

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

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

**Kansas Curricular Standards**  
**Science**  
**Grade 7**

<b>STANDARD</b>	<b>KS.1.</b>	<b>Science as Inquiry: The student will develop the abilities to do scientific inquiry, be able to demonstrate how scientific inquiry is applied, and develop understandings about scientific inquiry.</b>
<b>BENCHMARK</b>	<b>1.1.</b>	<b>The student will demonstrate abilities necessary to do the processes of scientific inquiry.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>1.1.1.</b>	<p>The student identifies questions that can be answered through scientific investigations.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>1.1.2.</b>	<p>The student designs and conducts scientific investigations safely using appropriate tools, mathematics, technology, and techniques to gather, analyze, and interpret data.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> </ul>

		<ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<p>INDICATOR / PROFICIENCY LEVEL</p>	<p>1.1.3.</p>	<p>The student identifies the relationship between evidence and logical conclusions.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> </ul>

		<ul style="list-style-type: none"> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STANDARD</b>	<b>KS.1.</b>	<b>Science as Inquiry: The student will develop the abilities to do scientific inquiry, be able to demonstrate how scientific inquiry is applied, and develop understandings about scientific inquiry.</b>
<b>BENCHMARK</b>	<b>1.2.</b>	<b>The student will apply different kinds of investigations to different kinds of questions.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>1.2.1.</b>	<p>The student develops questions and adapts (frames) the inquiry process to guide the appropriate type of investigation.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STANDARD</b>	<b>KS.1.</b>	<b>Science as Inquiry: The student will develop the abilities to do scientific inquiry, be able to demonstrate how scientific inquiry is applied, and develop understandings about scientific inquiry.</b>
<b>BENCHMARK</b>	<b>1.3.</b>	<b>The student will analyze how science advances through the interaction of new ideas, scientific investigations, skepticism, and examinations of evidence of varied explanations.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>1.3.1.</b>	<p>The student, after completing an investigation, generates alternative methods of investigation and/or further questions for inquiry.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>

		<ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<p>INDICATOR / PROFICIENCY LEVEL</p>	<p>1.3.2.</p>	<p>The student evaluates the work of others to determine evidence which scientifically supports or contradicts the results, identifying faulty reasoning or conclusions that go beyond evidence and/or are not supported by data.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> </ul>

		<ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
STANDARD	KS.3.	Life Science: The student will apply process skills to explore and understand structure and function in living systems, reproduction and heredity, regulation and behavior, populations and ecosystems, and diversity and adaptations of organisms.
BENCHMARK	3.1.	The student will model structures of organisms and relate functions to the structures.
INDICATOR / PROFICIENCY LEVEL	3.1.3.	The student compares organisms composed of single cells with organisms that are multi-cellular. <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>Teacher Resource CD: A Closer Look at Microbes</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.1.4.	The student concludes that breakdowns in structure or function may be caused by disease, damage, heredity, or aging. <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Microbes</li> </ul>
STANDARD	KS.3.	Life Science: The student will apply process skills to explore and understand structure and function in living systems, reproduction and heredity, regulation and behavior, populations and ecosystems, and diversity and adaptations of organisms.
BENCHMARK	3.2.	The student will understand the role of reproduction and heredity for all living things.
INDICATOR / PROFICIENCY LEVEL	3.2.1.	The student differentiates between asexual and sexual reproduction of organisms. <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Microbes</li> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
STANDARD	KS.3.	Life Science: The student will apply process skills to explore and understand structure and function in living systems, reproduction and heredity, regulation and behavior, populations and ecosystems, and diversity and adaptations of organisms.
BENCHMARK	3.3.	The student will describe homeostasis, the regulation and balance of internal conditions in response to a changing external environment.
INDICATOR / PROFICIENCY LEVEL	3.3.1.	The student understands that internal and/or environmental conditions affect an organism's behavior and/or response in order to maintain and regulate stable internal conditions to survive in a continually changing environment. <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.3.2.	The student recognizes that the survival of all organisms requires the ingestion of materials, the intake and release of energy, growth, release of wastes and responses to environmental change. <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> </ul>

		<ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> </ul>
<b>STANDARD</b>	<b>KS.3.</b>	<b>Life Science: The student will apply process skills to explore and understand structure and function in living systems, reproduction and heredity, regulation and behavior, populations and ecosystems, and diversity and adaptations of organisms.</b>
<b>BENCHMARK</b>	<b>3.4.</b>	<b>The student will identify and relate interactions of populations of organisms within an ecosystem.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.4.1.</b>	<p>The student recognizes that all populations living together (biotic resources) and the physical factors (abiotic resources) with which they interact compose an ecosystem.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.4.3.</b>	<p>The student traces the energy flow from the sun (source of radiant energy) to producers (via photosynthesis - chemical energy) to consumers and decomposers in food webs.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>Teacher Resource CD: A Closer Look at Microbes</li> </ul>
<b>STANDARD</b>	<b>KS.3.</b>	<b>Life Science: The student will apply process skills to explore and understand structure and function in living systems, reproduction and heredity, regulation and behavior, populations and ecosystems, and diversity and adaptations of organisms.</b>
<b>BENCHMARK</b>	<b>3.5.</b>	<b>The student will observe the diversity of living things and relate their adaptations to their survival or extinction.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.5.1.</b>	<p>The student concludes that species of animals, plants, and microorganisms may look dissimilar on the outside but have similarities in internal structures, developmental characteristics, chemical processes, and genomes.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>Teacher Resource CD: A Closer Look at Animals</li> <li>Teacher Resource CD: A Closer Look at Microbes</li> <li>Teacher Resource CD: Classifying Life</li> <li>Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.5.2.</b>	<p>The student understands that adaptations of organisms (changes in structure, function, or behavior that accumulate over successive generations) contribute to biological diversity.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life</li> </ul>

		<p>Forms</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Teacher Resource CD: A Closer Look at Animals</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STANDARD</b>	<b>KS.5.</b>	<b>Science and Technology: The student will demonstrate abilities of technological design and understanding about science and technology.</b>
<b>BENCHMARK</b>	<b>5.2.</b>	<b>The student will develop understandings of the similarities, differences, and relationships in science and technology.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>5.2.1.</b>	<p>The student compares the work of various types of scientists and engineers.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Classifying Life</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>5.2.3.</b>	<p>The student identifies contributions to science and technology by many people and many cultures.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Classifying Life</li> </ul>
<b>STANDARD</b>	<b>KS.7.</b>	<b>History and Nature of Science: The student will examine and develop an understanding of science as a historical human endeavor.</b>
<b>BENCHMARK</b>	<b>7.1.</b>	<b>The student will develop scientific habits of mind.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>7.1.1.</b>	<p>The student practices intellectual honesty, demonstrates skepticism appropriately, displays open-mindedness to new ideas, and bases decisions on evidence.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> </ul>

		<ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STANDARD</b>	<b>KS.7.</b>	<b>History and Nature of Science: The student will examine and develop an understanding of science as a historical human endeavor.</b>
<b>BENCHMARK</b>	<b>7.2.</b>	<b>The student will research contributions to science throughout history.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>7.2.1.</b>	<p>The student recognizes that new knowledge leads to new questions and new discoveries, replicates historic experiments to understand principles of science, and relates contributions of men and women to the fields of science.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Classifying Life</li> </ul>

**Kansas Curricular Standards  
Science  
Grade 8**

<b>STANDARD</b>	<b>KS.1.</b>	<b>Science as Inquiry: The student will develop the abilities necessary to do scientific inquiry and develop an understanding of scientific inquiry.</b>
<b>BENCHMARK</b>	<b>1.1.</b>	<b>The student will demonstrate the abilities necessary to do scientific inquiry.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>1.1.1.</b>	<p>The student actively engages in asking and evaluating research questions.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>1.1.2.</b>	<p>The student actively engages in investigations, including developing questions, gathering and analyzing data, and designing and conducting research.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> </ul>

		<ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
--	--	--

<p><b>INDICATOR / PROFICIENCY LEVEL</b></p>	<p><b>1.1.3.</b></p>	<p>The student actively engages in using technological tools and mathematics in their own scientific investigations.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> </ul>
---	----------------------	--

		<ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
INDICATOR / PROFICIENCY LEVEL	1.1.4.	<p>The student actively engages in conducting an inquiry, formulating and revising his or her scientific explanations and models (physical, conceptual, or mathematical) using logic and evidence, and recognizing that potential alternative explanations and mod</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
STANDARD	KS.2B.	Physics: The student will develop an understanding of the structure of atoms, compounds, chemical reactions, and the interactions of energy and matter.
BENCHMARK	2B.2.	The student will understand the conservation of mass and energy, and the First and Second Laws of Thermodynamics.
INDICATOR / PROFICIENCY LEVEL	2B.2.2.	<p>The student understands the first law of thermodynamics states the total internal energy of a substance (the sum of all the kinetic and potential energies of its constituent molecules) will change only if heat is exchanged with the environment or work is</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> </ul>

		<ul style="list-style-type: none"> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
STANDARD	KS.3.	Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.
BENCHMARK	3.1.	The student will demonstrate an understanding of the structure and function of the cell.
INDICATOR / PROFICIENCY LEVEL	3.1.4.	<p>The student understands some plant cells contain chloroplasts, which are the sites of photosynthesis.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
STANDARD	KS.3.	Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.
BENCHMARK	3.2.	The student will demonstrate an understanding of chromosomes, genes, and the molecular basis of heredity.
INDICATOR / PROFICIENCY LEVEL	3.2.4.	<p>The student understands gametes carry the genetic information to the next generation.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Microbes</li> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
STANDARD	KS.3.	Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.
BENCHMARK	3.4.	The student will understand the interdependence of organisms and their interaction with the physical environment.
INDICATOR / PROFICIENCY LEVEL	3.4.2.	<p>The student understands energy is received, transformed and expended in ecosystems.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.4.4.	<p>The student understands organisms cooperate and compete in complex, interdependent relationships</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> </ul>

		<ul style="list-style-type: none"> <li>• Teacher Resource CD: A Closer Look at Animals</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
STANDARD	KS.3.	Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.
BENCHMARK	3.5.	The student will develop an understanding of matter, energy, and organization in living systems.
INDICATOR / PROFICIENCY LEVEL	3.5.1.	<p>The student understands living systems require a continuous input of energy to maintain their chemical and physical organization.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.5.2.	<p>The student understands the sun is the primary source of energy for life through the process of photosynthesis.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Teacher Resource CD: A Closer Look at Microbes</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.5.4.	<p>The student understands the structure and function of an organism serves to acquire, transform, transport, release, and eliminate the matter and energy used to sustain the organism.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Teacher Resource CD: A Closer Look at Animals</li> <li>• Teacher Resource CD: A Closer Look at Microbes</li> </ul>

		<ul style="list-style-type: none"> <li>• Teacher Resource CD: A Closer Look at Plants</li> <li>• Teacher Resource CD: Classifying Life</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STANDARD</b>	<b>KS.3.</b>	<b>Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.</b>
<b>BENCHMARK</b>	<b>3.6.</b>	<b>The student will understand the behavior of animals.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.6.1.</b>	<p>The student understands animals have behavioral responses to internal changes and to external stimuli.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.6.3.</b>	<p>The student understands behaviors are often adaptive when viewed in terms of survival and reproductive success.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Teacher Resource CD: A Closer Look at Animals</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
<b>STANDARD</b>	<b>KS.3.</b>	<b>Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.</b>
<b>BENCHMARK</b>	<b>3.7.</b>	<b>The student will demonstrate an understanding of the diversity of structure and function in organisms.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.7.1.</b>	<p>The student understands differences in structure and function among organisms and can identify the characteristics of relevant life forms.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Teacher Resource CD: A Closer Look at Animals</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>

		<ul style="list-style-type: none"> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.7.3.	<p>The student understands that living things change following a specific pattern of developmental stages called life cycles.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>Teacher Resource CD: A Closer Look at Animals</li> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.7.4.	<p>The student understands that in complex organisms there is a division of labor into specific body systems i.e., respiration, digestion, nervous, endocrine, excretion, circulatory, reproductive, immune, skeletal and muscle.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.7.5.	<p>The student understands taxonomy is the systematic way in which organisms are placed into a hierarchical classification system, according to their physical and genetic characteristics and their evolutionary history.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>Teacher Resource CD: A Closer Look at Animals</li> <li>Teacher Resource CD: A Closer Look at Plants</li> <li>Teacher Resource CD: Classifying Life</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
STANDARD	KS.4.	Earth and Space Science: The student will develop an understanding of energy in the earth system, geochemical cycles, the formation and organization of the earth system, the dynamics of the earth/moon/sun system, and the organization and development of th
BENCHMARK	4.1.	The student will develop an understanding of the sources of energy that power the subsystems and cycles of the dynamic earth: the geosphere, hydrosphere, atmosphere and biosphere.
INDICATOR / PROFICIENCY LEVEL	4.1.1.	<p>The student understands constructive and destructive processes, including weathering, erosion and deposition, dynamically reshape the surface of the earth.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>

<b>STANDARD</b>	<b>KS.5.</b>	<b>Science and Technology: The student will develop understandings about the relationship between science and technology.</b>
<b>BENCHMARK</b>	<b>5.1.</b>	The student will develop an understanding that technology is applied science.
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>5.1.1.</b>	The student understands technology is the application of scientific knowledge for functional purposes. <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>5.1.3.</b>	The student understands science advances new technologies. New technologies open new areas for scientific inquiry. <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> </ul>
<b>STANDARD</b>	<b>KS.6.</b>	<b>Science in Personal and Environmental Perspectives: The student will develop an understanding of personal and community health, population growth, natural resources, environmental quality, natural and human-induced hazards, and science and technology in I</b>
<b>BENCHMARK</b>	<b>6.1.</b>	The student will develop an understanding of the overall functioning of human systems and their interaction with the environment in order to understand specific mechanisms and processes related to health issues.
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>6.1.1.</b>	The student understands some chemical and physical hazards and accidents can be avoided through safety education. <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> </ul>

		<ul style="list-style-type: none"> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STANDARD</b>	<b>KS.6.</b>	<b>Science in Personal and Environmental Perspectives: The student will develop an understanding of personal and community health, population growth, natural resources, environmental quality, natural and human-induced hazards, and science and technology in I</b>
<b>BENCHMARK</b>	<b>6.2.</b>	<b>The student will demonstrate an understanding of population growth.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>6.2.1.</b>	<p>The student understands the rate of change in populations is determined by the combined effects of birth, death, emigration, and immigration.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>6.2.2.</b>	<p>The student understands a variety of factors influence birth rates and fertility rates.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>6.2.3.</b>	<p>The student understands populations have limits to growth.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
<b>STANDARD</b>	<b>KS.7.</b>	<b>History and Nature of Science: The student will develop understanding of science as a human endeavor, the nature of scientific knowledge, and historical perspectives.</b>
<b>BENCHMARK</b>	<b>7.2.</b>	<b>The student will develop an understanding of the nature of scientific knowledge.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>7.2.1.</b>	<p>The student understands scientific knowledge describes and explains the physical world in terms of matter, energy, and forces. Scientific knowledge is provisional and is subject to change as new evidence becomes available.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Classifying Life</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>7.2.2.</b>	<p>The student understands scientific knowledge begins with empirical observations, which are the data (also called facts or evidence) upon which further scientific knowledge is built.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> </ul>

		<ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STANDARD</b>	<b>KS.7.</b>	<b>History and Nature of Science: The student will develop understanding of science as a human endeavor, the nature of scientific knowledge, and historical perspectives.</b>
<b>BENCHMARK</b>	<b>7.3.</b>	<b>The student will understand science from historical perspectives.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>7.3.1.</b>	<p>The student demonstrates an understanding of the history of science.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Classifying Life</li> </ul>

**Kansas Curricular Standards  
Science  
Grade 9**

<b>STANDARD</b>	<b>KS.1.</b>	<b>Science as Inquiry: The student will develop the abilities necessary to do scientific inquiry and develop an understanding of scientific inquiry.</b>
<b>BENCHMARK</b>	<b>1.1.</b>	<b>The student will demonstrate the abilities necessary to do scientific inquiry.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>1.1.1.</b>	<p>The student actively engages in asking and evaluating research questions.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> </ul>

		<ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<p><b>INDICATOR / PROFICIENCY LEVEL</b></p>	<p>1.1.2.</p>	<p>The student actively engages in investigations, including developing questions, gathering and analyzing data, and designing and conducting research.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<p><b>INDICATOR / PROFICIENCY LEVEL</b></p>	<p>1.1.3.</p>	<p>The student actively engages in using technological tools and mathematics in their own scientific investigations.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> </ul>

		<ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
INDICATOR / PROFICIENCY LEVEL	1.1.4.	<p>The student actively engages in conducting an inquiry, formulating and revising his or her scientific explanations and models (physical, conceptual, or mathematical) using logic and evidence, and recognizing that potential alternative explanations and mod</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
STANDARD	KS.2B.	Physics: The student will develop an understanding of the structure of atoms, compounds, chemical reactions, and the interactions of energy and matter.
BENCHMARK	2B.2.	The student will understand the conservation of mass and energy, and

		the First and Second Laws of Thermodynamics.
INDICATOR / PROFICIENCY LEVEL	2B.2.2.	The student understands the first law of thermodynamics states the total internal energy of a substance (the sum of all the kinetic and potential energies of its constituent molecules) will change only if heat is exchanged with the environment or work is <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
STANDARD	KS.3.	Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.
BENCHMARK	3.1.	The student will demonstrate an understanding of the structure and function of the cell.
INDICATOR / PROFICIENCY LEVEL	3.1.4.	The student understands some plant cells contain chloroplasts, which are the sites of photosynthesis. <ul style="list-style-type: none"> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
STANDARD	KS.3.	Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.
BENCHMARK	3.2.	The student will demonstrate an understanding of chromosomes, genes, and the molecular basis of heredity.
INDICATOR / PROFICIENCY LEVEL	3.2.4.	The student understands gametes carry the genetic information to the next generation. <ul style="list-style-type: none"> <li>• Teacher Resource CD: A Closer Look at Microbes</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
STANDARD	KS.3.	Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.
BENCHMARK	3.4.	The student will understand the interdependence of organisms and their interaction with the physical environment.
INDICATOR / PROFICIENCY LEVEL	3.4.2.	The student understands energy is received, transformed and expended in ecosystems. <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.4.4.	The student understands organisms cooperate and compete in complex, interdependent relationships

		<ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Teacher Resource CD: A Closer Look at Animals</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
<b>STANDARD</b>	<b>KS.3.</b>	<b>Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.</b>
<b>BENCHMARK</b>	<b>3.5.</b>	<b>The student will develop an understanding of matter, energy, and organization in living systems.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.5.1.</b>	<p>The student understands living systems require a continuous input of energy to maintain their chemical and physical organization.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.5.2.</b>	<p>The student understands the sun is the primary source of energy for life through the process of photosynthesis.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Teacher Resource CD: A Closer Look at Microbes</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.5.4.</b>	<p>The student understands the structure and function of an organism serves to acquire, transform, transport, release, and eliminate the matter and energy used to sustain the organism.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> </ul>

		<ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Teacher Resource CD: A Closer Look at Animals</li> <li>• Teacher Resource CD: A Closer Look at Microbes</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> <li>• Teacher Resource CD: Classifying Life</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STANDARD</b>	<b>KS.3.</b>	<b>Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.</b>
<b>BENCHMARK</b>	<b>3.6.</b>	<b>The student will understand the behavior of animals.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.6.1.</b>	<p>The student understands animals have behavioral responses to internal changes and to external stimuli.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.6.3.</b>	<p>The student understands behaviors are often adaptive when viewed in terms of survival and reproductive success.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Teacher Resource CD: A Closer Look at Animals</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
<b>STANDARD</b>	<b>KS.3.</b>	<b>Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.</b>
<b>BENCHMARK</b>	<b>3.7.</b>	<b>The student will demonstrate an understanding of the diversity of structure and function in organisms.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.7.1.</b>	<p>The student understands differences in structure and function among organisms and can identify the characteristics of relevant life forms.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental</li> </ul>

		<p>Preference of Pill Bugs</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Teacher Resource CD: A Closer Look at Animals</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.7.3.	<p>The student understands that living things change following a specific pattern of developmental stages called life cycles.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Teacher Resource CD: A Closer Look at Animals</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.7.4.	<p>The student understands that in complex organisms there is a division of labor into specific body systems i.e., respiration, digestion, nervous, endocrine, excretion, circulatory, reproductive, immune, skeletal and muscle.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.7.5.	<p>The student understands taxonomy is the systematic way in which organisms are placed into a hierarchical classification system, according to their physical and genetic characteristics and their evolutionary history.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Teacher Resource CD: A Closer Look at Animals</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> <li>• Teacher Resource CD: Classifying Life</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
STANDARD	KS.4.	<p>Earth and Space Science: The student will develop an understanding of energy in the earth system, geochemical cycles, the formation and organization of the earth system, the dynamics of the earth/moon/sun system, and the organization and development of th</p>
BENCHMARK	4.1.	<p>The student will develop an understanding of the sources of energy that power the subsystems and cycles of the dynamic earth: the geosphere, hydrosphere, atmosphere and biosphere.</p>

INDICATOR / PROFICIENCY LEVEL	4.1.1.	The student understands constructive and destructive processes, including weathering, erosion and deposition, dynamically reshape the surface of the earth. <ul style="list-style-type: none"> <li>Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
STANDARD	KS.5.	Science and Technology: The student will develop understandings about the relationship between science and technology.
BENCHMARK	5.1.	The student will develop an understanding that technology is applied science.
INDICATOR / PROFICIENCY LEVEL	5.1.1.	The student understands technology is the application of scientific knowledge for functional purposes. <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> </ul>
INDICATOR / PROFICIENCY LEVEL	5.1.3.	The student understands science advances new technologies. New technologies open new areas for scientific inquiry. <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> </ul>
STANDARD	KS.6.	Science in Personal and Environmental Perspectives: The student will develop an understanding of personal and community health, population growth, natural resources, environmental quality, natural and human-induced hazards, and science and technology in I
BENCHMARK	6.1.	The student will develop an understanding of the overall functioning of human systems and their interaction with the environment in order to understand specific mechanisms and processes related to health issues.
INDICATOR / PROFICIENCY LEVEL	6.1.1.	The student understands some chemical and physical hazards and accidents can be avoided through safety education. <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> </ul>

		<ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STANDARD</b>	<b>KS.6.</b>	<b>Science in Personal and Environmental Perspectives: The student will develop an understanding of personal and community health, population growth, natural resources, environmental quality, natural and human-induced hazards, and science and technology in I</b>
<b>BENCHMARK</b>	<b>6.2.</b>	<b>The student will demonstrate an understanding of population growth.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>6.2.1.</b>	<p>The student understands the rate of change in populations is determined by the combined effects of birth, death, emigration, and immigration.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>6.2.2.</b>	<p>The student understands a variety of factors influence birth rates and fertility rates.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>6.2.3.</b>	<p>The student understands populations have limits to growth.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
<b>STANDARD</b>	<b>KS.7.</b>	<b>History and Nature of Science: The student will develop understanding of science as a human endeavor, the nature of scientific knowledge, and historical perspectives.</b>
<b>BENCHMARK</b>	<b>7.2.</b>	<b>The student will develop an understanding of the nature of scientific knowledge.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>7.2.1.</b>	<p>The student understands scientific knowledge describes and explains the physical world in terms of matter, energy, and forces. Scientific knowledge is provisional and is subject to change as new evidence becomes available.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Classifying Life</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>7.2.2.</b>	<p>The student understands scientific knowledge begins with empirical observations, which are the data (also called facts or evidence) upon which further scientific knowledge is built.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> </ul>

		<ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STANDARD</b>	<b>KS.7.</b>	<b>History and Nature of Science: The student will develop understanding of science as a human endeavor, the nature of scientific knowledge, and historical perspectives.</b>
<b>BENCHMARK</b>	<b>7.3.</b>	<b>The student will understand science from historical perspectives.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>7.3.1.</b>	<p>The student demonstrates an understanding of the history of science.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Classifying Life</li> </ul>

**Kansas Curricular Standards  
Science  
Grade 10**

<b>STANDARD</b>	<b>KS.1.</b>	<b>Science as Inquiry: The student will develop the abilities necessary to do scientific inquiry and develop an understanding of scientific inquiry.</b>
<b>BENCHMARK</b>	<b>1.1.</b>	<b>The student will demonstrate the abilities necessary to do scientific inquiry.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>1.1.1.</b>	<p>The student actively engages in asking and evaluating research questions.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> </ul>

		<ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
INDICATOR / PROFICIENCY LEVEL	1.1.2.	<p>The student actively engages in investigations, including developing questions, gathering and analyzing data, and designing and conducting research.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
INDICATOR / PROFICIENCY LEVEL	1.1.3.	<p>The student actively engages in using technological tools and mathematics in their own scientific investigations.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> </ul>

		<ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<p><b>INDICATOR / PROFICIENCY LEVEL</b></p>	<p><b>1.1.4.</b></p>	<p>The student actively engages in conducting an inquiry, formulating and revising his or her scientific explanations and models (physical, conceptual, or mathematical) using logic and evidence, and recognizing that potential alternative explanations and mod</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> </ul>

		<ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STANDARD</b>	<b>KS.2B.</b>	<b>Physics: The student will develop an understanding of the structure of atoms, compounds, chemical reactions, and the interactions of energy and matter.</b>
<b>BENCHMARK</b>	<b>2B.2.</b>	<b>The student will understand the conservation of mass and energy, and the First and Second Laws of Thermodynamics.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>2B.2.2.</b>	<p>The student understands the first law of thermodynamics states the total internal energy of a substance (the sum of all the kinetic and potential energies of its constituent molecules) will change only if heat is exchanged with the environment or work is</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STANDARD</b>	<b>KS.3.</b>	<b>Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.</b>
<b>BENCHMARK</b>	<b>3.1.</b>	<b>The student will demonstrate an understanding of the structure and function of the cell.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.1.4.</b>	<p>The student understands some plant cells contain chloroplasts, which are the sites of photosynthesis.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
<b>STANDARD</b>	<b>KS.3.</b>	<b>Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.</b>
<b>BENCHMARK</b>	<b>3.2.</b>	<b>The student will demonstrate an understanding of chromosomes, genes, and the molecular basis of heredity.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.2.4.</b>	<p>The student understands gametes carry the genetic information to the next generation.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Microbes</li> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
<b>STANDARD</b>	<b>KS.3.</b>	<b>Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.</b>
<b>BENCHMARK</b>	<b>3.4.</b>	<b>The student will understand the interdependence of organisms and their interaction with the physical environment.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.4.2.</b>	<p>The student understands energy is received, transformed and expended in ecosystems.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting</li> </ul>

		<p>and Measurement</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.4.4.	<p>The student understands organisms cooperate and compete in complex, interdependent relationships</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>Teacher Resource CD: A Closer Look at Animals</li> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
STANDARD	KS.3.	<p>Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.</p>
BENCHMARK	3.5.	<p>The student will develop an understanding of matter, energy, and organization in living systems.</p>
INDICATOR / PROFICIENCY LEVEL	3.5.1.	<p>The student understands living systems require a continuous input of energy to maintain their chemical and physical organization.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.5.2.	<p>The student understands the sun is the primary source of energy for life through the process of photosynthesis.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>Teacher Resource CD: A Closer Look at Microbes</li> <li>Teacher Resource CD: A Closer Look at Plants</li> <li>Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.5.4.	<p>The student understands the structure and function of an organism serves to acquire, transform, transport, release, and eliminate the matter and energy used to sustain the organism.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>

		<ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>Teacher Resource CD: A Closer Look at Animals</li> <li>Teacher Resource CD: A Closer Look at Microbes</li> <li>Teacher Resource CD: A Closer Look at Plants</li> <li>Teacher Resource CD: Classifying Life</li> <li>Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STANDARD</b>	<b>KS.3.</b>	<b>Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.</b>
<b>BENCHMARK</b>	<b>3.6.</b>	<b>The student will understand the behavior of animals.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.6.1.</b>	<p>The student understands animals have behavioral responses to internal changes and to external stimuli.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.6.3.</b>	<p>The student understands behaviors are often adaptive when viewed in terms of survival and reproductive success.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>Teacher Resource CD: A Closer Look at Animals</li> <li>Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
<b>STANDARD</b>	<b>KS.3.</b>	<b>Life Science: The student will develop an understanding of the cell, molecular basis of heredity, biological evolution, interdependence of organisms, matter, energy, and organization in living systems, and the behavior of organisms.</b>
<b>BENCHMARK</b>	<b>3.7.</b>	<b>The student will demonstrate an understanding of the diversity of structure and function in organisms.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>3.7.1.</b>	<p>The student understands differences in structure and function among organisms and can identify the characteristics of relevant life forms.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life</li> </ul>

		<p>Forms</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Teacher Resource CD: A Closer Look at Animals</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.7.3.	<p>The student understands that living things change following a specific pattern of developmental stages called life cycles.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Teacher Resource CD: A Closer Look at Animals</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.7.4.	<p>The student understands that in complex organisms there is a division of labor into specific body systems i.e., respiration, digestion, nervous, endocrine, excretion, circulatory, reproductive, immune, skeletal and muscle.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
INDICATOR / PROFICIENCY LEVEL	3.7.5.	<p>The student understands taxonomy is the systematic way in which organisms are placed into a hierarchical classification system, according to their physical and genetic characteristics and their evolutionary history.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Teacher Resource CD: A Closer Look at Animals</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> <li>• Teacher Resource CD: Classifying Life</li> </ul>

		<ul style="list-style-type: none"> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
STANDARD	KS.4.	Earth and Space Science: The student will develop an understanding of energy in the earth system, geochemical cycles, the formation and organization of the earth system, the dynamics of the earth/moon/sun system, and the organization and development of th
BENCHMARK	4.1.	The student will develop an understanding of the sources of energy that power the subsystems and cycles of the dynamic earth: the geosphere, hydrosphere, atmosphere and biosphere.
INDICATOR / PROFICIENCY LEVEL	4.1.1.	<p>The student understands constructive and destructive processes, including weathering, erosion and deposition, dynamically reshape the surface of the earth.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
STANDARD	KS.5.	Science and Technology: The student will develop understandings about the relationship between science and technology.
BENCHMARK	5.1.	The student will develop an understanding that technology is applied science.
INDICATOR / PROFICIENCY LEVEL	5.1.1.	<p>The student understands technology is the application of scientific knowledge for functional purposes.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> </ul>
INDICATOR / PROFICIENCY LEVEL	5.1.3.	<p>The student understands science advances new technologies. New technologies open new areas for scientific inquiry.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> </ul>
STANDARD	KS.6.	Science in Personal and Environmental Perspectives: The student will develop an understanding of personal and community health, population growth, natural resources, environmental quality, natural and human-induced hazards, and science and technology in I
BENCHMARK	6.1.	The student will develop an understanding of the overall functioning of human systems and their interaction with the environment in order to understand specific mechanisms and processes related to health issues.
INDICATOR / PROFICIENCY LEVEL	6.1.1.	<p>The student understands some chemical and physical hazards and accidents can be avoided through safety education.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> </ul>

		<ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STANDARD</b>	<b>KS.6.</b>	<b>Science in Personal and Environmental Perspectives: The student will develop an understanding of personal and community health, population growth, natural resources, environmental quality, natural and human-induced hazards, and science and technology in I</b>
<b>BENCHMARK</b>	<b>6.2.</b>	<b>The student will demonstrate an understanding of population growth.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>6.2.1.</b>	<p>The student understands the rate of change in populations is determined by the combined effects of birth, death, emigration, and immigration.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>6.2.2.</b>	<p>The student understands a variety of factors influence birth rates and fertility rates.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>6.2.3.</b>	<p>The student understands populations have limits to growth.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
<b>STANDARD</b>	<b>KS.7.</b>	<b>History and Nature of Science: The student will develop understanding of science as a human endeavor, the nature of scientific knowledge, and historical perspectives.</b>
<b>BENCHMARK</b>	<b>7.2.</b>	<b>The student will develop an understanding of the nature of scientific knowledge.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>7.2.1.</b>	<p>The student understands scientific knowledge describes and explains the physical world in terms of matter, energy, and forces. Scientific knowledge is provisional and is subject to change as new evidence becomes available.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Classifying Life</li> </ul>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>7.2.2.</b>	<p>The student understands scientific knowledge begins with empirical observations, which are the data (also called facts or evidence) upon which further scientific knowledge is built.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 1: Classifying Life Forms</li> </ul>

		<ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? - Creating Food Webs</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 1: Plant Life Cycle</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 2: Flowers and Pollination</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 2 Lab 3 Activity 4: Seed Harvesting and Measurement</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 1: Observing the Behavior of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 2: Environmental Preference of Pill Bugs</li> <li>• Kingdoms of Life: Unit 2 Lab 4 Activity 3: Experimental Design</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 2: Forest (Wooded Area) Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 3: Grassland Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STANDARD</b>	<b>KS.7.</b>	<b>History and Nature of Science: The student will develop understanding of science as a human endeavor, the nature of scientific knowledge, and historical perspectives.</b>
<b>BENCHMARK</b>	<b>7.3.</b>	<b>The student will understand science from historical perspectives.</b>
<b>INDICATOR / PROFICIENCY LEVEL</b>	<b>7.3.1.</b>	<p>The student demonstrates an understanding of the history of science.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Classifying Life</li> </ul>