

## MWEE Integration With Grade 5 Science Curriculum

### Current Scope & Sequence

Lesson	Day	Grade 5 Curriculum	MWEE Integration
<i>Marking Period 1 Begins September 1</i>			
<b>MP1A Teyha EIE</b>			
1	1	<ul style="list-style-type: none"> <li>Read and analyze the story “Teyha’s Pollution Solution” in terms of how the environmental engineers work to help clean up pollution. (Days 1-4)</li> <li>Define and describe some parts of an ecosystem. (Day 1)</li> </ul>	<b>Issue Definition</b> <ul style="list-style-type: none"> <li>Develop understanding of a watershed</li> <li>Develop understanding of the Chesapeake Bay Watershed, its proximity to the school and community, and its importance to the population that live within its borders</li> <li>Develop understanding of a sub-watershed, the 14 sub-watersheds in Cecil County, and the local sub-watershed (sub-watershed in which the school is located)</li> <li>Develop an understanding of how the Chesapeake Bay Watershed is connected to and affected by the local sub-watershed</li> <li>Develop an understanding of how natural factors (e.g. invasive species, change in rainfall) and human factors (e.g. population, industry, agriculture, recreation) affect the local sub-watershed and the Chesapeake Bay Watershed</li> <li>Explore the “health” of the local sub-watershed</li> <li>Develop the Driving Question.</li> <li>Develop a list of possible action projects</li> <li>Visit location(s) included in project</li> </ul>
	2	<ul style="list-style-type: none"> <li>Read and analyze the story “Teyha’s Pollution Solution” in terms of how the environmental engineers work to help clean up pollution. (Days 1-4)</li> <li>Explain how one change in an ecosystem may be related to other changes by using the food web model.</li> </ul>	
	3	<ul style="list-style-type: none"> <li>Read and analyze the story “Teyha’s Pollution Solution” in terms of how the environmental engineers work to help clean up pollution. (Days 1-4)</li> <li>Explain how the EDP (Engineering Design Process) can be used to solve problems.</li> </ul>	
	4	<ul style="list-style-type: none"> <li>Linking Teyha to real world environmental engineers by investigating how the biggest environmental disaster was handled by professionals in 2010 (Deepwater Horizon Oil Spill).</li> </ul> <p style="text-align: center; color: red;"><b>POSSIBLE</b></p>	
2	5	<ul style="list-style-type: none"> <li>Learn about some of the problems plaguing the plants and animals of the fictional town, Greentown, by reading the letter from the mayor (page 2-7); define pollution; explain the role of environmental engineers</li> </ul>	
	6	<ul style="list-style-type: none"> <li>Read about the pH scale and a test the locations of Greentown for pH</li> </ul>	

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	7	<ul style="list-style-type: none"> <li>Finish testing Greentown locations, compile class data and determine the area of Greentown that is harming or polluting the rest of the area</li> </ul>	
	8	<ul style="list-style-type: none"> <li><i>(Completion Day)</i></li> </ul> <p style="text-align: center;">YES</p>	
3	9	<ul style="list-style-type: none"> <li>Create a model to represent the connections between the different components of a river ecosystem.</li> </ul>	
	10	<ul style="list-style-type: none"> <li>Brainstorm ways that the ecosystem might be affected by an oil spill and use the model they create to study how the ecosystem might be impacted; explain how a model (the web) of connections between living and nonliving things in an ecosystem is useful, but also limited in representing the possible effects of an oil spill.</li> </ul>	
	11	<ul style="list-style-type: none"> <li>Examine different materials and methods to clean up oil spills and discuss the advantages and disadvantages of each through controlled experiments.</li> </ul>	
	12	<ul style="list-style-type: none"> <li>Compare and contrast by evaluating the oil cleanup methods and data to determine which are good at containing oil (booms) and those good at removing oil</li> </ul>	
4	13	<ul style="list-style-type: none"> <li>Students review the goal of the design challenge and the evaluation process for their project design while completing the “Ask” step for the EDP.</li> </ul>	
	14	<p style="text-align: center;">↑</p> <ul style="list-style-type: none"> <li>Students will create 2 ideas in the “Imagine” step of the EDP that will solve their environmental problem.</li> </ul> <p style="text-align: center;">YES</p>	
	15	<ul style="list-style-type: none"> <li>Students will select one of their ideas from the “Imagine” handouts and plan their environmental clean up by identifying materials and/or tools, calculating the associated cost to</li> </ul>	

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		implement their solution, and “planning” the step by step process of using those materials and/or tools.	
	16	<ul style="list-style-type: none"> <li>Students implement their “plan” while they “create” their environmental solution. They will begin evaluating their clean-up process by figuring out their “cost score,” “shore score,” and “ecosystem impact score.”</li> </ul>	
	17	<ul style="list-style-type: none"> <li>Students will use their total score (cost score + shore score + ecosystem impact score) to determine how they can “improve” their clean up process.</li> </ul>	
	18	<ul style="list-style-type: none"> <li>Students will follow their “improve” plan and complete their second design they created on day 5.</li> </ul> <p style="text-align: center;"><b>YES</b></p>	
<b>MP1B Human Interactions on Earth</b>			
5	19	<ul style="list-style-type: none"> <li>Define the words atmosphere, geosphere, hydrosphere, biosphere.</li> <li>Begin a webquest where they are introduced to the 4 spheres of Earth (Hydrosphere, Atmosphere, Geosphere and Biosphere).</li> </ul>	<b>Outdoor Field Experiences Environmental Action Projects</b> <ul style="list-style-type: none"> <li>Select action project</li> <li>Develop secondary project questions</li> <li>Conduct research</li> <li>Read narrative resources</li> <li>Investigate informational resources</li> <li>Develop data collection tools appropriate for action project</li> <li>Begin action project</li> <li>Leverage partnership(s) with local resources and experts</li> </ul>
	20	<ul style="list-style-type: none"> <li>Compare the major systems of the Earth and their interactions in multiple ways as they affect Earth’s surface materials and processes</li> </ul>	
6	21	<ul style="list-style-type: none"> <li>Organize the levels of organization on Earth from atom to biosphere.</li> <li>Compare the major systems of the Earth and their interactions in multiple ways as the affect Earth’s surface materials and processes</li> </ul>	
7	22	<ul style="list-style-type: none"> <li>Define the words troposphere, stratosphere, mesosphere, thermosphere and exosphere (5 layers of the atmosphere)</li> </ul>	
	23	<ul style="list-style-type: none"> <li>Demonstrate how the levels of the atmosphere are organized by completing “flipbook”</li> </ul> <p style="text-align: center;"><b>POSSIBLE - COMPACT TO 1 DAY</b></p>	

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8	24	<ul style="list-style-type: none"> <li>Students will sort pictures to demonstrate how they categorize how humans interact with the earth.</li> <li>Students will explain how the geosphere and its layers interact with the other spheres; especially on human impact and actions.</li> </ul>	
	25	<ul style="list-style-type: none"> <li>Students will analyze classroom, grade level, or school trash collection procedures and educate others on the importance of the 4 R's (Reduce, Reuse, Recycle, and Rethink).</li> </ul>	
9	26	<ul style="list-style-type: none"> <li>Students will read science texts to investigate the percent of Earth's surface covered by water (hydrosphere). The hydrosphere is interdependent on the geosphere, biosphere, and atmosphere.</li> <li>Students will review the water cycle and explain how it is created with the different types of water sources available on earth (fresh, salt and glacier).</li> <li>Students will discover that oceans support a variety of ecosystems and organisms.</li> </ul> <p><b>POSSIBLE - COMPACT TO 1 DAY</b></p>	
	27		
10	28	<ul style="list-style-type: none"> <li>Identify categories of pollution in the hydrosphere and explain how these categories affect the ecosystem that surrounds the water source.</li> <li>Discuss how human actions lead to water pollution and analyze how pollutants travel through the watershed.</li> <li>Identify careers that they may choose to investigate that help educate the community or prevent/clean-up the ecosystems in and around water sources where pollution is created/dumped.</li> </ul>	
	29		
11	30	<ul style="list-style-type: none"> <li>Students will review the 3 main forms of water pollution</li> <li>Students will review which watershed they live in within Cecil County</li> <li>Students will discuss the purpose of a water treatment plant</li> <li>Students will investigate the sources of</li> </ul>	

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		our drinking water within Cecil County <ul style="list-style-type: none"> <li>Students will investigate the CBF (Chesapeake Bay Foundation) and how it helps make our community water safer.</li> </ul>	
	31	<ul style="list-style-type: none"> <li>Using the EDP to create a water filtration device</li> </ul>	
	32	<ul style="list-style-type: none"> <li>Using the EDP to test and evaluate their water filtration device</li> </ul>	
12	33	<ul style="list-style-type: none"> <li>Students will compare and contrast the geosphere, biosphere, atmosphere and hydrosphere.</li> </ul>	
	34	<ul style="list-style-type: none"> <li>Students will give specific examples of interactions between the Earth's spheres and/or analyze local phenomena to explain how the 4 spheres can be seen and interact together.</li> </ul> <p style="text-align: center; color: red;">YES - COMPACT TO 1 DAY WATERSHED CONTENT WILL BE ADDRESSED IN AND MWEE LESSON</p>	
	35	<i>Assessment Day</i>	
	36	<i>Assessment Day</i>	
Number of MWEE days			7
<i>Marking Period 1 Ends November 4</i>			
<i>Marking Period 3 Begins January 26</i>			
<b>MP3A Properties of Matter</b>			
1	1	<ul style="list-style-type: none"> <li>Define matter as anything that has mass and takes up space (volume).</li> <li>Use tools that measure mass and volume</li> </ul>	<b>Synthesis and Conclusions</b> <ul style="list-style-type: none"> <li>Complete/continue/revisit action project</li> <li>Analyze outcomes</li> <li>Develop conclusion</li> <li>Develop questions stemming from action project</li> <li>Develop path forward for action project or possible future action projects</li> </ul>
	2	↑ <ul style="list-style-type: none"> <li>Recognize that solids, liquids, and gasses are the 3 main phases of matter.</li> </ul> <p style="text-align: center; color: red;">YES - COMPACT DAYS 1 &amp; 2</p>	
	3	<ul style="list-style-type: none"> <li>Use models to help describe/define</li> </ul>	

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		phenomena we cannot see <ul style="list-style-type: none"> <li>Matter is made up of atoms</li> </ul>	
	4	↑ <ul style="list-style-type: none"> <li>All matter is made up of small particles called atoms.</li> <li>Atoms are organized differently depending on the state of matter</li> <li>Atoms have 3 different parts to them (proton, neutron and electron)</li> </ul> <p style="text-align: center; color: red;">YES - COMPACT DAYS 3 &amp; 4</p>	
2	5	<ul style="list-style-type: none"> <li>Explore and describe changes in physical states of matter (solid, liquid, gas)</li> <li>Define the vocabulary terms (evaporation, freezing, melting, sublimation, condensation)</li> </ul>	
	6		
3	7	<ul style="list-style-type: none"> <li>Students will define the terms, mixtures, heterogeneous and homogeneous mixtures, solutions, solvents and solutes.</li> <li>students will complete 2 stations, investigating the difference between mixtures and solutions and gathering evidence and data.</li> <li>Within the lab, Identify the solute and solvent in solutions created in laboratory investigation</li> <li>Within the lab, compare the weight of a mixture to the weight of its parts</li> </ul>	
	8	<ul style="list-style-type: none"> <li>students will complete the other 2 stations, investigating the difference between mixtures and solutions and gathering evidence and data</li> <li>Within the lab, identify the solute and solvent in solutions created in laboratory investigation</li> <li>Within the lab, compare the weight of a mixture to the weight of its parts</li> </ul>	
	9	<ul style="list-style-type: none"> <li>Compare a solution and mixture from the lab data collected in the 4 stations</li> <li>Investigate how sugar and salt differ in their conductivity of electricity by engaging in the online Phet simulations</li> </ul>	

Lesson	Day	Grade 5 Curriculum	MWEE Integration
	10	<p style="text-align: center;">↑</p> <ul style="list-style-type: none"> <li>Compare and contrast the properties of mixtures and solutions</li> <li>Investigate how sugar and salt differ in their conductivity of electricity by engaging in the online Phet simulations</li> </ul> <p style="text-align: center;"><b>YES</b></p>	
4	11	<ul style="list-style-type: none"> <li>Determine which scenarios given are a physical change or chemical change and justify their determination using evidence</li> <li>View various scenarios during an online lab simulation and make observations (qualitative data) to determine if the video segment show a physical or chemical change</li> </ul> <p style="text-align: center;"><b>YES - COMPACT INTO 2 OR 3 DAYS</b></p>	
	12		
	13		
	14		
5	15	<ul style="list-style-type: none"> <li>Investigate properties of chemical reactions.</li> <li>Measure volumes of solids and liquids, using scientific equipment, and compare them before and after a chemical reaction.</li> <li>Identify several chemical reactions they see and experience in their lives every day. Explain how their lives would be different without chemical reactions.</li> </ul>	
	16		
	17		
<b>MISA Review Lessons (MISA March 6-24?)</b>			
6	18	<ul style="list-style-type: none"> <li>Identify the 7 characteristics of life</li> <li>Determine whether a thing is living or nonliving using the characteristics of life</li> </ul>	
	19		
7	20	<ul style="list-style-type: none"> <li>Organize the levels seen in the natural world from atom to organism (levels of organization)</li> <li>Distinguish between unicellular and multicellular organisms based on their structures</li> </ul>	
	21		

Lesson	Day	Grade 5 Curriculum	MWEE Integration
		begin distinguishing them from plant, animal, unicellular and multicellular (f2f) <ul style="list-style-type: none"> <li>Organize the levels seen in the natural world from atom to organism (levels of organization)</li> </ul>	
8	22	<i>(Subject Review)</i>	
	23		
<b>MP3B Space Systems</b>			
9	24	<ul style="list-style-type: none"> <li>Explain what a solar system is</li> <li>Identify the parts of our solar system (Planet, Solar System, Universe, Galaxy)</li> <li>Explain why they need to learn about our solar system</li> <li>Categorize space objects based on their size or magnitude</li> </ul>	<b>Synthesis and Conclusions</b> <ul style="list-style-type: none"> <li>Develop action plan to sustain action project (if applicable)</li> <li>Synthesize results from action project and determine most valuable insights to be communicated</li> <li>Integrate communication task</li> <li>written</li> <li>presentation</li> <li>other</li> </ul>
10	25	<ul style="list-style-type: none"> <li>Identify our galaxy as The Milky Way</li> <li>Recognize that stars are like the Sun, some are smaller and some are larger</li> <li>Explain that stars differ in size and brightness due to their distance from the object/place from which they are being observed</li> </ul> <p style="text-align: center;"><b>YES - COMPACT INTO 1 DAY</b></p>	
	26		
11	27	<ul style="list-style-type: none"> <li>Identify the Sun as the Earth's closest star and the center of our solar system</li> <li>Explain how the size and brightness of the Sun is due to the relative distance to the Earth</li> <li>Explain how living things on Earth survive with the help of the sun's energy, heat and light.</li> </ul>	
14	28	<ul style="list-style-type: none"> <li>Explain why the inner planets are called terrestrial planets</li> <li>List the Inner Planets in their relative order from the Sun</li> <li>Describe important characteristics of each inner planet</li> </ul> <p style="text-align: center;"><b>YES - COMPACT INTO 1 DAY</b></p>	
	29		
16	30	<ul style="list-style-type: none"> <li>Define habitable zone or Goldilocks zone</li> <li>Identify 4 main properties of the Earth</li> </ul>	

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		that make it possible for life to survive. ("Habitable zone," made of rock, molten core and protective atmosphere)	
	31	<i>Assessment Day</i>	
	32	<i>Assessment Day</i>	
	33	<i>MISA</i>	
	34	<i>MISA</i>	
	35	<i>MISA</i>	
	36	<i>MISA</i>	
Number of MWEE days			7
<i>Marking Period 3 Ends March 31</i>			

# MWEE Focus

MP1		MP3	
MP1A Tehya EIE	MP1B Human Interactions on Earth	MP3A Properties of Matter	MP3B Space Systems
<b>Issue Definition</b>	<b>Outdoor Field Experiences Environmental Action Projects</b>	<b>Synthesis and Conclusions</b>	<b>Synthesis and Conclusions</b>
<ul style="list-style-type: none"> <li>• Develop understanding of a watershed</li> <li>• Develop understanding of the Chesapeake Bay Watershed, its proximity to the school and community, and its importance to the population that live within its borders</li> <li>• Develop understanding of a sub-watershed, the 14 sub-watersheds in Cecil County, and the local sub-watershed (sub-watershed in which the school is located)</li> <li>• Develop an understanding of how the Chesapeake Bay Watershed is connected to and affected by the local sub-watershed</li> <li>• Develop an understanding of how natural factors (e.g. invasive species, change in rainfall) and human factors (e.g. population, industry, agriculture, recreation) affect the local sub-watershed</li> </ul>	<ul style="list-style-type: none"> <li>• Develop secondary project questions</li> <li>• Conduct research</li> <li>• Read narrative resources</li> <li>• Investigate informational resources</li> <li>• Develop data collection tools appropriate for action project</li> <li>• Begin action project</li> <li>• Leverage partnership(s) with local resources and experts</li> </ul>	<ul style="list-style-type: none"> <li>• Complete/continue/revisit action project</li> <li>• Analyze outcomes</li> <li>• Develop conclusion</li> <li>• Develop questions stemming from action project</li> <li>• Develop path forward for action project or possible future action projects</li> </ul>	<ul style="list-style-type: none"> <li>• Develop action plan to sustain action project (if applicable)</li> <li>• Synthesize results from action project and determine most valuable insights to be communicated</li> <li>• Integrate communication task               <ul style="list-style-type: none"> <li>○ written</li> <li>○ presentation</li> <li>○ other</li> </ul> </li> </ul>

MP1		MP3	
<p>and the Chesapeake Bay Watershed</p> <ul style="list-style-type: none"> <li>• Explore the “health” of the local sub-watershed</li> <li>• Develop the Driving Question.</li> <li>• Develop a list of possible action projects</li> <li>• Select action project</li> <li>• Visit location(s) included in project</li> </ul>			

# KUDos

Lesson	MWEE Essential Element Focus	Know	Understand	Do
MP1-1/7	<ul style="list-style-type: none"> <li>Develop understanding of a watershed</li> <li>Develop understanding of the Chesapeake Bay Watershed, its proximity to the school and community, and its importance to the population that live within its borders</li> <li>Develop understanding of a sub-watershed, the 14 sub-watersheds in Cecil County, and the local sub-watershed (sub-watershed in which the school is located)</li> </ul>	<ul style="list-style-type: none"> <li>What the term <i>watershed</i> refers to</li> <li>The Chesapeake Bay is a major watershed in the United States</li> <li>Specific facts about the Chesapeake Bay Watershed</li> <li>What the term <i>sub-watershed</i> refers to</li> <li>There are 14 sub-watershed in Cecil County</li> <li>The sub-watershed in which your school is located</li> </ul>	<ul style="list-style-type: none"> <li>What a watershed is</li> <li>Why the Chesapeake Bay is considered a major watershed</li> <li>Why the Chesapeake Bay Watershed is so important</li> <li>What a sub-watershed is</li> <li>How sub-watersheds are connected to the Chesapeake Bay Watershed</li> <li>Everywhere (including every school) in Cecil County is located in a sub-watershed that flows into the Chesapeake Bay</li> </ul>	<ul style="list-style-type: none"> <li>Explain what a watershed is</li> <li>Identify the Chesapeake Bay as a major watershed</li> <li>Recall facts pertaining to the Chesapeake Bay Watershed</li> <li>Explain what a sub-watershed is</li> <li>Recall that there are 14 sub-watersheds in Cecil County</li> <li>Name the sub-watershed in which the school is located</li> </ul>
MP1-2/7	<ul style="list-style-type: none"> <li>Develop an understanding of how the Chesapeake Bay Watershed is connected to and affect by the local sub-watershed</li> <li>Develop an understanding of how natural factors (e.g. invasive species, change in rainfall) and human factors (e.g. population, industry, agriculture, recreation) affect the local sub-watershed and the Chesapeake Bay Watershed</li> <li>Explore the “health” of the local sub-watershed</li> </ul>	<ul style="list-style-type: none"> <li>All sub-watersheds in Cecil County flow into the Chesapeake Bay</li> <li>Because the local watershed and the Chesapeake Bay Watershed are interconnected, what happens in the local watershed affect the Chesapeake Bay</li> <li>There are many natural factors and human factors that affect the local watershed and the Chesapeake Bay Watershed</li> <li>There are ways to determine the health of the local sub-watershed</li> </ul>	<ul style="list-style-type: none"> <li>Even though it can't be seen, the water in the local sub-watershed will eventually flow to the Chesapeake Bay</li> <li>The Chesapeake Bay Watershed and the local sub-watersheds are interconnected and</li> <li>Natural factors (e.g. invasive species, change in rainfall) and human factors (e.g. population, industry, agriculture, recreation) affect the local sub-watershed and the Chesapeake Bay Watershed</li> </ul>	<ul style="list-style-type: none"> <li>Explain how water moves from one location to the Chesapeake Bay</li> <li>Explain how what happens locally (near the school) affects the Chesapeake Bay</li> <li>Explain natural and human factors that affect the local watershed and the Chesapeake Bay Watershed</li> <li>Name natural factors and human factors that affect the local watershed and the Chesapeake Bay Watershed</li> </ul>

Lesson	MWEE Essential Element Focus	Know	Understand	Do
			<ul style="list-style-type: none"> <li>Because it is connected to the Chesapeake Bay Watershed, it is important to understand the health of the local sub-watershed</li> </ul>	<ul style="list-style-type: none"> <li>Use tools to investigate the health of the local sub-watershed</li> </ul>
MP1-3/7	<ul style="list-style-type: none"> <li>Develop the Driving Question.</li> <li>Develop a list of possible action projects</li> <li>Visit location(s) included in project</li> </ul>	<ul style="list-style-type: none"> <li>What the term <i>Driving Question</i> means</li> <li>There are different ways people can positively affect the local sub-watershed</li> <li>What the term <i>action project</i> means</li> <li>There are different local places where an action project can happen</li> </ul>	<ul style="list-style-type: none"> <li>The importance of having a clear and focused Driving Question</li> <li>Positively affecting the local sub-watershed will positively affect the Chesapeake Bay Watershed</li> <li>Sometimes a planned action project is used to positively affect the local sub-watershed</li> <li>An action project must be doable and positive in its expected results</li> </ul>	<ul style="list-style-type: none"> <li>Develop a Driving Question</li> <li>Explore possible ways to positively affect the local sub-watershed</li> <li>Create a list of possible action projects</li> <li>Consider possible action projects</li> </ul>
MP1-4/7	<ul style="list-style-type: none"> <li>Select action project</li> <li>Develop secondary project questions</li> <li>Conduct research</li> <li>Leverage partnership(s) with local resources and experts</li> </ul>	<ul style="list-style-type: none"> <li>The action project selected</li> <li>What is the Driving Question and what are secondary questions that are connected to the Driving Question and the action project</li> <li>Conducting research is an important step in the action project</li> <li>There are resources that can be used to research and conduct the action project</li> </ul>	<ul style="list-style-type: none"> <li>It is important to be clear and specific when identifying an action project</li> <li>Along with the Driving Question, there are secondary questions that are important</li> <li>To create a successful action project it is important to fully understand the problem</li> <li>Successful action projects use many different resources to help understand the problem and to develop possible solutions</li> </ul>	<ul style="list-style-type: none"> <li>Select an action project</li> <li>Create secondary questions</li> <li>Research the problem and possible solutions</li> <li>Identify resources</li> <li>Use resources to better understand the problem and possible solutions</li> </ul>

Lesson	MWEE Essential Element Focus	Know	Understand	Do
MP1-5/7	<ul style="list-style-type: none"> <li>● Read narrative resources</li> <li>● Investigate informational resources</li> </ul>	<ul style="list-style-type: none"> <li>● There are various types of resources:               <ul style="list-style-type: none"> <li>○ informational resources</li> <li>○ narrative resources</li> <li>○ digital resources</li> <li>○ human resources</li> </ul> </li> <li>● Watershed problems happen everywhere</li> </ul>	<ul style="list-style-type: none"> <li>● Successful action projects included utilizing resources to build and understanding of the problem and possible solutions</li> <li>● Most local problems have similarly occurred elsewhere and studying those events will help with our action project</li> </ul>	<ul style="list-style-type: none"> <li>● Use various resources to research the problem and possible solutions</li> <li>● Examine how the local problem may exist elsewhere and how it was addressed</li> </ul>
MP1-6/7	<ul style="list-style-type: none"> <li>● Develop data collection tools appropriate for action project</li> </ul>	<ul style="list-style-type: none"> <li>● Data is collected in an action project</li> <li>● What data is important</li> </ul>	<ul style="list-style-type: none"> <li>● In order to determine how successful the action problem is, it is important to accurately collect data that demonstrates the effects of the action project</li> </ul>	<ul style="list-style-type: none"> <li>● Determine what data is important to collect</li> <li>● Create a data collection tool</li> </ul>
MP1-7/7	<ul style="list-style-type: none"> <li>● Begin action project</li> </ul>	<ul style="list-style-type: none"> <li>● What are the steps in conducting the action project</li> <li>● What tools and materials are needed</li> </ul>	<ul style="list-style-type: none"> <li>● Clearly planning the steps of the action project and the tools and materials needed will help the action project be successful</li> </ul>	<ul style="list-style-type: none"> <li>● Develop the steps of the project</li> <li>● List the tools and materials required</li> <li>● Conduct the action project</li> </ul>
MP3-1/7 MP3-2/7	<ul style="list-style-type: none"> <li>● Complete/continue/revisit action project</li> <li>● Analyze outcomes</li> <li>● Develop conclusion</li> </ul>	<ul style="list-style-type: none"> <li>● The “end” of the action project</li> <li>● What the collected data says about the effects of the action project</li> </ul>	<ul style="list-style-type: none"> <li>● It is important to complete the action project in order to determine the effect of the project</li> <li>● It is important to accurately analyze the data collected in an action project to understand the effects of the project</li> <li>● It is important to reach a conclusion about the action project using the data and referring to the Driving</li> </ul>	<ul style="list-style-type: none"> <li>● Identify when the end of the action project has been reached</li> <li>● Analyze data that has been collected</li> <li>● Develop a clear and complete conclusion about the results of the action project</li> </ul>

Lesson	MWEE Essential Element Focus	Know	Understand	Do
			Question and secondary questions	
MP3-3/7	<ul style="list-style-type: none"> <li>• Develop questions stemming from action project</li> <li>• Develop path forward for action project or possible future action projects</li> </ul>	<ul style="list-style-type: none"> <li>• Sometimes the results of an action project cause us to ask new questions</li> <li>• Sometimes these new questions make us think of new action projects</li> </ul>	<ul style="list-style-type: none"> <li>• In most cases the results of an action project cause us to make new connections and to ask new questions, such as: <ul style="list-style-type: none"> <li>○ what if we had done this?</li> <li>○ what if we had continued doing what we were doing?</li> <li>○ would what we did work in another location?</li> <li>○ would what we did work to solve a different problem?</li> </ul> </li> <li>• The questions raised in an action project create the opportunity to develop new Driving Questions and new action projects</li> </ul>	<ul style="list-style-type: none"> <li>• Brainstorm new questions stemming from the action project</li> <li>• Brainstorm new action projects that could be conducted based on the results of the original action project and the new questions it raised</li> </ul>
MP3-4/7 MP3-5/7	<ul style="list-style-type: none"> <li>• Develop action plan to sustain action project (if applicable)</li> <li>• Synthesize results from the action project and determine most valuable insights to be communicated</li> </ul>	<ul style="list-style-type: none"> <li>• Does this action project have an end or can it keep going?</li> <li>• What results should be shared?</li> <li>• Who should the results be shared with?</li> </ul>	<ul style="list-style-type: none"> <li>• Some projects don't have an end but should keep going to continue to produce positive results</li> <li>• It is important to carefully analyze the results from an action plan and how those results answer the Driving Question and the secondary questions</li> <li>• The important results of action projects should be shared with</li> </ul>	<ul style="list-style-type: none"> <li>• Develop action plan to sustain action project (if applicable)</li> <li>• Synthesize results from the action project and determine the most valuable insights to be communicated</li> <li>• Determine who to share the results with</li> </ul>

Lesson	MWEE Essential Element Focus	Know	Understand	Do
			<p>others who will benefit from the information and who might continue the work or start new action projects</p>	
<p>MP3-6/7</p> <p>MP3-7/7</p>	<ul style="list-style-type: none"> <li>● Integrate communication task <ul style="list-style-type: none"> <li>○ written</li> <li>○ presentation</li> <li>○ other</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● How to communicate information in different ways: <ul style="list-style-type: none"> <li>○ writing</li> <li>○ audio/video</li> <li>○ presentation</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● There are different ways to communicate information and it is important to select the ways that most effectively communicates the information</li> <li>● Communicating information sometimes depends on the audience</li> </ul>	<ul style="list-style-type: none"> <li>● Identify an appropriate and effective communication mode</li> <li>● Develop a communication product</li> </ul>