

Merrimack School District
Essential Learning Competencies

School	MMS
Discipline	Science
Course Title	7 th Grade Science

Quarter 1

Essential Learning Competencies	Links to the Rubrics/Standards/Competency	Formative Assessments	Summative Assessments
1. Demonstrate knowledge of scientific questions and methodology.	<p>COMMON RUBRIC PROFICIENCY CRITERIA</p> <ul style="list-style-type: none"> Choose questions that can be tested using science. Write a hypothesis and justify it based on observations/research. Design and list the steps of an experiment that will test a chosen hypothesis. Classify the variables in an experiment as controlled, independent/manipulated, and dependent/responding. Write a conclusion that cites data collected in an experiment to support or refute the hypothesis and identifies sources of experimental error. 	<p>Testable Questions</p> <p>Variables</p> <p>Procedures</p> <p>Hypothesis/Prediction</p>	<p>Experimental Design/Lab Report</p>
2. Demonstrate an understanding of how living things are classified into kingdoms and other taxonomic groups.	<p>COMMON RUBRIC PROFICIENCY CRITERIA</p> <ul style="list-style-type: none"> Identify plants and animals using dichotomous keys. Use a model, classification system or dichotomous key to illustrate, compare, or interpret possible relationships among groups of organisms. Describe how organisms are classified into a hierarchy of groups and subgroups, which are based on similarities that reflect their evolutionary relationships. 	<p>Dichotomous Key Practice</p> <p>Levels of Classification</p>	<p>Classification Project</p>
3. Demonstrate an understanding of how living things have physical structures that perform different functions.	<p>COMMON RUBRIC PROFICIENCY CRITERIA</p> <ul style="list-style-type: none"> List organelles and name their functions. Identify various types of single celled organisms based on their physical characteristics. Give examples of how single celled organisms perform basic life functions. Give examples of plants, fungi, and animals and explain why they fit into their respective kingdoms. Give examples of how multi-celled organisms perform basic life functions, citing the major organs used and explaining their interrelationships. 	<p>Cell Organelle Analogy</p> <p>Kingdom Criteria</p> <p>Comparing Life Functions</p>	<p>Structure and Function Assessment</p>
4. Demonstrate knowledge of how energy is transferred between living things in an ecosystem through food webs.	<p>COMMON RUBRIC PROFICIENCY CRITERIA</p> <ul style="list-style-type: none"> Compare and contrast food webs with varying levels of biodiversity. Design an accurate food chains and webs showing the flow of energy. Given a food web, describe how matter cycles thorough the ecosystem depicted. Model the ingredients and products in the processes of photosynthesis and cellular respiration. 	<p>Food Chains/Food Webs</p> <p>Energy Pyramids</p> <p>Modeling Photosynthesis</p>	<p>Food Web Project</p>

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Quarter 2

Essential Learning Competencies	Links to the Rubrics/Standards/Competency	Formative Assessments	Summative Assessments
1. Demonstrate an understanding of how living things have physical structures that perform different functions.			Test/Performance Assessed by common rubric proficiency criteria
2. Demonstrate knowledge of how energy is transferred between living things in an ecosystem through food webs.			Test/Performance Assessed by common rubric proficiency criteria
3. Demonstrate the knowledge that there are genetic variations among individuals and groups of organisms which can affect the survival of organisms.			Test/Performance Assessed by common rubric proficiency criteria
4. Demonstrate the knowledge that species of living things may adapt, move away, or become extinct, over long periods of time, and the environment changes.			Test/Performance Assessed by common rubric proficiency criteria

Quarter 3 – NA ON MIDDLE SCHOOL LEVEL SEE QUARTER 1

Essential Learning Competencies	Links to the Rubrics/Standards/Competency	Formative Assessments	Summative Assessments
1.			
2.			
3.			
4.			
5.			
6.			

Quarter 4 – NA ON MIDDLE SCHOOL LEVEL SEE QUARTER 2

Essential Learning Competencies	Links to the Rubrics/Standards/Competency	Formative Assessments	Summative Assessments
1.			
2.			
3.			
4.			
5.			
6.			