

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

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Missouri Grade Level Expectations
Science
Grade 7

STRAND: BIG IDEA / STANDARD	MO.5.	Processes and Interactions of the Earth's Systems (Geosphere, Atmosphere, and Hydrosphere)
CONCEPT: GLE / BENCHMARK	5.1.	Earth's systems (Geosphere, atmosphere, and hydrosphere) have common components and unique structures
GLE / PROFICIENCY	5.1.C.	The atmosphere (air) is composed of a mixture of gases, including water vapor, and minute particles
COMPONENT / INDICATOR	5.1.C.a.	Scope and Sequence - Weather and Climate: Describe the composition of the Earth's atmosphere (i.e., mixture of gases, water and minute particles) and how it circulates as air masses <ul style="list-style-type: none"> • Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey
STRAND: BIG IDEA / STANDARD	MO.7.	Scientific Inquiry
CONCEPT: GLE / BENCHMARK	7.1.	Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking
GLE / PROFICIENCY	7.1.A.	Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation
COMPONENT / INDICATOR	7.1.A.b.	Scope and Sequence - All Units: Identify and describe the importance of the independent variable, dependent variables, control of constants, and multiple trials to the design of a valid experiment <ul style="list-style-type: none"> • 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
COMPONENT / INDICATOR	7.1.A.c.	Scope and Sequence - All Units: Design and conduct a valid experiment <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

		<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 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 • Virtual Laboratory: Classifying Living Organisms
<p>COMPONENT / INDICATOR</p>	<p>7.1.A.d.</p>	<p>Scope and Sequence - All Units: Evaluate the design of an experiment and make suggestions for reasonable improvements or extensions of an experiment</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 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 • Virtual Laboratory: Classifying Living Organisms
<p>COMPONENT / INDICATOR</p>	<p>7.1.A.e.</p>	<p>Scope and Sequence - All Units: Recognize that different kinds of questions suggest different kinds of scientific investigations (e.g., some involve observing and describing objects organisms, or events; some involve collecting specimens; some involve experiments; some involve making observations in nature; some involve discovery of new objects and phenomena; some involve making models)</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms

		<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 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 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 • Virtual Laboratory: Classifying Living Organisms
<p>COMPONENT / INDICATOR</p>	<p>7.1.A.f.</p>	<p>Scope and Sequence - All Units: Acknowledge there is no fixed procedure called "the scientific method", but some investigations involve systematic observations, carefully collected and relevant evidence, logical reasoning, and imagination in developing hypotheses and other explanations</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

		<ul style="list-style-type: none"> 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 Virtual Laboratory: Classifying Living Organisms
STRAND: BIG IDEA / STANDARD	MO.7.	Scientific Inquiry
CONCEPT: GLE / BENCHMARK	7.1.	Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking
GLE / PROFICIENCY	7.1.B.	Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations
COMPONENT / INDICATOR	7.1.B.b.	<p>Scope and Sequence - All Units: Determine the appropriate tools and techniques to collect data</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 Virtual Laboratory: Classifying Living Organisms
COMPONENT / INDICATOR	7.1.B.c.	<p>Scope and Sequence - All Units: Use a variety of tools and equipment to gather data (e.g., microscopes, thermometers, analog and digital meters, computers, spring scales, balances, metric rulers, graduated cylinders, stopwatches)</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? -

		<p>Creating Food Webs</p> <ul style="list-style-type: none"> 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 Virtual Laboratory: Classifying Living Organisms
COMPONENT / INDICATOR	7.1.B.d.	<p>Scope and Sequence - All Units: Measure length to the nearest millimeter, mass to the nearest gram, volume to the nearest milliliter, force (weight) to the nearest Newton, temperature to the nearest degree Celsius, time to the nearest second</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 4: Seed Harvesting and Measurement
COMPONENT / INDICATOR	7.1.B.e.	<p>Scope and Sequence - All Units: Compare amounts/measurements</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle
COMPONENT / INDICATOR	7.1.B.g.	<p>Scope and Sequence - All Units: Calculate the range and average/mean of a set of data</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 4: Seed Harvesting and Measurement
STRAND: BIG IDEA / STANDARD	MO.7.	Scientific Inquiry
CONCEPT: GLE / BENCHMARK	7.1.	Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking
GLE /	7.1.C.	Scientific inquiry includes evaluation of explanations (laws/principles,

PROFICIENCY		theories/models) in light of evidence (data) and scientific principles (understandings)
COMPONENT / INDICATOR	7.1.C.a.	<p>Scope and Sequence - All Units: Use quantitative and qualitative data as support for reasonable explanations (conclusions)</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 • Virtual Laboratory: Classifying Living Organisms
COMPONENT / INDICATOR	7.1.C.b.	<p>Scope and Sequence - All Units: Use data as support for observed patterns and relationships, and to make predictions to be tested</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

		<ul style="list-style-type: none"> 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: Classifying Life Virtual Laboratory: Classifying Living Organisms
STRAND: BIG IDEA / STANDARD	MO.7.	Scientific Inquiry
CONCEPT: GLE / BENCHMARK	7.1.	Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking
GLE / PROFICIENCY	7.1.D.	The nature of science relies upon communication of results and justification of explanations
COMPONENT / INDICATOR	7.1.D.a.	<p>Scope and Sequence - All Units: Communicate the procedures and results of investigations and explanations through: oral presentations, drawings and maps, data tables (allowing for the recording and analysis of data relevant to the experiment, such as independent and dependent variables, multiple trials, beginning and ending times or temperatures, derived quantities) graphs (bar, single line, pictograph), equations and writings</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

		<p>Survey</p> <ul style="list-style-type: none"> 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 Virtual Laboratory: Classifying Living Organisms
STRAND: BIG IDEA / STANDARD	MO.8.	Impact of Science, Technology and Human Activity
CONCEPT: GLE / BENCHMARK	8.1.	The nature of technology can advance, and is advanced by, science as it seeks to apply scientific knowledge in ways that meet human needs
GLE / PROFICIENCY	8.1.B.	Advances in technology often result in improved data collection and an increase in scientific information
COMPONENT / INDICATOR	8.1.B.a.	<p>Scope and Sequence - All Units: Identify the link between technological developments and the scientific discoveries made possible through their development (e.g., Hubble telescope and stellar evolution, composition and structure of the universe; the electron microscope and cell organelles; sonar and the composition of the Earth; manned and unmanned space missions and space exploration; Doppler radar and weather conditions; MRI and CAT-scans and brain activity))</p> <ul style="list-style-type: none"> 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 4 Activity 3: Experimental Design Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey
STRAND: BIG IDEA / STANDARD	MO.8.	Impact of Science, Technology and Human Activity
CONCEPT: GLE / BENCHMARK	8.2.	Historical and cultural perspectives of scientific explanations help to improve understanding of the nature of science and how science knowledge and technology evolve over time
GLE / PROFICIENCY	8.2.A.	People of different gender and ethnicity have contributed to scientific discoveries and the invention of technological innovations
COMPONENT / INDICATOR	8.2.A.a.	<p>Scope and Sequence - All Units: Describe how the contributions of scientists and inventors, representing different cultures, races, and gender, have contributed to science, technology and human activity (e.g., George Washington Carver, Thomas Edison, Thomas Jefferson, Isaac Newton, Marie Curie, Galileo, Albert Einstein, Mae Jemison, Edwin Hubble, Charles Darwin, Jonas Salk, Louis Pasteur, Jane Goodall, Tom Akers, John Wesley Powell, Rachel Carson) (Assess Locally)</p> <ul style="list-style-type: none"> Teacher Resource CD: Classifying Life
STRAND: BIG IDEA / STANDARD	MO.8.	Impact of Science, Technology and Human Activity
CONCEPT: GLE / BENCHMARK	8.2.	Historical and cultural perspectives of scientific explanations help to improve understanding of the nature of science and how science knowledge and technology evolve over time
GLE / PROFICIENCY	8.2.B.	Scientific theories are developed based on the body of knowledge that exists at any particular time and must be rigorously questioned and tested for validity
COMPONENT /	8.2.B.a.	Scope and Sequence - All Units: Describe the difficulty science innovators

INDICATOR		<p>experience as they attempt to break through accepted ideas (hypotheses, laws, theories) of their time to reach conclusions that may lead to changes in those ideas and serve to advance scientific understanding (e.g., Darwin, Copernicus, Newton)</p> <ul style="list-style-type: none"> Teacher Resource CD: Classifying Life
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**Missouri Grade Level Expectations
Science
Grade 8**

STRAND: BIG IDEA / STANDARD	MO.1.	Properties and Principals of Matter and Energy
CONCEPT: GLE / BENCHMARK	1.1.	Changes in properties and states of matter provide evidence of the atomic theory of matter
GLE / PROFICIENCY	1.1.I.	Mass is conserved during any physical or chemical change
COMPONENT / INDICATOR	1.1.I.c.	<p>Scope and Sequence - Cells and Body Systems: Explain that the amount of matter remains constant while being recycled through food chains and food webs</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 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
STRAND: BIG IDEA / STANDARD	MO.3.	Characteristics and Interactions of Living Organisms
CONCEPT: GLE / BENCHMARK	3.1.	There is a fundamental unity underlying the diversity of all living organisms
GLE / PROFICIENCY	3.1.D.	Plants and animals have different structures that serve similar functions necessary for the survival of the organism
COMPONENT / INDICATOR	3.1.D.a.	<p>Scope and Sequence - Cells and Body Systems: Identify and contrast the structures of plants and animals that serve similar functions (e.g., taking in water and oxygen, support, response to stimuli, obtaining energy, circulation, digestion, excretion, reproduction)</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 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,

		<p>and Observing</p> <ul style="list-style-type: none"> Virtual Laboratory: Classifying Living Organisms
STRAND: BIG IDEA / STANDARD	MO.3.	Characteristics and Interactions of Living Organisms
CONCEPT: GLE / BENCHMARK	3.2.	Living organisms carry out life processes in order to survive
GLE / PROFICIENCY	3.2.B.	All living organisms have genetic material (DNA) that carries hereditary information
COMPONENT / INDICATOR	3.2.B.a.	<p>Describe photosynthesis is a chemical change with reactants (water and carbon dioxide) and products (energy-rich sugar molecules and oxygen) that takes place in the presence of light and chlorophyll</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Plants
STRAND: BIG IDEA / STANDARD	MO.3.	Characteristics and Interactions of Living Organisms
CONCEPT: GLE / BENCHMARK	3.2.	Living organisms carry out life processes in order to survive
GLE / PROFICIENCY	3.2.C.	Chromosomes are components of cells that occur in pairs and carry hereditary information from one cell to daughter cells and from parent to offspring during reproduction
COMPONENT / INDICATOR	3.2.C.b.	<p>Illustrate and explain the path water and nutrients take as they move through the transport system of a plant</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Plants Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
COMPONENT / INDICATOR	3.2.C.g.	<p>Explain the interactions between the nervous and muscular systems when an organism responds to a stimulus</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs Teacher Resource CD: A Closer Look at Plants
STRAND: BIG IDEA / STANDARD	MO.3.	Characteristics and Interactions of Living Organisms
CONCEPT: GLE / BENCHMARK	3.2.	Living organisms carry out life processes in order to survive
GLE / PROFICIENCY	3.2.G.	Life processes can be disrupted by disease (intrinsic failures of the organ systems or by infection due to other organisms)
COMPONENT / INDICATOR	3.2.G.c.	<p>Scope and Sequence - Disease: Differentiate between infectious and noninfectious diseases</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes
STRAND: BIG IDEA / STANDARD	MO.3.	Characteristics and Interactions of Living Organisms
CONCEPT: GLE / BENCHMARK	3.3.	There is a genetic basis for the transfer of biological characteristics from one generation to the next through productive processes

GLE / PROFICIENCY	3.3.A.	Reproduction can occur asexually or sexually
COMPONENT / INDICATOR	3.3.A.a.	Compare and contrast the processes of asexual and sexual reproduction, including the type and number of cells involved (one body cell in asexual, two sex cells in sexual), and the number of gene sets (body cell has two sets, sex cells have one set each) passed from parent (s) to offspring <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants
COMPONENT / INDICATOR	3.3.A.b.	Identify examples of asexual reproduction (i.e., plants budding, binary fission of single cell organisms) <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants
COMPONENT / INDICATOR	3.3.A.c.	Compare and contrast the reproductive mechanisms of classes of vertebrates (i.e., internal vs. external fertilization) <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Animals
COMPONENT / INDICATOR	3.3.A.d.	Describe how flowering plants reproduce sexually <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 Plants
STRAND: BIG IDEA / STANDARD	MO.3.	Characteristics and Interactions of Living Organisms
CONCEPT: GLE / BENCHMARK	3.3.	There is a genetic basis for the transfer of biological characteristics from one generation to the next through productive processes
GLE / PROFICIENCY	3.3.C.	Chromosomes are components of cells that occur in pairs and carry hereditary information from one cell to daughter cells and from parent to offspring during reproduction
COMPONENT / INDICATOR	3.3.C.b.	Recognize and describe how when asexual reproduction occurs, the same genetic information found in the parent cell is copied and passed on to each new daughter cell (Assess only the concept - not the term or process of mitosis) <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants
COMPONENT / INDICATOR	3.3.C.c.	Recognize and describe how when sexual reproduction occurs, genetic material from both parents is passed on and combined to form the genetic code for the new organism (Assess only the concept - not the term or process of meiosis) <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

		<p>to Reproduction</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants
STRAND: BIG IDEA / STANDARD	MO.3.	Characteristics and Interactions of Living Organisms
CONCEPT: GLE / BENCHMARK	3.3.	There is a genetic basis for the transfer of biological characteristics from one generation to the next through productive processes
GLE / PROFICIENCY	3.3.D.	There is heritable variation within every species of organism
COMPONENT / INDICATOR	3.3.D.a.	<p>Scope and Sequence - Reproduction and Heredity: Recognize and describe when asexual reproduction occurs, the daughter cell is identical to the parent cell (assuming no change in the parent genes)</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants
COMPONENT / INDICATOR	3.3.D.b.	<p>Scope and Sequence - Reproduction and Heredity: Recognize and describe when sexual reproduction occurs, the offspring is not identical to either parent due to the combining of the different genetic codes contained in each sex cell</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants
STRAND: BIG IDEA / STANDARD	MO.4.	Changes in Ecosystems and Interactions of Organisms with Their Environments
CONCEPT: GLE / BENCHMARK	4.1.	Organisms are interdependent with one another with their environment
GLE / PROFICIENCY	4.1.D.	The diversity of species within an ecosystem is affected by changes in the environment, which can be caused by other organisms or outside processes
COMPONENT / INDICATOR	4.1.D.a.	<p>Scope and Sequence - Disease: Explain the beneficial or detrimental impact that some organisms (i.e., viruses, bacteria, protists, fungi) may have on other organisms (e.g., diseases, antibiotics, breakdown of waste, fermentation)</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi Teacher Resource CD: A Closer Look at Microbes
STRAND: BIG IDEA / STANDARD	MO.4.	Changes in Ecosystems and Interactions of Organisms with Their Environments
CONCEPT: GLE / BENCHMARK	4.2.	Matter and Energy flow through an ecosystem
GLE / PROFICIENCY	4.2.B.	Matter is recycled through an ecosystem
COMPONENT / INDICATOR	4.2.B.a.	Scope and Sequence - Cells and Body Systems: Illustrate the oxygen/carbon dioxide cycles (including the processes of photosynthesis and cellular respiration)

		<ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Plants
STRAND: BIG IDEA / STANDARD	MO.7.	Scientific Inquiry
CONCEPT: GLE / BENCHMARK	7.1.	Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking
GLE / PROFICIENCY	7.1.A.	Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation
COMPONENT / INDICATOR	7.1.A.b.	<p>Scope and Sequence - All Units: Identify and describe the importance of the independent variable, dependent variables, control of constants, and multiple trials to the design of a valid experiment</p> <ul style="list-style-type: none"> 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
COMPONENT / INDICATOR	7.1.A.c.	<p>Scope and Sequence - All Units: Design and conduct a valid experiment</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 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 Virtual Laboratory: Classifying Living Organisms
COMPONENT / INDICATOR	7.1.A.d.	<p>Scope and Sequence - All Units: Evaluate the design of an experiment and make suggestions for reasonable improvements or extensions of an experiment</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms

		<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 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 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 • Virtual Laboratory: Classifying Living Organisms
<p>COMPONENT / INDICATOR</p>	<p>7.1.A.e.</p>	<p>Scope and Sequence - All Units: Recognize that different kinds of questions suggest different kinds of scientific investigations (e.g., some involve observing and describing objects organisms, or events; some involve collecting specimens; some involve experiments; some involve making observations in nature; some involve discovery of new objects and phenomena; some involve making models)</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 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

		<ul style="list-style-type: none"> Virtual Laboratory: Classifying Living Organisms
COMPONENT / INDICATOR	7.1.A.f.	<p>Scope and Sequence - All Units: Acknowledge there is no fixed procedure called "the scientific method", but some investigations involve systematic observations, carefully collected and relevant evidence, logical reasoning, and imagination in developing hypotheses and other explanations</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 Virtual Laboratory: Classifying Living Organisms
STRAND: BIG IDEA / STANDARD	MO.7.	Scientific Inquiry
CONCEPT: GLE / BENCHMARK	7.1.	Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking
GLE / PROFICIENCY	7.1.B.	Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations
COMPONENT / INDICATOR	7.1.B.b.	<p>Scope and Sequence - All Units: Determine the appropriate tools and techniques to collect data</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

		<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 • Virtual Laboratory: Classifying Living Organisms
<p>COMPONENT / INDICATOR</p>	<p>7.1.B.c.</p>	<p>Scope and Sequence - All Units: Use a variety of tools and equipment to gather data (e.g., microscopes, thermometers, analog and digital meters, computers, spring scales, balances, metric rulers, graduated cylinders, stopwatches)</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

		<p>Survey</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey Virtual Laboratory: Classifying Living Organisms
COMPONENT / INDICATOR	7.1.B.d.	<p>Scope and Sequence - All Units: Measure length to the nearest millimeter, mass to the nearest gram, volume to the nearest milliliter, force (weight) to the nearest Newton, temperature to the nearest degree Celsius, time to the nearest second</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 4: Seed Harvesting and Measurement
COMPONENT / INDICATOR	7.1.B.e.	<p>Scope and Sequence - All Units: Compare amounts/measurements</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle
COMPONENT / INDICATOR	7.1.B.g.	<p>Scope and Sequence - All Units: Calculate the range and average/mean of a set of data</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 4: Seed Harvesting and Measurement
STRAND: BIG IDEA / STANDARD	MO.7.	Scientific Inquiry
CONCEPT: GLE / BENCHMARK	7.1.	Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking
GLE / PROFICIENCY	7.1.C.	Scientific inquiry includes evaluation of explanations (laws/principles, theories/models) in light of evidence (data) and scientific principles (understandings)
COMPONENT / INDICATOR	7.1.C.a.	<p>Scope and Sequence - All Units: Use quantitative and qualitative data as support for reasonable explanations (conclusions)</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

		<p>Preference of Pill Bugs</p> <ul style="list-style-type: none"> • 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 • Virtual Laboratory: Classifying Living Organisms
COMPONENT / INDICATOR	7.1.C.b.	<p>Scope and Sequence - All Units: Use data as support for observed patterns and relationships, and to make predictions to be tested</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: Classifying Life • Virtual Laboratory: Classifying Living Organisms
STRAND: BIG IDEA / STANDARD	MO.7.	Scientific Inquiry
CONCEPT: GLE / BENCHMARK	7.1.	Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking
GLE / PROFICIENCY	7.1.D.	The nature of science relies upon communication of results and justification of explanations

COMPONENT / INDICATOR	7.1.D.a.	<p>Scope and Sequence - All Units: Communicate the procedures and results of investigations and explanations through: oral presentations, drawings and maps, data tables (allowing for the recording and analysis of data relevant to the experiment, such as independent and dependent variables, multiple trials, beginning and ending times or temperatures, derived quantities) graphs (bar, single line, pictograph), equations and writings</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: Field Biology - Collecting, Identifying, and Observing • Virtual Laboratory: Classifying Living Organisms
STRAND: BIG IDEA / STANDARD	MO.8.	Impact of Science, Technology and Human Activity
CONCEPT: GLE / BENCHMARK	8.1.	The nature of technology can advance, and is advanced by, science as it seeks to apply scientific knowledge in ways that meet human needs
GLE / PROFICIENCY	8.1.B.	Advances in technology often result in improved data collection and an increase in scientific information
COMPONENT / INDICATOR	8.1.B.a.	<p>Scope and Sequence - All Units: Identify the link between technological developments and the scientific discoveries made possible through their development (e.g., Hubble telescope and stellar evolution, composition and structure of the universe; the electron microscope and cell organelles; sonar and the composition of the Earth; manned and unmanned space missions and space exploration; Doppler radar and weather conditions; MRI and CAT-scans and brain activity))</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for

		<p>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 4 Activity 3: Experimental Design • Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey
STRAND: BIG IDEA / STANDARD	MO.8.	Impact of Science, Technology and Human Activity
CONCEPT: GLE / BENCHMARK	8.2.	Historical and cultural perspectives of scientific explanations help to improve understanding of the nature of science and how science knowledge and technology evolve over time
GLE / PROFICIENCY	8.2.A.	People of different gender and ethnicity have contributed to scientific discoveries and the invention of technological innovations
COMPONENT / INDICATOR	8.2.A.a.	<p>Scope and Sequence - All Units: Describe how the contributions of scientists and inventors, representing different cultures, races, and gender, have contributed to science, technology and human activity (e.g., George Washington Carver, Thomas Edison, Thomas Jefferson, Isaac Newton, Marie Curie, Galileo, Albert Einstein, Mae Jemison, Edwin Hubble, Charles Darwin, Jonas Salk, Louis Pasteur, Jane Goodall, Tom Akers, John Wesley Powell, Rachel Carson) (Assess Locally)</p> <ul style="list-style-type: none"> • Teacher Resource CD: Classifying Life
STRAND: BIG IDEA / STANDARD	MO.8.	Impact of Science, Technology and Human Activity
CONCEPT: GLE / BENCHMARK	8.2.	Historical and cultural perspectives of scientific explanations help to improve understanding of the nature of science and how science knowledge and technology evolve over time
GLE / PROFICIENCY	8.2.B.	Scientific theories are developed based on the body of knowledge that exists at any particular time and must be rigorously questioned and tested for validity
COMPONENT / INDICATOR	8.2.B.a.	<p>Scope and Sequence - All Units: Describe the difficulty science innovators experience as they attempt to break through accepted ideas (hypotheses, laws, theories) of their time to reach conclusions that may lead to changes in those ideas and serve to advance scientific understanding (e.g., Darwin, Copernicus, Newton)</p> <ul style="list-style-type: none"> • Teacher Resource CD: Classifying Life

**Missouri Grade Level Expectations
Science
Grade 9**

STRAND: BIG IDEA / STANDARD	MO.LO.3.1.	Characteristic and Interactions of Living Organisms: There is a fundamental unity underlying the diversity of all living organisms
CONCEPT: GLE / BENCHMARK	LO.3.1.C.9-12.b.	Cells are the fundamental units of structure and function of all living things: Describe the structure of cell parts (e.g., cell wall, cell membrane, cytoplasm, nucleus, chloroplast, mitochondrion, ribosomes, vacuole) found in different types of cells (e.g., bacterial, plant, skin, nerve, blood, muscle) and the functions they perform (e.g., structural support, transport of materials, storage of genetic information, photosynthesis and respiration, synthesis of new molecules, waste disposal) that are necessary to the survival of the cell and organism

		<ul style="list-style-type: none"> 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 4 Activity 2: Environmental Preference of Pill Bugs Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.1.E.9-12.a.	<p>Biological classifications are based on how organisms are related: Explain how similarities used to group taxa might reflect evolutionary relationships (e.g., similarities in DNA and protein structures, internal anatomical features, patterns of development)</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 Virtual Laboratory: Classifying Living Organisms
CONCEPT: GLE / BENCHMARK	LO.3.1.E.9-12.b.	<p>Biological classifications are based on how organisms are related: Explain how and why the classification of any taxon might change as more is learned about the organisms assigned to that taxon</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
STRAND: BIG IDEA / STANDARD	MO.LO.3.2.	Characteristic and Interactions of Living Organisms: Living organisms carry out life processes in order to survive
CONCEPT: GLE / BENCHMARK	LO.3.2.B.9-12.a.	<p>Photosynthesis and cellular respiration are complementary processes necessary to the survival of most organisms on Earth: Compare and contrast photosynthesis and cellular respiration reactions (Do NOT assess intermediate reactions)</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.2.B.9-12.b.	Photosynthesis and cellular respiration are complementary processes necessary to the survival of most organisms on Earth: Explain the interrelationship between the processes of photosynthesis and cellular

		<p>respiration</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.2.B.9-12.c.	<p>Photosynthesis and cellular respiration are complementary processes necessary to the survival of most organisms on Earth: Determine what factors affect the processes of photosynthesis and cellular respiration (i.e., light intensity, availability of reactants, temperature)</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.2.D.9-12.a.	<p>Cells carry out chemical transformations that use energy for the synthesis or breakdown of organic compounds: Summarize how energy transfer occurs during photosynthesis and cellular respiration (i.e., the storage and release of energy in the bonds of chemical compounds)</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Plants
STRAND: BIG IDEA / STANDARD	MO.LO.3.3.	<p>Characteristic and Interactions of Living Organisms: There is a genetic basis for the transfer of biological characteristics from one generation to the next through reproductive processes</p>
CONCEPT: GLE / BENCHMARK	LO.3.3.A.9-12.a.	<p>Reproduction can occur asexually or sexually: Distinguish between asexual (i.e., binary fission, budding, cloning) and sexual reproduction</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.3.B.9-12.d.	<p>All living organisms have genetic material (DNA) that carries hereditary information: Recognize that degree of relatedness can be determined by comparing DNA sequences</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Animals Teacher Resource CD: A Closer Look at Plants Teacher Resource CD: Classifying Life
CONCEPT: GLE / BENCHMARK	LO.3.3.C.9-12.a.	<p>Chromosomes are components of cells that occur in pairs and carry hereditary information from one cell to daughter cells and from parent to offspring during reproduction: Recognize the chromosomes of daughter cells, formed through the processes of asexual reproduction and mitosis, the formation of somatic (body) cells in multicellular organisms, are identical to the chromosomes of the parent cell</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.3.C.9-12.b.	<p>Chromosomes are components of cells that occur in pairs and carry hereditary information from one cell to daughter cells and from parent to offspring during reproduction: Recognize that during meiosis, the formation of sex cells, chromosomes are reduced to half the number present in the parent cell</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes

		<ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.3.C.9-12.c.	<p>Chromosomes are components of cells that occur in pairs and carry hereditary information from one cell to daughter cells and from parent to offspring during reproduction: Explain how fertilization restores the diploid number of chromosomes</p> <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
CONCEPT: GLE / BENCHMARK	LO.3.3.D.9-12.a.	<p>There is heritable variation within every species of organism: Describe the advantages and disadvantages of asexual and sexual reproduction with regard to variation within a population</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.3.D.9-12.b.	<p>There is heritable variation within every species of organism: Describe how genes can be altered and combined to create genetic variation within a species (e.g., mutation, recombination of genes)</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
STRAND: BIG IDEA / STANDARD	MO.EC.4.1.	Changes in Ecosystems and Interactions of Organisms with their Environments: Organisms are interdependent with one another and their environment
CONCEPT: GLE / BENCHMARK	EC.4.1.A.9-12.a.	<p>All populations living together within a community interact with one another and with their environment in order to survive and maintain a balanced ecosystem: Explain the nature of interactions between organisms in different symbiotic relationships (i.e., mutualism, commensalism, parasitism)</p> <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 Microbes Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	EC.4.1.A.9-12.b.	<p>All populations living together within a community interact with one another and with their environment in order to survive and maintain a balanced ecosystem: Explain how cooperative (e.g., symbiosis) and competitive (e.g., predator/prey) relationships help maintain balance</p>

		<p>within an ecosystem</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Microbes
CONCEPT: GLE / BENCHMARK	EC.4.1.A.9-12.c.	<p>All populations living together within a community interact with one another and with their environment in order to survive and maintain a balanced ecosystem: Explain why no two species can occupy the same niche in a community</p> <ul style="list-style-type: none"> • Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
CONCEPT: GLE / BENCHMARK	EC.4.1.B.9-12.a.	<p>Living organisms have the capacity to produce populations of infinite size, but environments and resources are finite: Identify and explain the limiting factors that may affect the carrying capacity of a population within an ecosystem</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 1: Scavenging for Bacteria and Fungi • Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife • 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
CONCEPT: GLE / BENCHMARK	EC.4.1.B.9-12.b.	<p>Living organisms have the capacity to produce populations of infinite size, but environments and resources are finite: Predict how populations within an ecosystem change in number and/or structure in response to hypothesized changes in biotic and/or abiotic factors</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 1: Scavenging for Bacteria and Fungi • Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife • 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
CONCEPT:	EC.4.1.D.9-	The diversity of species within an ecosystem is affected by changes in

GLE / BENCHMARK	12.a.	<p>the environment, which can be caused by other organisms or outside processes: Predict the impact (beneficial or harmful) a natural environmental event (e.g., forest fire, flood, volcanic eruption, avalanche) may have on the diversity of different species in an ecosystem</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 • Teacher Resource CD: A Closer Look at Animals • Teacher Resource CD: A Closer Look at Plants • Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing • Virtual Laboratory: Classifying Living Organisms
STRAND: BIG IDEA / STANDARD	MO.EC.4.2.	Changes in Ecosystems and Interactions of Organisms with their Environments: Matter and energy flow through the ecosystem
CONCEPT: GLE / BENCHMARK	EC.4.2.A.9-12.a.	<p>As energy flows through the ecosystem, all organisms capture a portion of that energy and transform it to a form they can use: Illustrate and describe the flow of energy within a food web</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
CONCEPT: GLE / BENCHMARK	EC.4.2.A.9-12.b.	<p>As energy flows through the ecosystem, all organisms capture a portion of that energy and transform it to a form they can use: Explain why there are generally more producers than consumers in an energy pyramid</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 • Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey
CONCEPT: GLE / BENCHMARK	EC.4.2.A.9-12.c.	<p>As energy flows through the ecosystem, all organisms capture a portion of that energy and transform it to a form they can use: Predict how energy distribution and energy use will be altered due to changes in a food web</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
STRAND: BIG IDEA / STANDARD	MO.EC.4.3.	Changes in Ecosystems and Interactions of Organisms with their Environments: Genetic variation sorted by the natural selection process explains evidence of biological evolution
CONCEPT: GLE / BENCHMARK	EC.4.3.A.9-12.b.	<p>Evidence for the nature and rates of evolution can be found in anatomical and molecular characteristics of organisms and in the fossil record: Evaluate the evidence that supports the theory of biological evolution (e.g., fossil records, similarities between DNA and protein structures, similarities between developmental stages of</p>

		<p>organisms, homologous and vestigial structures)</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Animals • Teacher Resource CD: A Closer Look at Plants • Teacher Resource CD: Classifying Life
CONCEPT: GLE / BENCHMARK	EC.4.3.B.9-12.a.	<p>Reproduction is essential to the continuation of every species: Define a species in terms of the ability to breed and produce fertile offspring</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 • Teacher Resource CD: Classifying Life • Virtual Laboratory: Classifying Living Organisms
CONCEPT: GLE / BENCHMARK	EC.4.3.B.9-12.b.	<p>Reproduction is essential to the continuation of every species: Explain the importance of reproduction to the survival of a species (i.e., the failure of a species to reproduce will lead to extinction of that species)</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Microbes
CONCEPT: GLE / BENCHMARK	EC.4.3.C.9-12.b.	<p>Natural selection is the process of sorting individuals based on their ability to survive and reproduce within their ecosystem: Identify examples of adaptations that may have resulted from variations favored by natural selection (e.g., long-necked giraffes, long-eared jack rabbits)</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 2 Lab 3 Activity 1: Plant Life Cycle • 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 • Teacher Resource CD: A Closer Look at Animals • Teacher Resource CD: A Closer Look at Plants • Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing • Virtual Laboratory: Classifying Living Organisms
STRAND: BIG IDEA / STANDARD	MO.ES.5.1.	<p>Processes and Interactions of the Earth's Systems (Geosphere, Atmosphere, and Hydrosphere): Earth's Systems (geosphere, atmosphere, and hydrosphere) have common components and unique structures</p>
CONCEPT: GLE / BENCHMARK	ES.5.1.C.9-12.a.	<p>The atmosphere (air) is composed of a mixture of gases, including water vapor, and minute particles: Relate the composition of gases and temperature of the layers of the atmosphere (i.e., troposphere, stratosphere, ionosphere) to cloud formation and transmission of radiation (e.g., ultraviolet, infrared)</p>

		<ul style="list-style-type: none"> Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey
STRAND: BIG IDEA / STANDARD	MO.ES.5.2.	Processes and Interactions of the Earth's Systems (Geosphere, Atmosphere, and Hydrosphere): Earth's Systems (geosphere, atmosphere, and hydrosphere) interact with one another as they undergo change by common processes
CONCEPT: GLE / BENCHMARK	ES.5.2.A.9-12.a.	<p>The Earth's materials and surface features are changed through a variety of external processes: Explain the external processes (i.e., weathering, erosion, deposition of sediment) that result in the formation and modification of landforms</p> <ul style="list-style-type: none"> Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
STRAND: BIG IDEA / STANDARD	MO.SI.7.1.	Scientific Inquiry: Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking
CONCEPT: GLE / BENCHMARK	SI.7.1.A.9-12.a.	<p>Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation: Formulate testable questions and hypotheses</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 Virtual Laboratory: Classifying Living Organisms
CONCEPT: GLE /	SI.7.1.A.9-12.b.	Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate

BENCHMARK		<p>investigative methods in order to obtain evidence relevant to the explanation: Analyzing an experiment, identify the components (i.e., independent variable, dependent variables, control of constants, multiple trials) and explain their importance to the design of a valid experiment</p> <ul style="list-style-type: none"> • 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
CONCEPT: GLE / BENCHMARK	SI.7.1.A.9-12.c.	<p>Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation: Design and conduct a valid experiment</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 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 • Virtual Laboratory: Classifying Living Organisms
CONCEPT: GLE / BENCHMARK	SI.7.1.A.9-12.f.	<p>Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation: Acknowledge there is no fixed procedure called 'the scientific method', but that some investigations involve systematic observations, carefully collected and relevant evidence, logical reasoning, and some imagination in developing hypotheses and other explanations</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

		<ul style="list-style-type: none"> • 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 • Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.A.9-12.g.</p>	<p>Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation: Evaluate the design of an experiment and make suggestions for reasonable improvements</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 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

		<ul style="list-style-type: none"> Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey Virtual Laboratory: Classifying Living Organisms
CONCEPT: GLE / BENCHMARK	SI.7.1.B.9-12.a.	<p>Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Make qualitative and quantitative observations using the appropriate senses, tools and equipment to gather data (e.g., microscopes, thermometers, analog and digital meters, computers, spring scales, balances, metric rulers, graduated cylinders)</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 Virtual Laboratory: Classifying Living Organisms
CONCEPT: GLE / BENCHMARK	SI.7.1.B.9-12.b.	<p>Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Measure length to the nearest millimeter, mass to the nearest gram, volume to the nearest milliliter, force (weight) to the nearest Newton, temperature to the nearest degree Celsius, time to the nearest second</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 4: Seed Harvesting and Measurement
CONCEPT: GLE / BENCHMARK	SI.7.1.B.9-12.c.	<p>Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Determine the appropriate tools and</p>

		<p>techniques to collect, analyze, and interpret data</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 • Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.B.9-12.e.</p>	<p>Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Calculate the range, average/mean, percent, and ratios for sets of data</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 4: Seed Harvesting and Measurement
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.C.9-12.a.</p>	<p>Evidence is used to formulate explanations: Use quantitative and qualitative data as support for reasonable explanations (conclusions)</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

		<p>Pollination</p> <ul style="list-style-type: none"> • 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 • Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.C.9-12.b.</p>	<p>Evidence is used to formulate explanations: Analyze experimental data to determine patterns, relationship, perspectives, and credibility of explanations (e.g., predict/extrapolate data, explain the relationship between the independent and dependent variable)</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

		<ul style="list-style-type: none"> Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey Teacher Resource CD: Classifying Life Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.D.9-12.a.</p>	<p>Scientific inquiry includes evaluation of explanations (hypotheses, laws, theories) in light of scientific principles (understandings): Analyze whether evidence (data) and scientific principles support proposed explanations (hypotheses, laws, theories)</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 Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.E.9-12.a.</p>	<p>The nature of science relies upon communication of results and justification of explanations: Communicate the procedures and results of investigations and explanations through: oral presentations; drawings and maps; data tables (allowing for the recording and analysis of data relevant to the experiment such as independent and dependent variables, multiple trials, beginning and ending times or temperatures, derived quantities); graphs (bar, single, and multiple line); equations and writings</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 4 Activity 1: Observing the Behavior of Pill Bugs Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs

		<ul style="list-style-type: none"> • 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: Field Biology - Collecting, Identifying, and Observing
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.E.9-12.b.</p>	<p>The nature of science relies upon communication of results and justification of explanations: Communicate and defend a scientific argument</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 • Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.E.9-12.c.</p>	<p>The nature of science relies upon communication of results and justification of explanations: Explain the importance of the public presentation of scientific work and supporting evidence to the scientific community (e.g., work and evidence must be critiqued, reviewed, and validated by peers; needed for subsequent investigations by peers; results can influence the decisions regarding</p>

		<p>future scientific work)</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 • Virtual Laboratory: Classifying Living Organisms
STRAND: BIG IDEA / STANDARD	MO.ST.8.1.	Impact of Science, Technology and Human Activity: The nature of technology can advance, and is advanced by, science as it seeks to apply scientific knowledge in ways that meet human needs
CONCEPT: GLE / BENCHMARK	ST.8.1.B.9-12.a.	<p>Advances in technology often result in improved data collection and an increase in scientific information: Recognize the relationships linking technology and science (e.g., how technological problems may create a demand for new science knowledge, how new technologies make it possible for scientists to extend research and advance science)</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design
STRAND: BIG IDEA / STANDARD	MO.ST.8.2.	Impact of Science, Technology and Human Activity: Historical and cultural perspectives of scientific explanations help to improve understanding of the nature of science and how science knowledge and technology evolve over time
CONCEPT: GLE / BENCHMARK	ST.8.2.A.9-12.a.	<p>People of different gender and ethnicity have contributed to scientific discoveries and the invention of technological innovations: Recognize contributions to science are not limited to the work of one particular group, but are made by a diverse group of scientists representing various ethnic and gender groups</p>

		<ul style="list-style-type: none"> Teacher Resource CD: Classifying Life
CONCEPT: GLE / BENCHMARK	ST.8.2.B.9-12.a.	<p>Scientific theories are developed based on the body of knowledge that exists at any particular time and must be rigorously questioned and tested for validity: Identify and describe how explanations (hypotheses, laws, theories) of scientific phenomena have changed over time as a result of new evidence (e.g., model of the solar system, basic structure of matter, structure of an atom, Theory of Plate Tectonics, Big Bang and nebular theory of the Universe, explanation of electric current)</p> <ul style="list-style-type: none"> Teacher Resource CD: Classifying Life
CONCEPT: GLE / BENCHMARK	ST.8.2.B.9-12.b.	<p>Scientific theories are developed based on the body of knowledge that exists at any particular time and must be rigorously questioned and tested for validity: Identify and analyze current theories that are being questioned, and compare them to new theories that have emerged to challenge older ones (e.g., Theory of Evolution, theories of extinction, global warming) (Assess Locally)</p> <ul style="list-style-type: none"> Teacher Resource CD: Classifying Life

**Missouri Grade Level Expectations
Science
Grade 10**

STRAND: BIG IDEA / STANDARD	MO.LO.3.1.	Characteristic and Interactions of Living Organisms: There is a fundamental unity underlying the diversity of all living organisms
CONCEPT: GLE / BENCHMARK	LO.3.1.C.9-12.b.	<p>Cells are the fundamental units of structure and function of all living things: Describe the structure of cell parts (e.g., cell wall, cell membrane, cytoplasm, nucleus, chloroplast, mitochondrion, ribosomes, vacuole) found in different types of cells (e.g., bacterial, plant, skin, nerve, blood, muscle) and the functions they perform (e.g., structural support, transport of materials, storage of genetic information, photosynthesis and respiration, synthesis of new molecules, waste disposal) that are necessary to the survival of the cell and organism</p> <ul style="list-style-type: none"> 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 4 Activity 2: Environmental Preference of Pill Bugs Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.1.E.9-12.a.	<p>Biological classifications are based on how organisms are related: Explain how similarities used to group taxa might reflect evolutionary relationships (e.g., similarities in DNA and protein structures, internal anatomical features, patterns of development)</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms

		<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 Plants • Teacher Resource CD: Classifying Life • Virtual Laboratory: Classifying Living Organisms
CONCEPT: GLE / BENCHMARK	LO.3.1.E.9-12.b.	<p>Biological classifications are based on how organisms are related: Explain how and why the classification of any taxon might change as more is learned about the organisms assigned to that taxon</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
STRAND: BIG IDEA / STANDARD	MO.LO.3.2.	Characteristic and Interactions of Living Organisms: Living organisms carry out life processes in order to survive
CONCEPT: GLE / BENCHMARK	LO.3.2.B.9-12.a.	<p>Photosynthesis and cellular respiration are complementary processes necessary to the survival of most organisms on Earth: Compare and contrast photosynthesis and cellular respiration reactions (Do NOT assess intermediate reactions)</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.2.B.9-12.b.	<p>Photosynthesis and cellular respiration are complementary processes necessary to the survival of most organisms on Earth: Explain the interrelationship between the processes of photosynthesis and cellular respiration</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.2.B.9-12.c.	<p>Photosynthesis and cellular respiration are complementary processes necessary to the survival of most organisms on Earth: Determine what factors affect the processes of photosynthesis and cellular respiration (i.e., light intensity, availability of reactants, temperature)</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.2.D.9-12.a.	<p>Cells carry out chemical transformations that use energy for the synthesis or breakdown of organic compounds: Summarize how energy transfer occurs during photosynthesis and cellular respiration (i.e., the storage and release of energy in the bonds of chemical compounds)</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Plants

STRAND: BIG IDEA / STANDARD	MO.LO.3.3.	Characteristic and Interactions of Living Organisms: There is a genetic basis for the transfer of biological characteristics from one generation to the next through reproductive processes
CONCEPT: GLE / BENCHMARK	LO.3.3.A.9-12.a.	<p>Reproduction can occur asexually or sexually: Distinguish between asexual (i.e., binary fission, budding, cloning) and sexual reproduction</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Microbes • Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.3.B.9-12.d.	<p>All living organisms have genetic material (DNA) that carries hereditary information: Recognize that degree of relatedness can be determined by comparing DNA sequences</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Animals • Teacher Resource CD: A Closer Look at Plants • Teacher Resource CD: Classifying Life
CONCEPT: GLE / BENCHMARK	LO.3.3.C.9-12.a.	<p>Chromosomes are components of cells that occur in pairs and carry hereditary information from one cell to daughter cells and from parent to offspring during reproduction: Recognize the chromosomes of daughter cells, formed through the processes of asexual reproduction and mitosis, the formation of somatic (body) cells in multicellular organisms, are identical to the chromosomes of the parent cell</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Microbes • Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.3.C.9-12.b.	<p>Chromosomes are components of cells that occur in pairs and carry hereditary information from one cell to daughter cells and from parent to offspring during reproduction: Recognize that during meiosis, the formation of sex cells, chromosomes are reduced to half the number present in the parent cell</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Microbes • Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.3.C.9-12.c.	<p>Chromosomes are components of cells that occur in pairs and carry hereditary information from one cell to daughter cells and from parent to offspring during reproduction: Explain how fertilization restores the diploid number of chromosomes</p> <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
CONCEPT: GLE / BENCHMARK	LO.3.3.D.9-12.a.	<p>There is heritable variation within every species of organism: Describe the advantages and disadvantages of asexual and sexual reproduction with regard to variation within a population</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Microbes

		<ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	LO.3.3.D.9-12.b.	<p>There is heritable variation within every species of organism: Describe how genes can be altered and combined to create genetic variation within a species (e.g., mutation, recombination of genes)</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
STRAND: BIG IDEA / STANDARD	MO.EC.4.1.	Changes in Ecosystems and Interactions of Organisms with their Environments: Organisms are interdependent with one another and their environment
CONCEPT: GLE / BENCHMARK	EC.4.1.A.9-12.a.	<p>All populations living together within a community interact with one another and with their environment in order to survive and maintain a balanced ecosystem: Explain the nature of interactions between organisms in different symbiotic relationships (i.e., mutualism, commensalism, parasitism)</p> <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 Microbes Teacher Resource CD: A Closer Look at Plants
CONCEPT: GLE / BENCHMARK	EC.4.1.A.9-12.b.	<p>All populations living together within a community interact with one another and with their environment in order to survive and maintain a balanced ecosystem: Explain how cooperative (e.g., symbiosis) and competitive (e.g., predator/prey) relationships help maintain balance within an ecosystem</p> <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes
CONCEPT: GLE / BENCHMARK	EC.4.1.A.9-12.c.	<p>All populations living together within a community interact with one another and with their environment in order to survive and maintain a balanced ecosystem: Explain why no two species can occupy the same niche in a community</p> <ul style="list-style-type: none"> Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
CONCEPT: GLE / BENCHMARK	EC.4.1.B.9-12.a.	<p>Living organisms have the capacity to produce populations of infinite size, but environments and resources are finite: Identify and explain the limiting factors that may affect the carrying capacity of a population within an ecosystem</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 1: Scavenging for

		<p>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 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
CONCEPT: GLE / BENCHMARK	EC.4.1.B.9-12.b.	<p>Living organisms have the capacity to produce populations of infinite size, but environments and resources are finite: Predict how populations within an ecosystem change in number and/or structure in response to hypothesized changes in biotic and/or abiotic factors</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 1: Scavenging for Bacteria and Fungi • Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife • 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
CONCEPT: GLE / BENCHMARK	EC.4.1.D.9-12.a.	<p>The diversity of species within an ecosystem is affected by changes in the environment, which can be caused by other organisms or outside processes: Predict the impact (beneficial or harmful) a natural environmental event (e.g., forest fire, flood, volcanic eruption, avalanche) may have on the diversity of different species in an ecosystem</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 • Teacher Resource CD: A Closer Look at Animals • Teacher Resource CD: A Closer Look at Plants • Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing • Virtual Laboratory: Classifying Living Organisms
STRAND: BIG IDEA / STANDARD	MO.EC.4.2.	Changes in Ecosystems and Interactions of Organisms with their Environments: Matter and energy flow through the ecosystem
CONCEPT: GLE /	EC.4.2.A.9-12.a.	As energy flows through the ecosystem, all organisms capture a portion of that energy and transform it to a form they can use:

BENCHMARK		<p>Illustrate and describe the flow of energy within a food web</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
CONCEPT: GLE / BENCHMARK	EC.4.2.A.9-12.b.	<p>As energy flows through the ecosystem, all organisms capture a portion of that energy and transform it to a form they can use: Explain why there are generally more producers than consumers in an energy pyramid</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 • Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey
CONCEPT: GLE / BENCHMARK	EC.4.2.A.9-12.c.	<p>As energy flows through the ecosystem, all organisms capture a portion of that energy and transform it to a form they can use: Predict how energy distribution and energy use will be altered due to changes in a food web</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
STRAND: BIG IDEA / STANDARD	MO.EC.4.3.	<p>Changes in Ecosystems and Interactions of Organisms with their Environments: Genetic variation sorted by the natural selection process explains evidence of biological evolution</p>
CONCEPT: GLE / BENCHMARK	EC.4.3.A.9-12.b.	<p>Evidence for the nature and rates of evolution can be found in anatomical and molecular characteristics of organisms and in the fossil record: Evaluate the evidence that supports the theory of biological evolution (e.g., fossil records, similarities between DNA and protein structures, similarities between developmental stages of organisms, homologous and vestigial structures)</p> <ul style="list-style-type: none"> • Teacher Resource CD: A Closer Look at Animals • Teacher Resource CD: A Closer Look at Plants • Teacher Resource CD: Classifying Life
CONCEPT: GLE / BENCHMARK	EC.4.3.B.9-12.a.	<p>Reproduction is essential to the continuation of every species: Define a species in terms of the ability to breed and produce fertile offspring</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 • Teacher Resource CD: Classifying Life • Virtual Laboratory: Classifying Living Organisms
CONCEPT: GLE / BENCHMARK	EC.4.3.B.9-12.b.	<p>Reproduction is essential to the continuation of every species: Explain the importance of reproduction to the survival of a species (i.e., the failure of a species to reproduce will lead to extinction of that</p>

		species) <ul style="list-style-type: none"> Teacher Resource CD: A Closer Look at Microbes
CONCEPT: GLE / BENCHMARK	EC.4.3.C.9-12.b.	Natural selection is the process of sorting individuals based on their ability to survive and reproduce within their ecosystem: Identify examples of adaptations that may have resulted from variations favored by natural selection (e.g., long-necked giraffes, long-eared jack rabbits) <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 2 Lab 3 Activity 1: Plant Life Cycle 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 Teacher Resource CD: A Closer Look at Animals Teacher Resource CD: A Closer Look at Plants Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing Virtual Laboratory: Classifying Living Organisms
STRAND: BIG IDEA / STANDARD	MO.ES.5.1.	Processes and Interactions of the Earth's Systems (Geosphere, Atmosphere, and Hydrosphere): Earth's Systems (geosphere, atmosphere, and hydrosphere) have common components and unique structures
CONCEPT: GLE / BENCHMARK	ES.5.1.C.9-12.a.	The atmosphere (air) is composed of a mixture of gases, including water vapor, and minute particles: Relate the composition of gases and temperature of the layers of the atmosphere (i.e., troposphere, stratosphere, ionosphere) to cloud formation and transmission of radiation (e.g., ultraviolet, infrared) <ul style="list-style-type: none"> Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey
STRAND: BIG IDEA / STANDARD	MO.ES.5.2.	Processes and Interactions of the Earth's Systems (Geosphere, Atmosphere, and Hydrosphere): Earth's Systems (geosphere, atmosphere, and hydrosphere) interact with one another as they undergo change by common processes
CONCEPT: GLE / BENCHMARK	ES.5.2.A.9-12.a.	The Earth's materials and surface features are changed through a variety of external processes: Explain the external processes (i.e., weathering, erosion, deposition of sediment) that result in the formation and modification of landforms <ul style="list-style-type: none"> Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing
STRAND: BIG IDEA / STANDARD	MO.SI.7.1.	Scientific Inquiry: Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking
CONCEPT: GLE / BENCHMARK	SI.7.1.A.9-12.a.	Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the

		<p>explanation: Formulate testable questions and hypotheses</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 • Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.A.9-12.b.</p>	<p>Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation: Analyzing an experiment, identify the components (i.e., independent variable, dependent variables, control of constants, multiple trials) and explain their importance to the design of a valid experiment</p> <ul style="list-style-type: none"> • 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
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.A.9-12.c.</p>	<p>Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation: Design and conduct a valid experiment</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms

		<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 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 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 • Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.A.9-12.f.</p>	<p>Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation: Acknowledge there is no fixed procedure called 'the scientific method', but that some investigations involve systematic observations, carefully collected and relevant evidence, logical reasoning, and some imagination in developing hypotheses and other explanations</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

		<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 • Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.A.9-12.g.</p>	<p>Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation: Evaluate the design of an experiment and make suggestions for reasonable improvements</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 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 • Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.B.9-12.a.</p>	<p>Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Make qualitative and quantitative observations using the appropriate senses, tools and equipment to gather data (e.g., microscopes, thermometers, analog and digital meters, computers, spring scales, balances, metric rulers, graduated cylinders)</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

		<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 • 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 • Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.B.9-12.b.</p>	<p>Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Measure length to the nearest millimeter, mass to the nearest gram, volume to the nearest milliliter, force (weight) to the nearest Newton, temperature to the nearest degree Celsius, time to the nearest second</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 4: Seed Harvesting and Measurement
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.B.9-12.c.</p>	<p>Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Determine the appropriate tools and techniques to collect, analyze, and interpret data</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

		<ul style="list-style-type: none"> • 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 • Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.B.9-12.e.</p>	<p>Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations: Calculate the range, average/mean, percent, and ratios for sets of data</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 4: Seed Harvesting and Measurement
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.C.9-12.a.</p>	<p>Evidence is used to formulate explanations: Use quantitative and qualitative data as support for reasonable explanations (conclusions)</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

		<ul style="list-style-type: none"> Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.C.9-12.b.</p>	<p>Evidence is used to formulate explanations: Analyze experimental data to determine patterns, relationship, perspectives, and credibility of explanations (e.g., predict/extrapolate data, explain the relationship between the independent and dependent variable)</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: Classifying Life Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.D.9-12.a.</p>	<p>Scientific inquiry includes evaluation of explanations (hypotheses, laws, theories) in light of scientific principles (understandings): Analyze whether evidence (data) and scientific principles support proposed explanations (hypotheses, laws, theories)</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

		<ul style="list-style-type: none"> • 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 • Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.E.9-12.a.</p>	<p>The nature of science relies upon communication of results and justification of explanations: Communicate the procedures and results of investigations and explanations through: oral presentations; drawings and maps; data tables (allowing for the recording and analysis of data relevant to the experiment such as independent and dependent variables, multiple trials, beginning and ending times or temperatures, derived quantities); graphs (bar, single, and multiple line); equations and writings</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 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: Field Biology - Collecting, Identifying, and Observing
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.E.9-12.b.</p>	<p>The nature of science relies upon communication of results and justification of explanations: Communicate and defend a scientific argument</p> <ul style="list-style-type: none"> • Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms

		<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 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 • Virtual Laboratory: Classifying Living Organisms
<p>CONCEPT: GLE / BENCHMARK</p>	<p>SI.7.1.E.9-12.c.</p>	<p>The nature of science relies upon communication of results and justification of explanations: Explain the importance of the public presentation of scientific work and supporting evidence to the scientific community (e.g., work and evidence must be critiqued, reviewed, and validated by peers; needed for subsequent investigations by peers; results can influence the decisions regarding future scientific work)</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

		<ul style="list-style-type: none"> 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 Virtual Laboratory: Classifying Living Organisms
STRAND: BIG IDEA / STANDARD	MO.ST.8.1.	Impact of Science, Technology and Human Activity: The nature of technology can advance, and is advanced by, science as it seeks to apply scientific knowledge in ways that meet human needs
CONCEPT: GLE / BENCHMARK	ST.8.1.B.9-12.a.	<p>Advances in technology often result in improved data collection and an increase in scientific information: Recognize the relationships linking technology and science (e.g., how technological problems may create a demand for new science knowledge, how new technologies make it possible for scientists to extend research and advance science)</p> <ul style="list-style-type: none"> Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design
STRAND: BIG IDEA / STANDARD	MO.ST.8.2.	Impact of Science, Technology and Human Activity: Historical and cultural perspectives of scientific explanations help to improve understanding of the nature of science and how science knowledge and technology evolve over time
CONCEPT: GLE / BENCHMARK	ST.8.2.A.9-12.a.	<p>People of different gender and ethnicity have contributed to scientific discoveries and the invention of technological innovations: Recognize contributions to science are not limited to the work of one particular group, but are made by a diverse group of scientists representing various ethnic and gender groups</p> <ul style="list-style-type: none"> Teacher Resource CD: Classifying Life
CONCEPT: GLE / BENCHMARK	ST.8.2.B.9-12.a.	<p>Scientific theories are developed based on the body of knowledge that exists at any particular time and must be rigorously questioned and tested for validity: Identify and describe how explanations (hypotheses, laws, theories) of scientific phenomena have changed over time as a result of new evidence (e.g., model of the solar system, basic structure of matter, structure of an atom, Theory of Plate Tectonics, Big Bang and nebular theory of the Universe, explanation of electric current)</p> <ul style="list-style-type: none"> Teacher Resource CD: Classifying Life
CONCEPT: GLE / BENCHMARK	ST.8.2.B.9-12.b.	<p>Scientific theories are developed based on the body of knowledge that exists at any particular time and must be rigorously questioned and tested for validity: Identify and analyze current theories that are being questioned, and compare them to new theories that have emerged to challenge older ones (e.g., Theory of Evolution, theories of extinction, global warming) (Assess Locally)</p>

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| | | <ul style="list-style-type: none">• Teacher Resource CD: Classifying Life |
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