

MMS - MODULE OVERVIEW

Module Title_Spiraling Math & Science Standards of Practice

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Grade level(s): 6th, 7th, 8th

# of lessons:	Natural Resources _____ Renewable Energy _____
<p>Big Idea – Student Learning</p> <p>Our team is working to show how we can spiral and differentiate two math/science standards of practice in a series of lessons from 6th grade through 8th grade. Our standards of practice are M3 - Construct viable arguments and critique the reasoning of others and S7- Engage in argument from evidence.</p> <p>Students will complete activities and then write and/or present an argument based on the work they completed in the lessons. The focus of our module is the watershed with each lesson melding technology, math, and science coupled with the same two Standards of Practice.</p>	<p>Learning Targets – “I Can” Statements</p> <p><u>8th Grade</u></p> <p>I can...</p> <ol style="list-style-type: none"> 1. use more than one relative “Because Statement” with multiple representations (i.e. - table, graphs, pictures, written descriptions). 2. explicitly provide quantitative/qualitative observations with multiple variables to make “Because Statement stronger. 3. show a relationship between my observations to my conclusion. 4. use the Jane Schaffer model for written/verbal argument and incorporate the concrete details of my math/science.
<p>Prior Knowledge:</p> <ul style="list-style-type: none"> • Paragraph Writing • Concrete Detail (vocabulary term) • Map reading • Converting decimal to a percent 	<p><u>7th Grade</u></p> <p>I can..</p> <ol style="list-style-type: none"> 1. use one to two relative “Because Statements” with multiple representations (see above #1). 2. can use the data to strengthen my “Because

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	<p>Statements".</p> <ol style="list-style-type: none"> 3. connect my conclusion to my observations. 4. use the Jane Schaffer model for written/verbal argument and incorporate the concrete details of my math/science. <p><u>6th Grade</u></p> <p>I can</p> <ol style="list-style-type: none"> 1. use one to two relative "Because Statements" with multiple representations (see above #1). 2. use teacher directed concrete details (data) to make my "Because Statement" stronger 3. tie my conclusion back to my observation using my class discussion notes. 4. use the Jane Schaffer model for written/verbal argument and incorporate the concrete details of my math/science.
<p>How are STEM integrated?</p> <p>The MMS team created a unit on urban watershed concepts and storm water issues through an investigation of school buildings and grounds. Students will use mathematical concepts to quantify the scientific data. Students will watch a video, use online resources, and iPads to integrate technology. Final</p>	<p>Community/Place-based connections:</p> <p>Students will use the school campus to collect data on its watershed.</p>

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<p>project assessments will vary according to grade level.</p>	
<p>What will be some community benefits?</p> <p>We will explore our local watershed and have students make observations and suggestions on how to improve it.</p>	<p>STEM College/Career Connections:</p> <ul style="list-style-type: none"> • Students will participate in a presentation/dialog with from the California Fish and Wildlife, Park Rangers, Headwaters Group. • Students will ask questions regarding necessary qualifications for these careers. • Local stat/bio experts from the Federal Fish and Wildlife will provide information and historical and current data concerning two local rivers.
<p>Assessment: What evidence of learning will you gather across the module's implementation?</p> <ul style="list-style-type: none"> • Pre-Post Online Student Survey • Student work samples of data analysis. • Student written conclusions of their analysis. 	<p>General Outline of the Module:</p> <ul style="list-style-type: none"> • Pre Assessment Survey • Lesson 1: Seeing watersheds - building vocab.- begin lab journal to collect data for final project • Lesson 2: Color Me a Watershed Part 1 - area of land coverage. Continue collecting data and recording observations in lab journal. • Lesson 3: Color Me a Watershed Part 2 - volume of rain and runoff. Continue collecting data and recording observations in lab journal.

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	<ul style="list-style-type: none">• Lesson 4: Water Impairment - article of about how watersheds are impaired. Continue collecting data and recording observations in lab journal.• Lesson 5: Use water impairment article to write a summary argument as practice. Continue collecting data and recording observations in lab journal.• Lesson 6: Final Activity - look at historic and current data of local water flows and discuss human impact. Finish collecting data and recording observations in lab journal.• Post Assessment Survey and Project (make an argument and support it)
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