

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

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**Michigan Curriculum Standards**  
**Science**  
**Grade 7**

STRAND / STANDARD CATEGORY	MI.S.	Science Processes
STANDARD	S.IP.	Inquiry Process: Develop an understanding that scientific inquiry and reasoning involves observing, questioning, investigating, recording, and developing solutions to problems.
GRADE LEVEL EXPECTATION	S.IP.M.1.	Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.
EXPECTATION	S.IP.07.11.	<p>Generate scientific questions based on observations, investigations, and 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 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>
EXPECTATION	S.IP.07.12.	Design and conduct scientific investigations.

		<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>EXPECTATION</b></p>	<p><b>S.IP.07.13.</b></p>	<p>Use tools and equipment (spring scales, stop watches, meter sticks and tapes, models, hand lens, thermometer, models, sieves, microscopes, hot plates, pH meters) appropriate to 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</li> </ul>

		<p>Behavior of Pill Bugs</p> <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>
EXPECTATION	S.IP.07.15.	<p>Construct charts and graphs from data and observations.</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 3 Lab 5 Activity 1: Site Survey</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
EXPECTATION	S.IP.07.16.	<p>Identify patterns in 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</li> </ul>

		<p>Survey</p> <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>• Teacher Resource CD: Classifying Life</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<b>STRAND / STANDARD CATEGORY</b>	<b>MI.S.</b>	<b>Science Processes</b>
<b>STANDARD</b>	<b>S.IA.</b>	Inquiry Analysis and Communication: Develop an understanding that scientific inquiry and investigations require analysis and communication of findings, using appropriate technology.
<b>GRADE LEVEL EXPECTATION</b>	<b>S.IA.M.1.</b>	Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.
<b>EXPECTATION</b>	<b>S.IA.07.11.</b>	<p>Analyze information from data tables and graphs to answer scientific questions.</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 3 Lab 5 Activity 1: Site Survey</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
<b>EXPECTATION</b>	<b>S.IA.07.12.</b>	<p>Evaluate data, claims, and personal knowledge through collaborative science discourse.</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>
EXPECTATION	S.IA.17.13.	<p>Communicate and defend findings of observations and 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> <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>
EXPECTATION	S.IA.07.14.	<p>Draw conclusions from sets of data from multiple trials of a scientific investigation to draw 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</li> </ul>

		<p>Pollination</p> <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>
<p>EXPECTATION</p>	<p>S.IA.07.15.</p>	<p>Use multiple sources of information to evaluate strengths and weaknesses of claims, arguments, or 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> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife</li> </ul>

		<p>Survey</p> <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>STRAND / STANDARD CATEGORY</b>	<b>MI.S.</b>	<b>Science Processes</b>
<b>STANDARD</b>	<b>S.RS.</b>	Reflection and Social Implications: Develop an understanding that claims and evidence for their scientific merit should be analyzed. Understand how scientists decide what constitutes scientific knowledge. Develop an understanding of the importance of reflection on scientific knowledge and its application to new situations to better understand the role of science in society and technology.
<b>GRADE LEVEL EXPECTATION</b>	<b>S.RS.M.1.</b>	Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision-making and the application of science throughout history and within society.
<b>EXPECTATION</b>	<b>S.RS.07.11.</b>	<p>Evaluate the strengths and weaknesses of claims, arguments, and 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> <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>EXPECTATION</b>	<b>S.RS.07.15.</b>	Demonstrate scientific concepts through various illustrations,

		<p>performances, models, exhibits, and activities.</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>
EXPECTATION	S.RS.07.19.	<p>Describe how science and technology have advanced because of the contributions of many people throughout history and across cultures.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Classifying Life</li> </ul>
STRAND / STANDARD CATEGORY	MI.P.	Physical Science
STANDARD	P.EN.	<p>Energy: Develop an understanding that there are many forms of energy (such as heat, light, sound, and electrical) and that energy is transferable by convection, conduction, or radiation. Understand energy can be in motion, called kinetic; or it can be stored, called potential. Develop an understanding that as temperature increases, more energy is added to a system. Understand nuclear reactions in the sun produce light and heat for the Earth.</p>
GRADE LEVEL EXPECTATION	P.EN.M.4.	<p>Energy Transfer- Energy is transferred from a source to a receiver by radiation, conduction, and convection. When energy is transferred from a source to a receiver, the quantity of energy before the transfer is equal to the quantity of energy after the transfer.</p>
EXPECTATION	P.EN.07.43.	<p>Explain how light energy is transferred to chemical energy through</p>

		<p>the process of photosynthesis.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
<b>STRAND / STANDARD CATEGORY</b>	<b>MI.L.</b>	<b>Life Science</b>
<b>STANDARD</b>	<b>L.OL.</b>	<p>Organization of Living Things: Develop an understanding that plants and animals (including humans) have basic requirements for maintaining life which include the need for air, water and a source of energy. Understand that all life forms can be classified as producers, consumers, or decomposers as they are all part of a global food chain where food/energy is supplied by plants which need light to produce food/energy. Develop an understanding that plants and animals can be classified by observable traits and physical characteristics. Understand that all living organisms are composed of cells and they exhibit cell growth and division. Understand that all plants and animals have a definite life cycle, body parts, and systems to perform specific life functions.</p>
<b>GRADE LEVEL EXPECTATION</b>	<b>L.OL.M.2.</b>	<p>Cell Functions- All organisms are composed of cells, from one cell to many cells. In multicellular organisms, specialized cells perform specialized functions. Organs and organ systems are composed of cells, and function to serve the needs of cells for food, air, and waste removal. The way in which cells function is similar in all living organisms.</p>
<b>EXPECTATION</b>	<b>L.OL.07.21.</b>	<p>Recognize that all organisms are composed of cells (single cell organisms, multicellular organisms).</p> <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>
<b>STRAND / STANDARD CATEGORY</b>	<b>MI.L.</b>	<b>Life Science</b>
<b>STANDARD</b>	<b>L.OL.</b>	<p>Organization of Living Things: Develop an understanding that plants and animals (including humans) have basic requirements for maintaining life which include the need for air, water and a source of energy. Understand that all life forms can be classified as producers, consumers, or decomposers as they are all part of a global food chain where food/energy is supplied by plants which need light to produce food/energy. Develop an understanding that plants and animals can be classified by observable traits and physical characteristics. Understand that all living organisms are composed of cells and they exhibit cell growth and division. Understand that all plants and animals have a definite life cycle, body parts, and systems to perform specific life functions.</p>
<b>GRADE LEVEL EXPECTATION</b>	<b>L.OL.M.3.</b>	<p>Growth and Development- Following fertilization, cell division produces a small cluster of cells that then differentiate by appearance and function to form the basic tissue of an embryo.</p>
<b>EXPECTATION</b>	<b>L.OL.07.31.</b>	<p>Describe growth and development in terms of increase of cell number and/or cell size.</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 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> </ul>

		<ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
<b>STRAND / STANDARD CATEGORY</b>	<b>MI.L.</b>	<b>Life Science</b>
<b>STANDARD</b>	<b>L.OL.</b>	Organization of Living Things: Develop an understanding that plants and animals (including humans) have basic requirements for maintaining life which include the need for air, water and a source of energy. Understand that all life forms can be classified as producers, consumers, or decomposers as they are all part of a global food chain where food/energy is supplied by plants which need light to produce food/energy. Develop an understanding that plants and animals can be classified by observable traits and physical characteristics. Understand that all living organisms are composed of cells and they exhibit cell growth and division. Understand that all plants and animals have a definite life cycle, body parts, and systems to perform specific life functions.
<b>GRADE LEVEL EXPECTATION</b>	<b>L.OL.M.6.</b>	Photosynthesis- Plants are producers; they use the energy from light to make sugar molecules from the atoms of carbon dioxide and water. Plants use these sugars along with minerals from the soil to form fats, proteins, and carbohydrates. These products can be used immediately, incorporated into the cells of a plant as the plant grows, or stored for later use.
<b>EXPECTATION</b>	<b>L.OL.07.61.</b>	Recognize the need for light to provide energy for the production of carbohydrates, proteins and fats. <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
<b>EXPECTATION</b>	<b>L.OL.07.62.</b>	Explain that carbon dioxide and water are used to produce carbohydrates, proteins, and fats. <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
<b>EXPECTATION</b>	<b>L.OL.07.63.</b>	Describe evidence that plants make, use and store food. <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 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>Teacher Resource CD: A Closer Look at Microbes</li> <li>Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
<b>STRAND / STANDARD CATEGORY</b>	<b>MI.L.</b>	<b>Life Science</b>
<b>STANDARD</b>	<b>L.HE.</b>	Heredity: Develop an understanding that all life forms must reproduce to survive. Understand that characteristics of mature plants and animals may be inherited or acquired and that only inherited traits are passed on to their young. Understand that inherited traits can be influenced by changes in the environment and by genetics.
<b>GRADE LEVEL EXPECTATION</b>	<b>L.HE.M.2.</b>	Reproduction- Reproduction is a characteristic of all living systems; because no individual organism lives forever, reproduction is essential to the continuation of every species. Some organisms reproduce asexually. Other

		organisms reproduce sexually.
EXPECTATION	L.HE.07.21.	<p>Compare how characteristics of living things are passed on through generations, both asexually and sexually.</p> <ul style="list-style-type: none"> <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 Microbes</li> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
EXPECTATION	L.HE.07.22.	<p>Compare and contrast the advantages and disadvantages of sexual vs. asexual reproduction.</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>
STRAND / STANDARD CATEGORY	MI.E.	Earth Science
STANDARD	E.ES.	Earth Systems: Develop an understanding of the warming of the Earth by the sun as the major source of energy for phenomenon on Earth and how the sun's warming relates to weather, climate, seasons, and the water cycle. Understand how human interaction and use of natural resources affects the environment.
GRADE LEVEL EXPECTATION	E.ES.M.8.	Water Cycle- Water circulates through the four spheres of the Earth in what is known as the "water cycle."
EXPECTATION	E.ES.07.82.	<p>Analyze the flow of water between the components of a watershed, including surface features (lakes, streams, rivers, wetlands) and groundwater.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> </ul>
STRAND / STANDARD CATEGORY	MI.E.	Earth Science
STANDARD	E.FE.	Fluid Earth: Develop an understanding that Earth is a planet nearly covered with water and that water on Earth can be found in three states, solid, liquid, and gas. Understand how water on Earth moves in predictable patterns. Understand Earth's atmosphere as a mixture of gases and water vapor.
GRADE LEVEL EXPECTATION	E.FE.M.1.	Atmosphere- The atmosphere is a mixture of nitrogen, oxygen and trace gases that include water vapor. The atmosphere has different physical and chemical composition at different elevations.
EXPECTATION	E.FE.07.11.	<p>Describe the atmosphere as a mixture of gases.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> </ul>
EXPECTATION	E.FE.07.12.	Compare and contrast the composition of the atmosphere at different elevations.

		<ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> </ul>
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**Michigan Curriculum Standards**

**Science**

**Grade 8**

STRAND / STANDARD CATEGORY	MI.S.	Science Processes
STANDARD	S.IP.	Inquiry Process: Develop an understanding that scientific inquiry and reasoning involves observing, questioning, investigating, recording, and developing solutions to problems.
GRADE LEVEL EXPECTATION	S.IP.M.1.	Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.
EXPECTATION	S.IP.07.11.	<p>Generate scientific questions based on observations, investigations, and 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 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>
EXPECTATION	S.IP.07.12.	<p>Design and conduct 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</li> </ul>

		<p>Pond Microlife</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 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>EXPECTATION</p>	<p>S.IP.07.13.</p>	<p>Use tools and equipment (spring scales, stop watches, meter sticks and tapes, models, hand lens, thermometer, models, sieves, microscopes, hot plates, pH meters) appropriate to 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</li> </ul>

		<p>(Wooded Area) Survey</p> <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>
EXPECTATION	S.IP.07.15.	<p>Construct charts and graphs from data and observations.</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 3 Lab 5 Activity 1: Site Survey</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
EXPECTATION	S.IP.07.16.	<p>Identify patterns in 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> <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: Classifying Life</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>

STRAND / STANDARD CATEGORY	MI.S.	Science Processes
STANDARD	S.IA.	Inquiry Analysis and Communication: Develop an understanding that scientific inquiry and investigations require analysis and communication of findings, using appropriate technology.
GRADE LEVEL EXPECTATION	S.IA.M.1.	Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.
EXPECTATION	S.IA.07.11.	Analyze information from data tables and graphs to answer scientific questions. <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 3 Lab 5 Activity 1: Site Survey</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
EXPECTATION	S.IA.07.12.	Evaluate data, claims, and personal knowledge through collaborative science discourse. <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>
EXPECTATION	S.IA.17.13.	Communicate and defend findings of observations and investigations.

		<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>EXPECTATION</b></p>	<p><b>S.IA.07.14.</b></p>	<p>Draw conclusions from sets of data from multiple trials of a scientific investigation to draw 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</li> </ul>

		<ul style="list-style-type: none"> <li>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>
EXPECTATION	S.IA.07.15.	<p>Use multiple sources of information to evaluate strengths and weaknesses of claims, arguments, or 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> <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>
STRAND / STANDARD CATEGORY	MI.S.	Science Processes
STANDARD	S.RS.	Reflection and Social Implications: Develop an understanding that

		claims and evidence for their scientific merit should be analyzed. Understand how scientists decide what constitutes scientific knowledge. Develop an understanding of the importance of reflection on scientific knowledge and its application to new situations to better understand the role of science in society and technology.
GRADE LEVEL EXPECTATION	S.RS.M.1.	Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision-making and the application of science throughout history and within society.
EXPECTATION	S.RS.07.11.	<p>Evaluate the strengths and weaknesses of claims, arguments, and 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> <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>
EXPECTATION	S.RS.07.15.	<p>Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</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</li> </ul>

		<p>Pond Microlife</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 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>
EXPECTATION	S.RS.07.19.	<p>Describe how science and technology have advanced because of the contributions of many people throughout history and across cultures.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Classifying Life</li> </ul>
STRAND / STANDARD CATEGORY	MI.P.	Physical Science
STANDARD	P.EN.	<p>Energy: Develop an understanding that there are many forms of energy (such as heat, light, sound, and electrical) and that energy is transferable by convection, conduction, or radiation. Understand energy can be in motion, called kinetic; or it can be stored, called potential. Develop an understanding that as temperature increases, more energy is added to a system. Understand nuclear reactions in the sun produce light and heat for the Earth.</p>
GRADE LEVEL EXPECTATION	P.EN.M.4.	<p>Energy Transfer- Energy is transferred from a source to a receiver by radiation, conduction, and convection. When energy is transferred from a source to a receiver, the quantity of energy before the transfer is equal to the quantity of energy after the transfer.</p>
EXPECTATION	P.EN.07.43.	<p>Explain how light energy is transferred to chemical energy through the process of photosynthesis.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
STRAND / STANDARD CATEGORY	MI.L.	Life Science
STANDARD	L.OL.	<p>Organization of Living Things: Develop an understanding that plants and animals (including humans) have basic requirements for maintaining life which include the need for air, water and a source</p>

		of energy. Understand that all life forms can be classified as producers, consumers, or decomposers as they are all part of a global food chain where food/energy is supplied by plants which need light to produce food/energy. Develop an understanding that plants and animals can be classified by observable traits and physical characteristics. Understand that all living organisms are composed of cells and they exhibit cell growth and division. Understand that all plants and animals have a definite life cycle, body parts, and systems to perform specific life functions.
GRADE LEVEL EXPECTATION	L.OL.M.2.	Cell Functions- All organisms are composed of cells, from one cell to many cells. In multicellular organisms, specialized cells perform specialized functions. Organs and organ systems are composed of cells, and function to serve the needs of cells for food, air, and waste removal. The way in which cells function is similar in all living organisms.
EXPECTATION	L.OL.07.21.	Recognize that all organisms are composed of cells (single cell organisms, multicellular organisms). <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>
STRAND / STANDARD CATEGORY	MI.L.	Life Science
STANDARD	L.OL.	Organization of Living Things: Develop an understanding that plants and animals (including humans) have basic requirements for maintaining life which include the need for air, water and a source of energy. Understand that all life forms can be classified as producers, consumers, or decomposers as they are all part of a global food chain where food/energy is supplied by plants which need light to produce food/energy. Develop an understanding that plants and animals can be classified by observable traits and physical characteristics. Understand that all living organisms are composed of cells and they exhibit cell growth and division. Understand that all plants and animals have a definite life cycle, body parts, and systems to perform specific life functions.
GRADE LEVEL EXPECTATION	L.OL.M.3.	Growth and Development- Following fertilization, cell division produces a small cluster of cells that then differentiate by appearance and function to form the basic tissue of an embryo.
EXPECTATION	L.OL.07.31.	Describe growth and development in terms of increase of cell number and/or cell size. <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 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>
STRAND / STANDARD CATEGORY	MI.L.	Life Science
STANDARD	L.OL.	Organization of Living Things: Develop an understanding that plants and animals (including humans) have basic requirements for maintaining life which include the need for air, water and a source of energy. Understand that all life forms can be classified as producers, consumers, or decomposers as they are all part of a

		global food chain where food/energy is supplied by plants which need light to produce food/energy. Develop an understanding that plants and animals can be classified by observable traits and physical characteristics. Understand that all living organisms are composed of cells and they exhibit cell growth and division. Understand that all plants and animals have a definite life cycle, body parts, and systems to perform specific life functions.
GRADE LEVEL EXPECTATION	L.OL.M.6.	Photosynthesis- Plants are producers; they use the energy from light to make sugar molecules from the atoms of carbon dioxide and water. Plants use these sugars along with minerals from the soil to form fats, proteins, and carbohydrates. These products can be used immediately, incorporated into the cells of a plant as the plant grows, or stored for later use.
EXPECTATION	L.OL.07.61.	Recognize the need for light to provide energy for the production of carbohydrates, proteins and fats. <ul style="list-style-type: none"> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
EXPECTATION	L.OL.07.62.	Explain that carbon dioxide and water are used to produce carbohydrates, proteins, and fats. <ul style="list-style-type: none"> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
EXPECTATION	L.OL.07.63.	Describe evidence that plants make, use and store food. <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 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Teacher Resource CD: A Closer Look at Microbes</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
STRAND / STANDARD CATEGORY	MI.L.	Life Science
STANDARD	L.HE.	Heredity: Develop an understanding that all life forms must reproduce to survive. Understand that characteristics of mature plants and animals may be inherited or acquired and that only inherited traits are passed on to their young. Understand that inherited traits can be influenced by changes in the environment and by genetics.
GRADE LEVEL EXPECTATION	L.HE.M.2.	Reproduction- Reproduction is a characteristic of all living systems; because no individual organism lives forever, reproduction is essential to the continuation of every species. Some organisms reproduce asexually. Other organisms reproduce sexually.
EXPECTATION	L.HE.07.21.	Compare how characteristics of living things are passed on through generations, both asexually and sexually. <ul style="list-style-type: none"> <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>• 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> </ul>
EXPECTATION	L.HE.07.22.	<p>Compare and contrast the advantages and disadvantages of sexual vs. asexual reproduction.</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>
STRAND / STANDARD CATEGORY	MI.E.	Earth Science
STANDARD	E.ES.	Earth Systems: Develop an understanding of the warming of the Earth by the sun as the major source of energy for phenomenon on Earth and how the sun's warming relates to weather, climate, seasons, and the water cycle. Understand how human interaction and use of natural resources affects the environment.
GRADE LEVEL EXPECTATION	E.ES.M.8.	Water Cycle- Water circulates through the four spheres of the Earth in what is known as the "water cycle."
EXPECTATION	E.ES.07.82.	<p>Analyze the flow of water between the components of a watershed, including surface features (lakes, streams, rivers, wetlands) and groundwater.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> </ul>
STRAND / STANDARD CATEGORY	MI.E.	Earth Science
STANDARD	E.FE.	Fluid Earth: Develop an understanding that Earth is a planet nearly covered with water and that water on Earth can be found in three states, solid, liquid, and gas. Understand how water on Earth moves in predictable patterns. Understand Earth's atmosphere as a mixture of gases and water vapor.
GRADE LEVEL EXPECTATION	E.FE.M.1.	Atmosphere- The atmosphere is a mixture of nitrogen, oxygen and trace gases that include water vapor. The atmosphere has different physical and chemical composition at different elevations.
EXPECTATION	E.FE.07.11.	<p>Describe the atmosphere as a mixture of gases.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> </ul>
EXPECTATION	E.FE.07.12.	<p>Compare and contrast the composition of the atmosphere at different elevations.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> </ul>

Michigan Curriculum Standards  
Science  
Grade 9

STRAND / STANDARD CATEGORY	MI.B1.	Biology: Inquiry, Reflection, and Social Implications: Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of
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		this information by methods including, but not limited to, experimentation.
STANDARD	B1.1.	Scientific Inquiry
GRADE LEVEL EXPECTATION	B1.1A.	<p>Generate new questions that can be investigated in the laboratory or field.</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>
GRADE LEVEL EXPECTATION	B1.1B.	<p>Evaluate the uncertainties or validity of scientific conclusions using an understanding of sources of measurement error, the challenges of controlling variables, accuracy of data analysis, logic of argument, logic of experimental design, and/or the dependence on underlying assumptions.</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> </ul>

		<ul style="list-style-type: none"> <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>GRADE LEVEL EXPECTATION</b></p>	<p><b>B1.1C.</b></p>	<p>Conduct scientific investigations using appropriate tools and techniques (e.g., selecting an instrument that measures the desired quantity-length, volume, weight, time interval, temperature-with the appropriate level of precision).</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>GRADE LEVEL EXPECTATION</b></p>	<p><b>B1.1D.</b></p>	<p>Identify patterns in data and relate them to theoretical models.</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>• Teacher Resource CD: Classifying Life</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<p><b>GRADE LEVEL EXPECTATION</b></p>	<p><b>B1.1E.</b></p>	<p>Describe a reason for a given conclusion using evidence from an 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 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 6: Soil Survey</li> </ul>

		<ul style="list-style-type: none"> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
GRADE LEVEL EXPECTATION	B1.1h.	<p>Design and conduct a systematic scientific investigation that tests a hypothesis. Draw conclusions from data presented in charts or tables.</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>
STRAND / STANDARD CATEGORY	MI.B1.	<p>Biology: Inquiry, Reflection, and Social Implications: Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentation.</p>
STANDARD	B1.2.	Scientific Reflection and Social Implications
GRADE LEVEL EXPECTATION	B1.2A.	<p>Critique whether or not specific questions 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> </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 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>GRADE LEVEL EXPECTATION</b></p>	<p><b>B1.2E.</b></p>	<p>Evaluate the future career and occupational prospects of science fields.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Classifying Life</li> </ul>
<p><b>GRADE LEVEL EXPECTATION</b></p>	<p><b>B1.2f.</b></p>	<p>Critique solutions to problems, given criteria and scientific constraints.</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>
GRADE LEVEL EXPECTATION	B1.2h.	<p>Describe the distinctions between scientific theories, laws, hypotheses, and observations.</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>Virtual Laboratory: Classifying Living Organisms</li> </ul>
GRADE LEVEL EXPECTATION	B1.2i.	<p>Explain the progression of ideas and explanations that leads to science theories that are part of the current scientific consensus or core knowledge.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Classifying Life</li> </ul>
STRAND / STANDARD CATEGORY	MI.B2.	Biology: Organization and Development of Living Systems: Students describe the general structure and function of cells. They can explain that all living systems are composed of cells and that organisms may be unicellular or multicellular.
STANDARD	L2.p1.	Cells (prerequisite)
GRADE LEVEL EXPECTATION	L2.p1A.	<p>Distinguish between living and nonliving systems. (prerequisite)</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> </ul>
GRADE LEVEL EXPECTATION	L2.p1D.	<p>Explain how the systems in a multicellular organism work together to support the organism. (prerequisite)</p> <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> </ul>

		<ul style="list-style-type: none"> <li>• Teacher Resource CD: A Closer Look at Plants</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
GRADE LEVEL EXPECTATION	L2.p1E.	<p>Compare and contrast how different organisms accomplish similar functions (e.g., obtain oxygen for respiration, and excrete waste). (prerequisite)</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> <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>
STRAND / STANDARD CATEGORY	MI.B2.	Biology: Organization and Development of Living Systems: Students describe the general structure and function of cells. They can explain that all living systems are composed of cells and that organisms may be unicellular or multicellular.
STANDARD	L2.p3.	Plants as Producers (prerequisite)
GRADE LEVEL EXPECTATION	L2.p3B.	<p>Explain the origins of plant mass. (prerequisite)</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 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 Plants</li> </ul>
GRADE LEVEL EXPECTATION	L2.p3C.	<p>Predict what would happen to plants growing in low carbon dioxide atmospheres. (prerequisite)</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 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 Plants</li> </ul>

GRADE LEVEL EXPECTATION	L2.p3D.	Explain how the roots of specific plants grow. (prerequisite) <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
STRAND / STANDARD CATEGORY	MI.B2.	Biology: Organization and Development of Living Systems: Students describe the general structure and function of cells. They can explain that all living systems are composed of cells and that organisms may be unicellular or multicellular.
STANDARD	L2.p4.	Animals as Consumers (prerequisite)
GRADE LEVEL EXPECTATION	L2.p4A.	Classify different organisms based on how they obtain energy for growth and development. (prerequisite) <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 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>Teacher Resource CD: A Closer Look at Microbes</li> <li>Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
STRAND / STANDARD CATEGORY	MI.B2.	Biology: Organization and Development of Living Systems: Students describe the general structure and function of cells. They can explain that all living systems are composed of cells and that organisms may be unicellular or multicellular.
STANDARD	B2.1.	Transformation of Matter and Energy in Cells
GRADE LEVEL EXPECTATION	B2.1A.	Explain how cells transform energy (ultimately obtained from the sun) from one form to another through the processes of photosynthesis and respiration. Identify the reactants and products in the general reaction of photosynthesis. <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	B2.1B.	Compare and contrast the transformation of matter and energy during photosynthesis and respiration. <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
STRAND / STANDARD CATEGORY	MI.B2.	Biology: Organization and Development of Living Systems: Students describe the general structure and function of cells. They can explain that all living systems are composed of cells and that organisms may be unicellular or multicellular.
STANDARD	B2.4.	Cell Specialization
GRADE LEVEL EXPECTATION	B2.4A.	Explain that living things can be classified based on structural, embryological, and molecular (relatedness of DNA sequence) evidence. <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> </ul>

		<ul style="list-style-type: none"> <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>• 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>
<p><b>GRADE LEVEL EXPECTATION</b></p>	<p><b>B2.4B.</b></p>	<p>Describe how various organisms have developed different specializations to accomplish a particular function and yet the end result is the same (e.g., excreting nitrogenous wastes in animals, obtaining oxygen for respiration).</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> <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> </ul>

		<ul style="list-style-type: none"> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
<p>GRADE LEVEL EXPECTATION</p>	<p>B2.4C.</p>	<p>Explain how different organisms accomplish the same result using different structural specializations (gills vs. lungs vs. membranes).</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> <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>
<p>GRADE LEVEL EXPECTATION</p>	<p>B2.4d.</p>	<p>Analyze the relationships among organisms based on their shared physical, biochemical, genetic, and cellular characteristics and functional processes.</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</li> </ul>

		<p>Area) Survey</p> <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>
GRADE LEVEL EXPECTATION	B2.4g.	<p>Explain that some structures in the modern eukaryotic cell developed from early prokaryotes, such as mitochondria, and in plants, chloroplasts.</p> <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>Teacher Resource CD: Classifying Life</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
GRADE LEVEL EXPECTATION	B2.4h.	<p>Describe the structures of viruses and bacteria.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>Teacher Resource CD: A Closer Look at Microbes</li> </ul>
STRAND / STANDARD CATEGORY	MI.B2.	<p>Biology: Organization and Development of Living Systems: Students describe the general structure and function of cells. They can explain that all living systems are composed of cells and that organisms may be unicellular or multicellular.</p>
STANDARD	B2.5.	<p>Living Organism Composition</p>
GRADE LEVEL EXPECTATION	B2.5c.	<p>Describe how energy is transferred and transformed from the Sun to energy-rich molecules during photosynthesis.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
STRAND / STANDARD CATEGORY	MI.B2.	<p>Biology: Organization and Development of Living Systems: Students describe the general structure and function of cells. They can explain that all living systems are composed of cells and that organisms may be unicellular or multicellular.</p>
STANDARD	B2.5x.	<p>Energy Transfer</p>
GRADE LEVEL EXPECTATION	B2.5e.	<p>Explain the interrelated nature of photosynthesis and cellular respiration in terms of ATP synthesis and degradation.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	B2.5f.	<p>Relate plant structures and functions to the process of photosynthesis and respiration.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>

STRAND / STANDARD CATEGORY	MI.B3.	Biology: Interdependence of Living Systems and the Environment: Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.
STANDARD	L3.p1.	Populations, Communities, and Ecosystems (prerequisite)
GRADE LEVEL EXPECTATION	L3.p1A.	Provide examples of a population, community, and ecosystem. (prerequisite) <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 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: Field Biology - Collecting, Identifying, and Observing</li> </ul>
STRAND / STANDARD CATEGORY	MI.B3.	Biology: Interdependence of Living Systems and the Environment: Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.
STANDARD	L3.p2.	Relationships Among Organisms (prerequisite)
GRADE LEVEL EXPECTATION	L3.p2A.	Describe common relationships among organisms and provide examples of producer/consumer, predator/prey, or parasite/host relationship. (prerequisite) <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>
GRADE LEVEL EXPECTATION	L3.p2B.	Describe common ecological relationships between and among species and their environments (competition, territory, carrying capacity, natural balance, population, dependence, survival, and other biotic and abiotic factors). (prerequisite) <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 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>Teacher Resource CD: A Closer Look at Animals</li> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	L3.p2C.	<p>Describe the role of decomposers in the transfer of energy in an ecosystem. (prerequisite)</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>Teacher Resource CD: A Closer Look at Microbes</li> </ul>
STRAND / STANDARD CATEGORY	MI.B3.	<p><b>Biology: Interdependence of Living Systems and the Environment:</b> Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.</p>
STANDARD	L3.p3.	Factors Influencing Ecosystems (prerequisite)
GRADE LEVEL EXPECTATION	L3.p3A.	<p>Identify the factors in an ecosystem that influence fluctuations in population size. (prerequisite)</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
GRADE LEVEL EXPECTATION	L3.p3B.	<p>Distinguish between the living (biotic) and nonliving (abiotic) components of an ecosystem. (prerequisite)</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> </ul>
GRADE LEVEL EXPECTATION	L3.p3D.	<p>Predict how changes in one population might affect other populations based upon their relationships in a food web. (prerequisite)</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 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 Microbes</li> </ul>
STRAND / STANDARD CATEGORY	MI.B3.	<p><b>Biology: Interdependence of Living Systems and the Environment:</b> Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.</p>
STANDARD	B3.1.	Photosynthesis and Respiration
GRADE LEVEL EXPECTATION	B3.1A.	<p>Describe how organisms acquire energy directly or indirectly from sunlight.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 1 Lab 1 Activity 2: Who Eats Whom? -</li> </ul>

		<p>Creating Food Webs</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 3: Redirecting Energy to Reproduction</li> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>Teacher Resource CD: A Closer Look at Microbes</li> <li>Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
GRADE LEVEL EXPECTATION	B3.1B.	<p>Illustrate and describe the energy conversions that occur during photosynthesis and respiration.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	B3.1C.	<p>Recognize the equations for photosynthesis and respiration and identify the reactants and products for both.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	B3.1D.	<p>Explain how living organisms gain and use mass through the processes of photosynthesis and respiration.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	B3.1e.	<p>Write the chemical equation for photosynthesis and cellular respiration and explain in words what they mean.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	B3.1f.	<p>Summarize the process of photosynthesis.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
STRAND / STANDARD CATEGORY	MI.B3.	<p><b>Biology: Interdependence of Living Systems and the Environment:</b> Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.</p>
STANDARD	B3.2.	Ecosystems
GRADE LEVEL EXPECTATION	B3.2A.	<p>Identify how energy is stored in an ecosystem.</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,</li> </ul>

		and Observing
GRADE LEVEL EXPECTATION	B3.2B.	Describe energy transfer through an ecosystem, accounting for energy lost to the environment as heat. <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>
GRADE LEVEL EXPECTATION	B3.2C.	Draw the flow of energy through an ecosystem. Predict changes in the food web when one or more organisms are removed. <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 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>
STRAND / STANDARD CATEGORY	MI.B3.	Biology: Interdependence of Living Systems and the Environment: Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.
STANDARD	B3.3.	Element Recombination
GRADE LEVEL EXPECTATION	B3.3A.	Use a food web to identify and distinguish producers, consumers, and decomposers and explain the transfer of energy through trophic levels. <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>
STRAND / STANDARD CATEGORY	MI.B3.	Biology: Interdependence of Living Systems and the Environment: Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.

STANDARD	B3.5.	Populations
GRADE LEVEL EXPECTATION	B3.5A.	Graph changes in population growth, given a data table. <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
GRADE LEVEL EXPECTATION	B3.5B.	Explain the influences that affect population growth. <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
STRAND / STANDARD CATEGORY	MI.B3.	Biology: Interdependence of Living Systems and the Environment: Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.
STANDARD	B3.5x.	Environmental Factors
GRADE LEVEL EXPECTATION	B3.5d.	Describe different reproductive strategies employed by various organisms and explain their advantages and disadvantages. <ul style="list-style-type: none"> <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 Microbes</li> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	B3.5e.	Recognize that and describe how the physical or chemical environment may influence the rate, extent, and nature of population dynamics within ecosystems. <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> </ul>
GRADE LEVEL EXPECTATION	B3.5f.	Graph an example of exponential growth. Then show the population leveling off at the carrying capacity of the environment. <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
GRADE LEVEL EXPECTATION	B3.r5g.	Diagram and describe the stages of the life cycle for a human disease-causing organism. (recommended) <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
STRAND / STANDARD CATEGORY	MI.B4.	Biology: Genetics: Students recognize that the specific genetic instructions for any organism are contained within genes composed of DNA molecules located in chromosomes. They explain the mechanism for the direct production of specific proteins based on inherited DNA. Students diagram how occasional modifications in genes and the random distribution of genes from each parent provide genetic variation and become the raw material for evolution. Content Statements, Performances, and Boundaries

STANDARD	L4.p1.	Reproduction (prerequisite)
GRADE LEVEL EXPECTATION	L4.p1A.	Compare and contrast the differences between sexual and asexual reproduction. (prerequisite) <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>
GRADE LEVEL EXPECTATION	L4.p1B.	Discuss the advantages and disadvantages of sexual vs. asexual reproduction. (prerequisite) <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>
STRAND / STANDARD CATEGORY	MI.B4.	Biology: Genetics: Students recognize that the specific genetic instructions for any organism are contained within genes composed of DNA molecules located in chromosomes. They explain the mechanism for the direct production of specific proteins based on inherited DNA. Students diagram how occasional modifications in genes and the random distribution of genes from each parent provide genetic variation and become the raw material for evolution. Content Statements, Performances, and Boundaries
STANDARD	B4.3.	Cell Division - Mitosis and Meiosis
GRADE LEVEL EXPECTATION	B4.3d.	Explain that the sorting and recombination of genes in sexual reproduction result in a great variety of possible gene combinations from the offspring of two parents. <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>
STRAND / STANDARD CATEGORY	MI.B5.	Biology: Evolution and Biodiversity: Students recognize that evolution is the result of genetic changes that occur in constantly changing environments. They can explain that modern evolution includes both the concepts of common descent and natural selection. They illustrate how the consequences of natural selection and differential reproduction have led to the great biodiversity on Earth.
STANDARD	L5.p1.	Survival and Extinction (prerequisite)
GRADE LEVEL EXPECTATION	L5.p1A.	Define a species and give examples. (prerequisite) <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>• Teacher Resource CD: Classifying Life</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
GRADE LEVEL EXPECTATION	L5.p1B.	Define a population and identify local populations. (prerequisite) <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 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</li> </ul>

		<p>Survey</p> <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> </ul>
STRAND / STANDARD CATEGORY	MI.B5.	Biology: Evolution and Biodiversity: Students recognize that evolution is the result of genetic changes that occur in constantly changing environments. They can explain that modern evolution includes both the concepts of common descent and natural selection. They illustrate how the consequences of natural selection and differential reproduction have led to the great biodiversity on Earth.
STANDARD	L5.p2.	Classification (prerequisite)
GRADE LEVEL EXPECTATION	L5.p2A.	<p>Explain, with examples, that ecology studies the varieties and interactions of living things across space while evolution studies the varieties and interactions of living things across time. (prerequisite)</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> </ul>
STRAND / STANDARD CATEGORY	MI.B5.	Biology: Evolution and Biodiversity: Students recognize that evolution is the result of genetic changes that occur in constantly changing environments. They can explain that modern evolution includes both the concepts of common descent and natural selection. They illustrate how the consequences of natural selection and differential reproduction have led to the great biodiversity on Earth.
STANDARD	B5.1.	Theory of Evolution
GRADE LEVEL EXPECTATION	B5.1c.	<p>Summarize the relationships between present-day organisms and those that inhabited the Earth in the past (e.g., use fossil record, embryonic stages, homologous structures, chemical basis).</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Animals</li> </ul>
STRAND / STANDARD CATEGORY	MI.B5.	Biology: Evolution and Biodiversity: Students recognize that evolution is the result of genetic changes that occur in constantly changing environments. They can explain that modern evolution includes both the concepts of common descent and natural selection. They illustrate how the consequences of natural selection and differential reproduction have led to the great biodiversity on Earth.
STANDARD	B5.2.	Molecular Evidence
GRADE LEVEL EXPECTATION	B5.2a.	<p>Describe species as reproductively distinct groups of organisms that can be classified based on morphological, behavioral, and molecular similarities.</p> <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>Teacher Resource CD: Classifying Life</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
GRADE LEVEL EXPECTATION	B5.2b.	<p>Explain that the degree of kinship between organisms or species can be estimated from the similarity of their DNA and protein sequences.</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</li> </ul>

		<p>Survey</p> <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>• 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>
GRADE LEVEL EXPECTATION	B5.r2d.	<p>Interpret a cladogram or phylogenetic tree showing evolutionary relationships among organisms. (recommended)</p> <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> <li>• Teacher Resource CD: Classifying Life</li> </ul>
STRAND / STANDARD CATEGORY	MI.C1.	<p>Chemistry: Inquiry, Reflection, and Social Implications: Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentation.</p>
STANDARD	C1.1.	Scientific Inquiry
GRADE LEVEL EXPECTATION	C1.1B.	<p>Evaluate the uncertainties or validity of scientific conclusions using an understanding of sources of measurement error, the challenges of controlling variables, accuracy of data analysis, logic of argument, logic of experimental design, and/or the dependence on underlying assumptions.</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>
GRADE LEVEL EXPECTATION	C1.1c.	<p>Conduct scientific investigations using appropriate tools and techniques (e.g., selecting an instrument that measures the desired quantity-length, volume, weight, time interval, temperature-with the appropriate level of precision).</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>
STRAND / STANDARD CATEGORY	MI.C1.	Chemistry: Inquiry, Reflection, and Social Implications: Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentation.
STANDARD	C1.2.	Scientific Reflection and Social Implications
GRADE LEVEL EXPECTATION	C1.2e.	<p>Evaluate the future career and occupational prospects of science fields.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Classifying Life</li> </ul>
GRADE LEVEL EXPECTATION	C1.2f.	<p>Critique solutions to problems, given criteria and scientific constraints.</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? -</li> </ul>

		<p>Creating Food Webs</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 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>
GRADE LEVEL EXPECTATION	C1.2i.	<p>Explain the progression of ideas and explanations that lead to science theories that are part of the current scientific consensus or core knowledge.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Classifying Life</li> </ul>
STRAND / STANDARD CATEGORY	MI.C3.	Chemistry: Energy Transfer and Conservation: Students apply the First and Second Laws of Thermodynamics to explain and predict most chemical phenomena.
STANDARD	C3.2x.	Enthalpy
GRADE LEVEL EXPECTATION	C3.2a.	<p>Describe the energy changes in photosynthesis and in the combustion of sugar in terms of bond breaking and bond making.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
STRAND / STANDARD CATEGORY	MI.E1.	Earth Science: Inquiry, Reflection, and Social Implications: Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentation.
STANDARD	E1.1.	Scientific Inquiry
GRADE LEVEL EXPECTATION	E1.1B.	<p>Evaluate the uncertainties or validity of scientific conclusions using an understanding of sources of measurement error, the challenges of controlling variables, accuracy of data analysis, logic of argument, logic of experimental design, and/or the dependence on underlying assumptions.</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 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>GRADE LEVEL EXPECTATION</p>	<p>E1.1C.</p>	<p>Conduct scientific investigations using appropriate tools and techniques (e.g., selecting an instrument that measures the desired quantity-length, volume, weight, time interval, temperature-with the appropriate level of precision).</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> </ul>

		<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>Virtual Laboratory: Classifying Living Organisms</li> </ul>
GRADE LEVEL EXPECTATION	E1.1f.	<p>Predict what would happen if the variables, methods, or timing of an investigation were changed.</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>Virtual Laboratory: Classifying Living Organisms</li> </ul>
STRAND / STANDARD CATEGORY	MI.E1.	<p>Earth Science: Inquiry, Reflection, and Social Implications: Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentation.</p>
STANDARD	E1.2.	<p>Scientific Reflection and Social Implications</p>
GRADE LEVEL EXPECTATION	E1.2E.	<p>Evaluate the future career and occupational prospects of science fields.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Classifying Life</li> </ul>

GRADE LEVEL EXPECTATION	E1.2f.	<p>Critique solutions to problems, given criteria and scientific constraints.</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>
GRADE LEVEL EXPECTATION	E1.2i.	<p>Explain the progression of ideas and explanations that lead to science theories that are part of the current scientific consensus or core knowledge.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Classifying Life</li> </ul>
STRAND / STANDARD CATEGORY	MI.E3.	<p>Earth Science: The Solid Earth: Students explain how scientists study and model the interior of the Earth and its dynamic nature. They use the theory of plate tectonics, the unifying theory of geology, to explain a wide variety of Earth features and processes and how hazards resulting from these processes impact society.</p>
STANDARD	E3.p1.	<p>Landforms and Soils (prerequisite)</p>
GRADE LEVEL EXPECTATION	E3.p1A.	<p>Explain the origin of Michigan landforms. Describe and identify surface features using maps and satellite images. (prerequisite)</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
STRAND / STANDARD CATEGORY	MI.E4.	<p>Earth Science: The Fluid Earth: Students explain how the ocean and atmosphere move and transfer energy around the planet. They also explain how these movements affect climate and weather and how severe weather impacts society. Students explain how long term climatic changes (glaciers) have shaped the Michigan landscape.</p>

STANDARD	E4.p1.	Water Cycle (prerequisite)
GRADE LEVEL EXPECTATION	E4.p1B.	Analyze the flow of water between the elements of a watershed, including surface features (lakes, streams, rivers, wetlands) and groundwater. (prerequisite) <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> </ul>
STRAND / STANDARD CATEGORY	MI.E4.	Earth Science: The Fluid Earth: Students explain how the ocean and atmosphere move and transfer energy around the planet. They also explain how these movements affect climate and weather and how severe weather impacts society. Students explain how long term climatic changes (glaciers) have shaped the Michigan landscape.
STANDARD	E4.p2.	Weather and the Atmosphere (prerequisite)
GRADE LEVEL EXPECTATION	E4.p2A.	Describe the composition and layers of the atmosphere. (prerequisite) <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> </ul>
GRADE LEVEL EXPECTATION	E4.p2D.	Describe relative humidity in terms of the moisture content of the air and the moisture capacity of the air and how these depend on the temperature. (prerequisite) <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> </ul>
STRAND / STANDARD CATEGORY	MI.P1.	Physics: Inquiry, Reflection, and Social Implications: Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentation.
STANDARD	P1.1.	Scientific Inquiry
GRADE LEVEL EXPECTATION	P1.1B.	Evaluate the uncertainties or validity of scientific conclusions using an understanding of sources of measurement error, the challenges of controlling variables, accuracy of data analysis, logic of argument, logic of experimental design, and/or the dependence on underlying assumptions. <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</li> </ul>

		<p>Design</p> <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>
GRADE LEVEL EXPECTATION	P1.1C.	<p>Conduct scientific investigations using appropriate tools and techniques (e.g., selecting an instrument that measures the desired quantity, length, volume, weight, time interval, temperature with the appropriate level of precision).</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>
STRAND / STANDARD CATEGORY	MI.P1.	<p>Physics: Inquiry, Reflection, and Social Implications: Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentation.</p>
STANDARD	P1.2.	Scientific Reflection and Social Implications

GRADE LEVEL EXPECTATION	P1.2E.	Evaluate the future career and occupational prospects of science fields. <ul style="list-style-type: none"> <li>Teacher Resource CD: Classifying Life</li> </ul>
GRADE LEVEL EXPECTATION	P1.2f.	Critique solutions to problems, given criteria and scientific constraints. <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>
GRADE LEVEL EXPECTATION	P1.2i.	Explain the progression of ideas and explanations that lead to science theories that are part of the current scientific consensus or core knowledge. <ul style="list-style-type: none"> <li>Teacher Resource CD: Classifying Life</li> </ul>

Michigan Curriculum Standards

Science

Grade 10

STRAND / STANDARD CATEGORY	MI.B1.	Biology: Inquiry, Reflection, and Social Implications: Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentation.
STANDARD	B1.1.	Scientific Inquiry

<p>GRADE LEVEL EXPECTATION</p>	<p>B1.1A.</p>	<p>Generate new questions that can be investigated in the laboratory or field.</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>
<p>GRADE LEVEL EXPECTATION</p>	<p>B1.1B.</p>	<p>Evaluate the uncertainties or validity of scientific conclusions using an understanding of sources of measurement error, the challenges of controlling variables, accuracy of data analysis, logic of argument, logic of experimental design, and/or the dependence on underlying assumptions.</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> </ul>

		<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>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<p><b>GRADE LEVEL EXPECTATION</b></p>	<p><b>B1.1C.</b></p>	<p>Conduct scientific investigations using appropriate tools and techniques (e.g., selecting an instrument that measures the desired quantity-length, volume, weight, time interval, temperature-with the appropriate level of precision).</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>GRADE LEVEL EXPECTATION</b></p>	<p><b>B1.1D.</b></p>	<p>Identify patterns in data and relate them to theoretical models.</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> </ul>

		<ul style="list-style-type: none"> <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>• Teacher Resource CD: Classifying Life</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<p><b>GRADE LEVEL EXPECTATION</b></p>	<p><b>B1.1E.</b></p>	<p>Describe a reason for a given conclusion using evidence from an 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 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 6: Soil Survey</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
<p><b>GRADE LEVEL EXPECTATION</b></p>	<p><b>B1.1h.</b></p>	<p>Design and conduct a systematic scientific investigation that tests a hypothesis.</p>

		<p>Draw conclusions from data presented in charts or tables.</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>STRAND / STANDARD CATEGORY</b>	<b>MI.B1.</b>	<b>Biology: Inquiry, Reflection, and Social Implications: Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentation.</b>
<b>STANDARD</b>	<b>B1.2.</b>	<b>Scientific Reflection and Social Implications</b>
<b>GRADE LEVEL EXPECTATION</b>	<b>B1.2A.</b>	<p>Critique whether or not specific questions 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</li> </ul>

		<p>Behavior of Pill Bugs</p> <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>
GRADE LEVEL EXPECTATION	B1.2E.	<p>Evaluate the future career and occupational prospects of science fields.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Classifying Life</li> </ul>
GRADE LEVEL EXPECTATION	B1.2f.	<p>Critique solutions to problems, given criteria and scientific constraints.</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>
GRADE LEVEL EXPECTATION	B1.2h.	<p>Describe the distinctions between scientific theories, laws, hypotheses, and observations.</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>Virtual Laboratory: Classifying Living Organisms</li> </ul>
GRADE LEVEL EXPECTATION	B1.2i.	<p>Explain the progression of ideas and explanations that leads to science theories that are part of the current scientific consensus or core knowledge.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Classifying Life</li> </ul>
STRAND / STANDARD CATEGORY	MI.B2.	Biology: Organization and Development of Living Systems: Students describe the general structure and function of cells. They can explain that all living systems are composed of cells and that organisms may be unicellular or multicellular.
STANDARD	L2.p1.	Cells (prerequisite)
GRADE LEVEL EXPECTATION	L2.p1A.	<p>Distinguish between living and nonliving systems. (prerequisite)</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> </ul>
GRADE LEVEL EXPECTATION	L2.p1D.	<p>Explain how the systems in a multicellular organism work together to support the organism. (prerequisite)</p> <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>Teacher Resource CD: A Closer Look at Plants</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
GRADE LEVEL EXPECTATION	L2.p1E.	Compare and contrast how different organisms accomplish similar functions (e.g.,

		<p>obtain oxygen for respiration, and excrete waste). (prerequisite)</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> <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>STRAND / STANDARD CATEGORY</b>	<b>MI.B2.</b>	<b>Biology: Organization and Development of Living Systems: Students describe the general structure and function of cells. They can explain that all living systems are composed of cells and that organisms may be unicellular or multicellular.</b>
<b>STANDARD</b>	<b>L2.p3.</b>	<b>Plants as Producers (prerequisite)</b>
<b>GRADE LEVEL EXPECTATION</b>	<b>L2.p3B.</b>	<p>Explain the origins of plant mass. (prerequisite)</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 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 Plants</li> </ul>
<b>GRADE LEVEL EXPECTATION</b>	<b>L2.p3C.</b>	<p>Predict what would happen to plants growing in low carbon dioxide atmospheres. (prerequisite)</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 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 Plants</li> </ul>
<b>GRADE LEVEL EXPECTATION</b>	<b>L2.p3D.</b>	<p>Explain how the roots of specific plants grow. (prerequisite)</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>

STRAND / STANDARD CATEGORY	MI.B2.	Biology: Organization and Development of Living Systems: Students describe the general structure and function of cells. They can explain that all living systems are composed of cells and that organisms may be unicellular or multicellular.
STANDARD	L2.p4.	Animals as Consumers (prerequisite)
GRADE LEVEL EXPECTATION	L2.p4A.	Classify different organisms based on how they obtain energy for growth and development. (prerequisite) <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 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</li> <li>• Kingdoms of Life: Unit 3 Lab 5 Activity 5: Microlife Survey</li> <li>• Teacher Resource CD: A Closer Look at Microbes</li> <li>• Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
STRAND / STANDARD CATEGORY	MI.B2.	Biology: Organization and Development of Living Systems: Students describe the general structure and function of cells. They can explain that all living systems are composed of cells and that organisms may be unicellular or multicellular.
STANDARD	B2.1.	Transformation of Matter and Energy in Cells
GRADE LEVEL EXPECTATION	B2.1A.	Explain how cells transform energy (ultimately obtained from the sun) from one form to another through the processes of photosynthesis and respiration. Identify the reactants and products in the general reaction of photosynthesis. <ul style="list-style-type: none"> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	B2.1B.	Compare and contrast the transformation of matter and energy during photosynthesis and respiration. <ul style="list-style-type: none"> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
STRAND / STANDARD CATEGORY	MI.B2.	Biology: Organization and Development of Living Systems: Students describe the general structure and function of cells. They can explain that all living systems are composed of cells and that organisms may be unicellular or multicellular.
STANDARD	B2.4.	Cell Specialization
GRADE LEVEL EXPECTATION	B2.4A.	Explain that living things can be classified based on structural, embryological, and molecular (relatedness of DNA sequence) evidence. <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</li> </ul>

		<p>and Measurement</p> <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>• 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>
<p>GRADE LEVEL EXPECTATION</p>	<p>B2.4B.</p>	<p>Describe how various organisms have developed different specializations to accomplish a particular function and yet the end result is the same (e.g., excreting nitrogenous wastes in animals, obtaining oxygen for respiration).</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> <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>
<p>GRADE LEVEL EXPECTATION</p>	<p>B2.4C.</p>	<p>Explain how different organisms accomplish the same result using different structural specializations (gills vs. lungs vs. membranes).</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 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> <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>
<p>GRADE LEVEL EXPECTATION</p>	<p>B2.4d.</p>	<p>Analyze the relationships among organisms based on their shared physical, biochemical, genetic, and cellular characteristics and functional processes.</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>• Teacher Resource CD: A Closer Look at Animals</li> </ul>

		<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> <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>
GRADE LEVEL EXPECTATION	B2.4g.	<p>Explain that some structures in the modern eukaryotic cell developed from early prokaryotes, such as mitochondria, and in plants, chloroplasts.</p> <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>• Teacher Resource CD: Classifying Life</li> <li>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
GRADE LEVEL EXPECTATION	B2.4h.	<p>Describe the structures of viruses and bacteria.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> <li>• Teacher Resource CD: A Closer Look at Microbes</li> </ul>
STRAND / STANDARD CATEGORY	MI.B2.	Biology: Organization and Development of Living Systems: Students describe the general structure and function of cells. They can explain that all living systems are composed of cells and that organisms may be unicellular or multicellular.
STANDARD	B2.5.	Living Organism Composition
GRADE LEVEL EXPECTATION	B2.5c.	<p>Describe how energy is transferred and transformed from the Sun to energy-rich molecules during photosynthesis.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
STRAND / STANDARD CATEGORY	MI.B2.	Biology: Organization and Development of Living Systems: Students describe the general structure and function of cells. They can explain that all living systems are composed of cells and that organisms may be unicellular or multicellular.
STANDARD	B2.5x.	Energy Transfer
GRADE LEVEL EXPECTATION	B2.5e.	<p>Explain the interrelated nature of photosynthesis and cellular respiration in terms of ATP synthesis and degradation.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	B2.5f.	<p>Relate plant structures and functions to the process of photosynthesis and respiration.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: A Closer Look at Plants</li> </ul>
STRAND / STANDARD CATEGORY	MI.B3.	Biology: Interdependence of Living Systems and the Environment: Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.
STANDARD	L3.p1.	Populations, Communities, and Ecosystems (prerequisite)

GRADE LEVEL EXPECTATION	L3.p1A.	<p>Provide examples of a population, community, and ecosystem. (prerequisite)</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 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 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: Field Biology - Collecting, Identifying, and Observing</li> </ul>
STRAND / STANDARD CATEGORY	MI.B3.	<p>Biology: Interdependence of Living Systems and the Environment: Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.</p>
STANDARD	L3.p2.	<p>Relationships Among Organisms (prerequisite)</p>
GRADE LEVEL EXPECTATION	L3.p2A.	<p>Describe common relationships among organisms and provide examples of producer/consumer, predator/prey, or parasite/host relationship. (prerequisite)</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>
GRADE LEVEL EXPECTATION	L3.p2B.	<p>Describe common ecological relationships between and among species and their environments (competition, territory, carrying capacity, natural balance, population, dependence, survival, and other biotic and abiotic factors). (prerequisite)</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 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 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> </ul>

		<ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	L3.p2C.	<p>Describe the role of decomposers in the transfer of energy in an ecosystem. (prerequisite)</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>Teacher Resource CD: A Closer Look at Microbes</li> </ul>
STRAND / STANDARD CATEGORY	MI.B3.	<p><b>Biology: Interdependence of Living Systems and the Environment:</b> Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.</p>
STANDARD	L3.p3.	Factors Influencing Ecosystems (prerequisite)
GRADE LEVEL EXPECTATION	L3.p3A.	<p>Identify the factors in an ecosystem that influence fluctuations in population size. (prerequisite)</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
GRADE LEVEL EXPECTATION	L3.p3B.	<p>Distinguish between the living (biotic) and nonliving (abiotic) components of an ecosystem. (prerequisite)</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> </ul>
GRADE LEVEL EXPECTATION	L3.p3D.	<p>Predict how changes in one population might affect other populations based upon their relationships in a food web. (prerequisite)</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 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 Microbes</li> </ul>
STRAND / STANDARD CATEGORY	MI.B3.	<p><b>Biology: Interdependence of Living Systems and the Environment:</b> Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.</p>
STANDARD	B3.1.	Photosynthesis and Respiration
GRADE LEVEL EXPECTATION	B3.1A.	<p>Describe how organisms acquire energy directly or indirectly from sunlight.</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 2 Lab 3 Activity 3: Redirecting Energy to Reproduction</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>

		<ul style="list-style-type: none"> <li>Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
GRADE LEVEL EXPECTATION	B3.1B.	<p>Illustrate and describe the energy conversions that occur during photosynthesis and respiration.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	B3.1C.	<p>Recognize the equations for photosynthesis and respiration and identify the reactants and products for both.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	B3.1D.	<p>Explain how living organisms gain and use mass through the processes of photosynthesis and respiration.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	B3.1e.	<p>Write the chemical equation for photosynthesis and cellular respiration and explain in words what they mean.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	B3.1f.	<p>Summarize the process of photosynthesis.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
STRAND / STANDARD CATEGORY	MI.B3.	<p><b>Biology: Interdependence of Living Systems and the Environment: Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.</b></p>
STANDARD	B3.2.	Ecosystems
GRADE LEVEL EXPECTATION	B3.2A.	<p>Identify how energy is stored in an ecosystem.</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>
GRADE LEVEL EXPECTATION	B3.2B.	<p>Describe energy transfer through an ecosystem, accounting for energy lost to the environment as heat.</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> </ul>

		<ul style="list-style-type: none"> <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>
GRADE LEVEL EXPECTATION	B3.2C.	<p>Draw the flow of energy through an ecosystem. Predict changes in the food web when one or more organisms are removed.</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 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>
STRAND / STANDARD CATEGORY	MI.B3.	<p>Biology: Interdependence of Living Systems and the Environment: Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.</p>
STANDARD	B3.3.	Element Recombination
GRADE LEVEL EXPECTATION	B3.3A.	<p>Use a food web to identify and distinguish producers, consumers, and decomposers and explain the transfer of energy through trophic levels.</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>
STRAND / STANDARD CATEGORY	MI.B3.	<p>Biology: Interdependence of Living Systems and the Environment: Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.</p>
STANDARD	B3.5.	Populations
GRADE LEVEL EXPECTATION	B3.5A.	<p>Graph changes in population growth, given a data table.</p> <ul style="list-style-type: none"> <li>• Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>

GRADE LEVEL EXPECTATION	B3.5B.	<p>Explain the influences that affect population 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>
STRAND / STANDARD CATEGORY	MI.B3.	<p>Biology: Interdependence of Living Systems and the Environment: Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.</p>
STANDARD	B3.5x.	Environmental Factors
GRADE LEVEL EXPECTATION	B3.5d.	<p>Describe different reproductive strategies employed by various organisms and explain their advantages and disadvantages.</p> <ul style="list-style-type: none"> <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 Microbes</li> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
GRADE LEVEL EXPECTATION	B3.5e.	<p>Recognize that and describe how the physical or chemical environment may influence the rate, extent, and nature of population dynamics within ecosystems.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> </ul>
GRADE LEVEL EXPECTATION	B3.5f.	<p>Graph an example of exponential growth. Then show the population leveling off at the carrying capacity of the environment.</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
GRADE LEVEL EXPECTATION	B3.r5g.	<p>Diagram and describe the stages of the life cycle for a human disease-causing organism. (recommended)</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 1: Scavenging for Bacteria and Fungi</li> </ul>
STRAND / STANDARD CATEGORY	MI.B4.	<p>Biology: Genetics: Students recognize that the specific genetic instructions for any organism are contained within genes composed of DNA molecules located in chromosomes. They explain the mechanism for the direct production of specific proteins based on inherited DNA. Students diagram how occasional modifications in genes and the random distribution of genes from each parent provide genetic variation and become the raw material for evolution. Content Statements, Performances, and Boundaries</p>
STANDARD	L4.p1.	Reproduction (prerequisite)
GRADE LEVEL EXPECTATION	L4.p1A.	<p>Compare and contrast the differences between sexual and asexual reproduction. (prerequisite)</p> <ul style="list-style-type: none"> <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> </ul>
GRADE LEVEL EXPECTATION	L4.p1B.	<p>Discuss the advantages and disadvantages of sexual vs. asexual reproduction. (prerequisite)</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>
STRAND / STANDARD CATEGORY	MI.B4.	<p>Biology: Genetics: Students recognize that the specific genetic instructions for any organism are contained within genes composed of DNA molecules located in chromosomes. They explain the mechanism for the direct production of specific proteins based on inherited DNA. Students diagram how occasional modifications in genes and the random distribution of genes from each parent provide genetic variation and become the raw material for evolution. Content Statements, Performances, and Boundaries</p>
STANDARD	B4.3.	Cell Division - Mitosis and Meiosis
GRADE LEVEL EXPECTATION	B4.3d.	<p>Explain that the sorting and recombination of genes in sexual reproduction result in a great variety of possible gene combinations from the offspring of two parents.</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>
STRAND / STANDARD CATEGORY	MI.B5.	<p>Biology: Evolution and Biodiversity: Students recognize that evolution is the result of genetic changes that occur in constantly changing environments. They can explain that modern evolution includes both the concepts of common descent and natural selection. They illustrate how the consequences of natural selection and differential reproduction have led to the great biodiversity on Earth.</p>
STANDARD	L5.p1.	Survival and Extinction (prerequisite)
GRADE LEVEL EXPECTATION	L5.p1A.	<p>Define a species and give examples. (prerequisite)</p> <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>Teacher Resource CD: Classifying Life</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
GRADE LEVEL EXPECTATION	L5.p1B.	<p>Define a population and identify local populations. (prerequisite)</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 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 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>

STRAND / STANDARD CATEGORY	MI.B5.	Biology: Evolution and Biodiversity: Students recognize that evolution is the result of genetic changes that occur in constantly changing environments. They can explain that modern evolution includes both the concepts of common descent and natural selection. They illustrate how the consequences of natural selection and differential reproduction have led to the great biodiversity on Earth.
STANDARD	L5.p2.	Classification (prerequisite)
GRADE LEVEL EXPECTATION	L5.p2A.	Explain, with examples, that ecology studies the varieties and interactions of living things across space while evolution studies the varieties and interactions of living things across time. (prerequisite) <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 2 Lab 2 Activity 2: Scavenging for Pond Microlife</li> </ul>
STRAND / STANDARD CATEGORY	MI.B5.	Biology: Evolution and Biodiversity: Students recognize that evolution is the result of genetic changes that occur in constantly changing environments. They can explain that modern evolution includes both the concepts of common descent and natural selection. They illustrate how the consequences of natural selection and differential reproduction have led to the great biodiversity on Earth.
STANDARD	B5.1.	Theory of Evolution
GRADE LEVEL EXPECTATION	B5.1c.	Summarize the relationships between present-day organisms and those that inhabited the Earth in the past (e.g., use fossil record, embryonic stages, homologous structures, chemical basis). <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Animals</li> </ul>
STRAND / STANDARD CATEGORY	MI.B5.	Biology: Evolution and Biodiversity: Students recognize that evolution is the result of genetic changes that occur in constantly changing environments. They can explain that modern evolution includes both the concepts of common descent and natural selection. They illustrate how the consequences of natural selection and differential reproduction have led to the great biodiversity on Earth.
STANDARD	B5.2.	Molecular Evidence
GRADE LEVEL EXPECTATION	B5.2a.	Describe species as reproductively distinct groups of organisms that can be classified based on morphological, behavioral, and molecular similarities. <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>Teacher Resource CD: Classifying Life</li> <li>Virtual Laboratory: Classifying Living Organisms</li> </ul>
GRADE LEVEL EXPECTATION	B5.2b.	Explain that the degree of kinship between organisms or species can be estimated from the similarity of their DNA and protein sequences. <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> </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>• Virtual Laboratory: Classifying Living Organisms</li> </ul>
GRADE LEVEL EXPECTATION	B5.r2d.	<p>Interpret a cladogram or phylogenetic tree showing evolutionary relationships among organisms. (recommended)</p> <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> <li>• Teacher Resource CD: Classifying Life</li> </ul>
STRAND / STANDARD CATEGORY	MI.C1.	<p><b>Chemistry: Inquiry, Reflection, and Social Implications:</b> Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentation.</p>
STANDARD	C1.1.	Scientific Inquiry
GRADE LEVEL EXPECTATION	C1.1B.	<p>Evaluate the uncertainties or validity of scientific conclusions using an understanding of sources of measurement error, the challenges of controlling variables, accuracy of data analysis, logic of argument, logic of experimental design, and/or the dependence on underlying assumptions.</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>

GRADE LEVEL EXPECTATION	C1.1C.	<p>Conduct scientific investigations using appropriate tools and techniques (e.g., selecting an instrument that measures the desired quantity-length, volume, weight, time interval, temperature-with the appropriate level of precision).</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>
STRAND / STANDARD CATEGORY	MI.C1.	<p>Chemistry: Inquiry, Reflection, and Social Implications: Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentation.</p>
STANDARD	C1.2.	Scientific Reflection and Social Implications
GRADE LEVEL EXPECTATION	C1.2E.	<p>Evaluate the future career and occupational prospects of science fields.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Classifying Life</li> </ul>
GRADE LEVEL EXPECTATION	C1.2f.	<p>Critique solutions to problems, given criteria and scientific constraints.</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>
GRADE LEVEL EXPECTATION	C1.2i.	<p>Explain the progression of ideas and explanations that lead to science theories that are part of the current scientific consensus or core knowledge.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Classifying Life</li> </ul>
STRAND / STANDARD CATEGORY	MI.C3.	Chemistry: Energy Transfer and Conservation: Students apply the First and Second Laws of Thermodynamics to explain and predict most chemical phenomena.
STANDARD	C3.2x.	Enthalpy
GRADE LEVEL EXPECTATION	C3.2a.	<p>Describe the energy changes in photosynthesis and in the combustion of sugar in terms of bond breaking and bond making.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: A Closer Look at Plants</li> </ul>
STRAND / STANDARD CATEGORY	MI.E1.	Earth Science: Inquiry, Reflection, and Social Implications: Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentation.
STANDARD	E1.1.	Scientific Inquiry
GRADE LEVEL EXPECTATION	E1.1B.	<p>Evaluate the uncertainties or validity of scientific conclusions using an understanding of sources of measurement error, the challenges of controlling variables, accuracy of data analysis, logic of argument, logic of experimental design, and/or the dependence on underlying assumptions.</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 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>GRADE LEVEL EXPECTATION</b></p>	<p><b>E1.1C.</b></p>	<p>Conduct scientific investigations using appropriate tools and techniques (e.g., selecting an instrument that measures the desired quantity-length, volume, weight, time interval, temperature-with the appropriate level of precision).</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> </ul>

		<ul style="list-style-type: none"> <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>
GRADE LEVEL EXPECTATION	E1.1f.	<p>Predict what would happen if the variables, methods, or timing of an investigation were changed.</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>Virtual Laboratory: Classifying Living Organisms</li> </ul>
STRAND / STANDARD CATEGORY	MI.E1.	<p>Earth Science: Inquiry, Reflection, and Social Implications: Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentation.</p>
STANDARD	E1.2.	<p>Scientific Reflection and Social Implications</p>
GRADE LEVEL EXPECTATION	E1.2E.	<p>Evaluate the future career and occupational prospects of science fields.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Classifying Life</li> </ul>
GRADE LEVEL EXPECTATION	E1.2f.	<p>Critique solutions to problems, given criteria and scientific constraints.</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>
GRADE LEVEL EXPECTATION	E1.2i.	<p>Explain the progression of ideas and explanations that lead to science theories that are part of the current scientific consensus or core knowledge.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Classifying Life</li> </ul>
STRAND / STANDARD CATEGORY	MI.E3.	Earth Science: The Solid Earth: Students explain how scientists study and model the interior of the Earth and its dynamic nature. They use the theory of plate tectonics, the unifying theory of geology, to explain a wide variety of Earth features and processes and how hazards resulting from these processes impact society.
STANDARD	E3.p1.	Landforms and Soils (prerequisite)
GRADE LEVEL EXPECTATION	E3.p1A.	<p>Explain the origin of Michigan landforms. Describe and identify surface features using maps and satellite images. (prerequisite)</p> <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 1: Site Survey</li> <li>Teacher Resource CD: Field Biology - Collecting, Identifying, and Observing</li> </ul>
STRAND / STANDARD CATEGORY	MI.E4.	Earth Science: The Fluid Earth: Students explain how the ocean and atmosphere move and transfer energy around the planet. They also explain how these movements affect climate and weather and how severe weather impacts society. Students explain how long term climatic changes (glaciers) have shaped the Michigan landscape.
STANDARD	E4.p1.	Water Cycle (prerequisite)
GRADE LEVEL EXPECTATION	E4.p1B.	Analyze the flow of water between the elements of a watershed, including surface features (lakes, streams, rivers, wetlands) and groundwater. (prerequisite)

		<ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 4: Stream/River Survey</li> </ul>
STRAND / STANDARD CATEGORY	MI.E4.	Earth Science: The Fluid Earth: Students explain how the ocean and atmosphere move and transfer energy around the planet. They also explain how these movements affect climate and weather and how severe weather impacts society. Students explain how long term climatic changes (glaciers) have shaped the Michigan landscape.
STANDARD	E4.p2.	Weather and the Atmosphere (prerequisite)
GRADE LEVEL EXPECTATION	E4.p2A.	Describe the composition and layers of the atmosphere. (prerequisite) <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> </ul>
GRADE LEVEL EXPECTATION	E4.p2D.	Describe relative humidity in terms of the moisture content of the air and the moisture capacity of the air and how these depend on the temperature. (prerequisite) <ul style="list-style-type: none"> <li>Kingdoms of Life: Unit 3 Lab 5 Activity 6: Soil Survey</li> </ul>
STRAND / STANDARD CATEGORY	MI.P1.	Physics: Inquiry, Reflection, and Social Implications: Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentation.
STANDARD	P1.1.	Scientific Inquiry
GRADE LEVEL EXPECTATION	P1.1B.	Evaluate the uncertainties or validity of scientific conclusions using an understanding of sources of measurement error, the challenges of controlling variables, accuracy of data analysis, logic of argument, logic of experimental design, and/or the dependence on underlying assumptions. <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>

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GRADE LEVEL EXPECTATION	P1.1C.	<p>Conduct scientific investigations using appropriate tools and techniques (e.g., selecting an instrument that measures the desired quantity, length, volume, weight, time interval, temperature with the appropriate level of precision).</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>
STRAND / STANDARD CATEGORY	MI.P1.	<p>Physics: Inquiry, Reflection, and Social Implications: Students will understand the nature of science and demonstrate an ability to practice scientific reasoning by applying it to the design, execution, and evaluation of scientific investigations. Students will demonstrate their understanding that scientific knowledge is gathered through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentation.</p>
STANDARD	P1.2.	Scientific Reflection and Social Implications
GRADE LEVEL EXPECTATION	P1.2E.	<p>Evaluate the future career and occupational prospects of science fields.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Classifying Life</li> </ul>

GRADE LEVEL EXPECTATION	P1.2f.	<p>Critique solutions to problems, given criteria and scientific constraints.</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>
GRADE LEVEL EXPECTATION	P1.2i.	<p>Explain the progression of ideas and explanations that lead to science theories that are part of the current scientific consensus or core knowledge.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Classifying Life</li> </ul>