	3a.	Evaluating slow processes (e.g. weathering, erosion, mountain building, sea floor spreading) to determine how the earth has changed and will continue to change over time. <ul style="list-style-type: none"> Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
GRADE SPAN EXPECTATION	3c.	Investigating the effect of flowing water on landforms (e.g. stream table, local environment). <ul style="list-style-type: none"> Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
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)-INQ+ SAE-1.	Using data and observations about the biodiversity of an ecosystem make predictions or draw conclusions about how the diversity contributes to the stability of the ecosystem.
PERFORMANCE STANDARD	LS1 (7-8)-1.	Students demonstrate understanding of biodiversity by...
GRADE SPAN EXPECTATION	1a.	Giving examples of adaptations or behaviors that are specific to a niche (role) within an ecosystem. <ul style="list-style-type: none"> Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
GRADE SPAN EXPECTATION	1b.	Explaining how organisms with different structures and behaviors have roles that contribute to each other's survival and the stability of the ecosystem. <ul style="list-style-type: none"> Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey

		<ul style="list-style-type: none"> Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey Teacher Resource CD: A Closer Look at Animals Teacher Resource CD: A Closer Look at Plants
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.	<p>Explaining reproduction as a fundamental process by which the new individual receives genetic information from parent(s).</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes
GRADE SPAN EXPECTATION	3b.	<p>Describing forms of asexual reproduction that involve the genetic contribution of only one parent (e.g., binary fission, budding, vegetative propagation, regeneration).</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants
GRADE SPAN EXPECTATION	3c.	<p>Describing sexual reproduction as a process that combines genetic material of two parents to produce a new organism (e.g., sperm/egg, pollen/ova)</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants
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	4c.	<p>Explaining how each type of cell, tissue, and organ has a distinct structure and set of functions that serve the organism as a whole.</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging

		<p>for Pond Microlife</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Animals • Teacher Resource CD: A Closer Look at Microbes • Teacher Resource CD: Classifying Life • Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing • Virtual Laboratory: Classifying Living Organisms
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS2.	Life Science: Matter cycles and energy flows through an ecosystem.
ASSESSMENT TARGET	LS2 (5-8) INQ+SAE-5.	Using data and observations, predict outcomes when abiotic/biotic factors are changed in an ecosystem.
PERFORMANCE STANDARD	LS2 (7-8)-5.	Students demonstrate an understanding of equilibrium in an ecosystem by...
GRADE SPAN EXPECTATION	5a.	<p>Identifying which biotic (e.g., bacteria, fungi, plants, animals) and abiotic (e.g., weather, climate, light, water, temperature, soil composition, catastrophic events) factors affect a given ecosystem.</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey
GRADE SPAN EXPECTATION	5b.	<p>Analyzing how biotic and abiotic factors affect a given ecosystem.</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey
GRADE SPAN EXPECTATION	5c.	<p>Predicting the outcome of a given change in biotic and abiotic factors in an ecosystem.</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey
GRADE SPAN EXPECTATION	5d.	<p>Using a visual model (e.g., graph) to track population changes in an ecosystem.</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS2.	Life Science: Matter cycles and energy flows through an ecosystem.
ASSESSMENT TARGET	LS2 (5-8) SAE-6.	Given a scenario trace the flow of energy through an ecosystem, beginning with the sun, through organisms in the food web, and into the environment (includes photosynthesis and respiration).
PERFORMANCE STANDARD	LS2 (7-8)-6.	Students demonstrate an understanding of energy flow in an ecosystem by...
GRADE SPAN EXPECTATION	6a.	<p>Explaining the transfer of the sun's energy through living systems and its effect upon them.</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs • Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle

		<ul style="list-style-type: none"> Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
GRADE SPAN EXPECTATION	6b.	<p>Describing the basic processes and recognizing the names and chemical formulas of the substances involved in photosynthesis and respiration.</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Plants
GRADE SPAN EXPECTATION	6c.	<p>Explaining the relationship between photosynthesis and respiration.</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Plants
GRADE SPAN EXPECTATION	6d.	<p>Creating or interpreting a model that traces the flow of energy in a food web.</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement Teacher Resource CD: A Closer Look at Microbes
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS2.	Life Science: Matter cycles and energy flows through an ecosystem.
ASSESSMENT TARGET	LS2 (5-8) SAE-7.	Given an ecosystem, trace how matter cycles among and between organisms and the physical environment (includes water, oxygen, food web, decomposition, recycling but not carbon cycle or nitrogen cycle).
PERFORMANCE STANDARD	LS2 (7-8)-7.	Students demonstrate an understanding of recycling in an ecosystem by...
GRADE SPAN EXPECTATION	7b.	<p>Developing a model for a food web of local aquatic and local terrestrial environments.</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife
GRADE SPAN EXPECTATION	7d.	Conducting a controlled investigation that shows that the total amount of matter remains constant, even though its form and location change as matter is transferred among and between

		<p>organisms and the physical environment (e.g., bottle biology, mass of a closed system over time).</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement
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) MAS+FAF-8.	Use a model, classification system, or dichotomous key to illustrate, compare, or interpret possible relationships among groups of organisms (e.g., internal and external structures, anatomical features).
PERFORMANCE STANDARD	LS3 (7-8)-8.	Students demonstrate an understanding of classification of organisms by...
GRADE SPAN EXPECTATION	8a.	<p>Sorting organisms with similar characteristics into groups based on internal and external structures.</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey Teacher Resource CD: A Closer Look at Animals Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants Teacher Resource CD: Classifying Life Teacher Resource CD: Field Biology - Collecting,

		<p>Identifying, and Observing</p> <ul style="list-style-type: none"> Virtual Laboratory: Classifying Living Organisms
GRADE SPAN EXPECTATION	8b.	<p>Explaining how species with similar evolutionary histories/characteristics are classified more closely together with some organisms than others (e.g., a fish and human have more common with each other than a fish and jelly fish)</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey Teacher Resource CD: A Closer Look at Animals Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants Teacher Resource CD: Classifying Life Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing Virtual Laboratory: Classifying Living Organisms
GRADE SPAN EXPECTATION	8c.	<p>Recognizing the classification system used in modern biology.</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging

		<p>for Bacteria and Fungi</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife • Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle • Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination • Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction • Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement • Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs • Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs • Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design • Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey • Teacher Resource CD: A Closer Look at Animals • Teacher Resource CD: A Closer Look at Microbes • Teacher Resource CD: A Closer Look at Plants • Teacher Resource CD: Classifying Life • Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing • Virtual Laboratory: Classifying Living Organisms
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) POC-12.	Describe the major changes that occur over time in human development from single cell through embryonic development to new born (i.e., trimesters: 1st-group of cells, 2nd-organs form, 3rd-organs mature).
PERFORMANCE STANDARD	LS4 (7-8)-12.	Students demonstrate an understanding of patterns of human development by...
GRADE SPAN EXPECTATION	12d.	<p>Comparing the patterns of human development after birth to life stages of other species.</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Animals

Rhode Island Standards and State Frameworks
 Science
 Grade 8

DOMAIN / STATEMENT OF ENDURING	RI.ESS1.	Earth and Space Science: The earth and earth materials as we know them today have developed over long periods of time, through continual change processes.
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KNOWLEDGE		
ASSESSMENT TARGET	ESS1 (5-8) POC-3.	Explain how earth events (abruptly and over time) can bring about changes in Earth's surface: landforms, ocean floor, rock features, or climate.
PERFORMANCE STANDARD	ESS1 (7-8)-3.	Students demonstrate an understanding of processes and change over time within earth systems by...
GRADE SPAN EXPECTATION	3a.	Evaluating slow processes (e.g. weathering, erosion, mountain building, sea floor spreading) to determine how the earth has changed and will continue to change over time. <ul style="list-style-type: none"> Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
GRADE SPAN EXPECTATION	3c.	Investigating the effect of flowing water on landforms (e.g. stream table, local environment). <ul style="list-style-type: none"> Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
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)-INQ+ SAE-1.	Using data and observations about the biodiversity of an ecosystem make predictions or draw conclusions about how the diversity contributes to the stability of the ecosystem.
PERFORMANCE STANDARD	LS1 (7-8)-1.	Students demonstrate understanding of biodiversity by...
GRADE SPAN EXPECTATION	1a.	Giving examples of adaptations or behaviors that are specific to a niche (role) within an ecosystem. <ul style="list-style-type: none"> Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
GRADE SPAN EXPECTATION	1b.	Explaining how organisms with different structures and behaviors have roles that contribute to each other's survival and the stability of the ecosystem. <ul style="list-style-type: none"> Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey Teacher Resource CD: A Closer Look at Animals Teacher Resource CD: A Closer Look at Plants
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"> Teacher Resource CD: A Closer Look at Microbes
GRADE SPAN EXPECTATION	3b.	Describing forms of asexual reproduction that involve the genetic contribution of only one parent (e.g., binary fission, budding, vegetative propagation, regeneration). <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants
GRADE SPAN EXPECTATION	3c.	Describing sexual reproduction as a process that combines genetic material of two parents to produce a new organism (e.g., sperm/egg, pollen/ova) <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants
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	4c.	Explaining how each type of cell, tissue, and organ has a distinct structure and set of functions that serve the organism as a whole. <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife Teacher Resource CD: A Closer Look at Animals Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: Classifying Life Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing Virtual Laboratory: Classifying Living Organisms
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS2.	Life Science: Matter cycles and energy flows through an ecosystem.
ASSESSMENT TARGET	LS2 (5-8) INQ+SAE-5.	Using data and observations, predict outcomes when abiotic/biotic factors are changed in an ecosystem.
PERFORMANCE STANDARD	LS2 (7-8)-5.	Students demonstrate an understanding of equilibrium in an ecosystem by...

GRADE SPAN EXPECTATION	5a.	Identifying which biotic (e.g., bacteria, fungi, plants, animals) and abiotic (e.g., weather, climate, light, water, temperature, soil composition, catastrophic events) factors affect a given ecosystem. <ul style="list-style-type: none"> Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey
GRADE SPAN EXPECTATION	5b.	Analyzing how biotic and abiotic factors affect a given ecosystem. <ul style="list-style-type: none"> Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey
GRADE SPAN EXPECTATION	5c.	Predicting the outcome of a given change in biotic and abiotic factors in an ecosystem. <ul style="list-style-type: none"> Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey
GRADE SPAN EXPECTATION	5d.	Using a visual model (e.g., graph) to track population changes in an ecosystem. <ul style="list-style-type: none"> Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS2.	Life Science: Matter cycles and energy flows through an ecosystem.
ASSESSMENT TARGET	LS2 (5-8) SAE-6.	Given a scenario trace the flow of energy through an ecosystem, beginning with the sun, through organisms in the food web, and into the environment (includes photosynthesis and respiration).
PERFORMANCE STANDARD	LS2 (7-8)-6.	Students demonstrate an understanding of energy flow in an ecosystem by...
GRADE SPAN EXPECTATION	6a.	Explaining the transfer of the sun's energy through living systems and its effect upon them. <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
GRADE SPAN EXPECTATION	6b.	Describing the basic processes and recognizing the names and chemical formulas of the substances involved in photosynthesis and respiration.

		<ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Plants
GRADE SPAN EXPECTATION	6c.	<p>Explaining the relationship between photosynthesis and respiration.</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Plants
GRADE SPAN EXPECTATION	6d.	<p>Creating or interpreting a model that traces the flow of energy in a food web.</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement Teacher Resource CD: A Closer Look at Microbes
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.LS2.	Life Science: Matter cycles and energy flows through an ecosystem.
ASSESSMENT TARGET	LS2 (5-8) SAE-7.	Given an ecosystem, trace how matter cycles among and between organisms and the physical environment (includes water, oxygen, food web, decomposition, recycling but not carbon cycle or nitrogen cycle).
PERFORMANCE STANDARD	LS2 (7-8)-7.	Students demonstrate an understanding of recycling in an ecosystem by...
GRADE SPAN EXPECTATION	7b.	<p>Developing a model for a food web of local aquatic and local terrestrial environments.</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife
GRADE SPAN EXPECTATION	7d.	<p>Conducting a controlled investigation that shows that the total amount of matter remains constant, even though its form and location change as matter is transferred among and between organisms and the physical environment (e.g., bottle biology, mass of a closed system over time).</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement
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) MAS+FAF-8.	Use a model, classification system, or dichotomous key to illustrate, compare, or interpret possible relationships among groups of organisms (e.g., internal and external structures, anatomical features).
PERFORMANCE	LS3 (7-8)-	Students demonstrate an understanding of classification of organisms

STANDARD	8.	by...
GRADE SPAN EXPECTATION	8a.	<p>Sorting organisms with similar characteristics into groups based on internal and external structures.</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms • Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs • Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi • Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife • Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle • Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination • Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction • Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement • Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs • Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs • Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design • Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey • Teacher Resource CD: A Closer Look at Animals • Teacher Resource CD: A Closer Look at Microbes • Teacher Resource CD: A Closer Look at Plants • Teacher Resource CD: Classifying Life • Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing • Virtual Laboratory: Classifying Living Organisms
GRADE SPAN EXPECTATION	8b.	<p>Explaining how species with similar evolutionary histories/characteristics are classified more closely together with some organisms than others (e.g., a fish and human have more common with each other than a fish and jelly fish)</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms • Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs • Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi • Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging

		<p>for Pond Microlife</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle • Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination • Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction • Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement • Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs • Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs • Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design • Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey • Teacher Resource CD: A Closer Look at Animals • Teacher Resource CD: A Closer Look at Microbes • Teacher Resource CD: A Closer Look at Plants • Teacher Resource CD: Classifying Life • Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing • Virtual Laboratory: Classifying Living Organisms
<p>GRADE SPAN EXPECTATION</p>	<p>8c.</p>	<p>Recognizing the classification system used in modern biology.</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms • Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs • Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi • Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife • Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle • Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination • Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction • Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement • Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs • Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs • Kingdoms of Life: Unit 2 Lab 4 Activity 3:

		<p>Experimental Design</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey • Teacher Resource CD: A Closer Look at Animals • Teacher Resource CD: A Closer Look at Microbes • Teacher Resource CD: A Closer Look at Plants • Teacher Resource CD: Classifying Life • Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing • Virtual Laboratory: Classifying Living Organisms
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) POC-12.	Describe the major changes that occur over time in human development from single cell through embryonic development to new born (i.e., trimesters: 1st-group of cells, 2nd-organs form, 3rd-organs mature).
PERFORMANCE STANDARD	LS4 (7-8)-12.	Students demonstrate an understanding of patterns of human development by...
GRADE SPAN EXPECTATION	12d.	<p>Comparing the patterns of human development after birth to life stages of other species.</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Animals

Rhode Island Standards and State Frameworks
Science
Grade 9

DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.ESS1.	Earth and Space Science: The earth and earth materials as we know them today have developed over long periods of time, through continual change processes.
ASSESSMENT TARGET	ESS1 (9-11) POC-1.	Provided with geologic data (including movement of plates) on a given locale, predict the likelihood for an earth event (e.g., volcanoes, mountain ranges, islands, earthquakes).
PERFORMANCE STANDARD	ESS1 (9-11)-1.	Students demonstrate an understanding of processes and change over time within earth systems by...
GRADE SPAN EXPECTATION	1a.	<p>Plotting the location of mountain ranges and recent earthquakes and volcanic eruptions to identify any existing patterns.</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey • Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
DOMAIN /	RI.ESS1.	Earth and Space Science: The earth and earth materials as

STATEMENT OF ENDURING KNOWLEDGE		we know them today have developed over long periods of time, through continual change processes.
ASSESSMENT TARGET	ESS1 (9-11) SAE+ POC-3.	Explain how internal and external sources of heat (energy) fuel geologic processes (e.g., rock cycle, plate tectonics, sea floor spreading).
PERFORMANCE STANDARD	ESS1 (9-11)-3.	Students demonstrate an understanding of processes and change over time within earth systems by...
GRADE SPAN EXPECTATION	3d.	Explaining how the physical and chemical processes of the Earth alter the crust (e.g. seafloor spreading, hydrologic cycle, weathering, element cycling). <ul style="list-style-type: none"> Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.ESS1.	Earth and Space Science: The earth and earth materials as we know them today have developed over long periods of time, through continual change processes.
ASSESSMENT TARGET	ESS1 (9-11) SAE+ POC-3.	Explain how internal and external sources of heat (energy) fuel geologic processes (e.g., rock cycle, plate tectonics, sea floor spreading).
PERFORMANCE STANDARD	ESS1 (Ext.)-3.	Example Extension(s): Students demonstrate an understanding of processes and change over time within earth systems by...
GRADE SPAN EXPECTATION	3aa.	Describe how interaction of wind patterns, ocean currents, and mountain ranges results in the global pattern of latitudinal bands of rain forests and deserts. <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
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) 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	1c.	Comparing the role of various sub-cellular structures in unicellular organisms to comparable structures in

		<p>multicellular organisms (e.g. oral groove, gullet, food vacuole in Paramecium compared to digestive systems in multicellular organisms).</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms Teacher Resource CD: A Closer Look at Microbes Virtual Laboratory: Classifying Living Organisms
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) 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 (Ext)-1.	Example Extension(s): Students demonstrate understanding of structure and function-survival requirements by
GRADE SPAN EXPECTATION	1bb.	<p>Identify various specialized cells and common unicellular organisms in diagrams, photographs and/or microscopic slides.</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: Classifying Life Virtual Laboratory: Classifying Living Organisms
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	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"> Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants
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 FAF+POC-8.	Given information about living or extinct organisms, cite evidence to explain the frequency of inherited characteristics of organisms in a population, OR explain the evolution of varied structures (with defined functions) that affected the organisms' survival in a specific environment (e.g., giraffe, wind pollination of flowers).
PERFORMANCE STANDARD	LS3 (9-11)-8.	Students demonstrate an understanding of Natural Selection/ evolution by...
GRADE SPAN EXPECTATION	8d.	Using data or models (charts, diagrams, table, narratives etc.) to analyze how organisms are organized into a hierarchy of groups and subgroups based on evolutionary relationships. (e.g. creating a taxonomic key to organize a given set of examples). <ul style="list-style-type: none"> • Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms • Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey • Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey • Teacher Resource CD: A Closer Look at Animals • Teacher Resource CD: A Closer Look at Plants • Teacher Resource CD: Classifying Life • Virtual Laboratory: Classifying Living Organisms
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.PS2.	Physical Science: Energy is necessary for change to occur in matter. Energy can be stored, transferred, and transformed, but cannot be destroyed.
ASSESSMENT TARGET	PS2 (9-11) POC+SAE-5.	Demonstrate how transformations of energy produce some energy in the form of heat and therefore the efficiency of the system is reduced (chemical, biological, and physical systems).
PERFORMANCE STANDARD	PS2 (9-11)-5.	Students demonstrate an understanding of energy by...
GRADE SPAN EXPECTATION	5a.	Describing or diagramming the changes in energy (transformation) that occur in different systems (e.g. chemical = exo and endo thermic reactions, biological = food webs, physical = phase changes). <ul style="list-style-type: none"> • Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle • Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination • Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction • Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement

		<ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes
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Rhode Island Standards and State Frameworks
Science
Grade 10

DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.ESS1.	Earth and Space Science: The earth and earth materials as we know them today have developed over long periods of time, through continual change processes.
ASSESSMENT TARGET	ESS1 (9-11) POC-1.	Provided with geologic data (including movement of plates) on a given locale, predict the likelihood for an earth event (e.g., volcanoes, mountain ranges, islands, earthquakes).
PERFORMANCE STANDARD	ESS1 (9-11)-1.	Students demonstrate an understanding of processes and change over time within earth systems by...
GRADE SPAN EXPECTATION	1a.	<p>Plotting the location of mountain ranges and recent earthquakes and volcanic eruptions to identify any existing patterns.</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.ESS1.	Earth and Space Science: The earth and earth materials as we know them today have developed over long periods of time, through continual change processes.
ASSESSMENT TARGET	ESS1 (9-11) SAE+ POC-3.	Explain how internal and external sources of heat (energy) fuel geologic processes (e.g., rock cycle, plate tectonics, sea floor spreading).
PERFORMANCE STANDARD	ESS1 (9-11)-3.	Students demonstrate an understanding of processes and change over time within earth systems by...
GRADE SPAN EXPECTATION	3d.	<p>Explaining how the physical and chemical processes of the Earth alter the crust (e.g. seafloor spreading, hydrologic cycle, weathering, element cycling).</p> <ul style="list-style-type: none"> Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.ESS1.	Earth and Space Science: The earth and earth materials as we know them today have developed over long periods of time, through continual change processes.
ASSESSMENT TARGET	ESS1 (9-11) SAE+ POC-3.	Explain how internal and external sources of heat (energy) fuel geologic processes (e.g., rock cycle, plate tectonics, sea floor spreading).
PERFORMANCE STANDARD	ESS1 (Ext.)-3.	Example Extension(s): Students demonstrate an understanding of processes and change over time within earth systems by...
GRADE SPAN EXPECTATION	3aa.	<p>Describe how interaction of wind patterns, ocean currents, and mountain ranges results in the global pattern of latitudinal bands of rain forests and deserts.</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest

		<p>(Wooded Area) Survey</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
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) 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	1c.	<p>Comparing the role of various sub-cellular structures in unicellular organisms to comparable structures in multicellular organisms (e.g. oral groove, gullet, food vacuole in Paramecium compared to digestive systems in multicellular organisms).</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms Teacher Resource CD: A Closer Look at Microbes Virtual Laboratory: Classifying Living Organisms
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) 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 (Ext)-1.	Example Extension(s): Students demonstrate understanding of structure and function-survival requirements by
GRADE SPAN EXPECTATION	1bb.	<p>Identify various specialized cells and common unicellular organisms in diagrams, photographs and/or microscopic slides.</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: Classifying Life

		<ul style="list-style-type: none"> Virtual Laboratory: Classifying Living Organisms
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	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"> Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants
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 FAF+POC-8.	Given information about living or extinct organisms, cite evidence to explain the frequency of inherited characteristics of organisms in a population, OR explain the evolution of varied structures (with defined functions) that affected the organisms' survival in a specific environment (e.g., giraffe, wind pollination of flowers).
PERFORMANCE STANDARD	LS3 (9-11)-8.	Students demonstrate an understanding of Natural Selection/ evolution by...
GRADE SPAN EXPECTATION	8d.	<p>Using data or models (charts, diagrams, table, narratives etc.) to analyze how organisms are organized into a hierarchy of groups and subgroups based on evolutionary relationships. (e.g. creating a taxonomic key to organize a given set of examples).</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey Teacher Resource CD: A Closer Look at Animals Teacher Resource CD: A Closer Look at Plants Teacher Resource CD: Classifying Life

		<ul style="list-style-type: none"> Virtual Laboratory: Classifying Living Organisms
DOMAIN / STATEMENT OF ENDURING KNOWLEDGE	RI.PS2.	Physical Science: Energy is necessary for change to occur in matter. Energy can be stored, transferred, and transformed, but cannot be destroyed.
ASSESSMENT TARGET	PS2 (9-11) POC+SAE-5.	Demonstrate how transformations of energy produce some energy in the form of heat and therefore the efficiency of the system is reduced (chemical, biological, and physical systems).
PERFORMANCE STANDARD	PS2 (9-11)-5.	Students demonstrate an understanding of energy by...
GRADE SPAN EXPECTATION	5a.	<p>Describing or diagramming the changes in energy (transformation) that occur in different systems (e.g. chemical = exo and endo thermic reactions, biological = food webs, physical = phase changes).</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement Teacher Resource CD: A Closer Look at Microbes

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