

Lisa Mozer, Ed.S. International Student Center, Science Team Professional Learning Project
Record of Content Sharing and & Technology Coaching

8th grade science content references and standards reflected on the Science Content Map available at
<http://lisamozer.pbworks.com/w/page/74189171/Science%20Introduction%20for%20English%20Learners>

Dates of Science Team meetings	Targeted Subject Units & Subject Challenges	Key Science Concepts & Key Language Acquisition Components & Learning Centers/Groups	Key Strategies for Understanding Science Concepts	Key Student Technology Integration & Pre/Post Assessment (online IDMS)	Key Teacher Technology Essentials After Action Comments A reflection of pedagogy practice - changes and implementation of curriculum instruction to advance student learning in science and technology use.
10/7	Units of Measurements & Scales	<p><i>Illustration & poster organizers</i> to summarize context of grams, liters, and meters (Lenz, Alley, & Schumaker, 1987)</p> <p>Students must be able to identify: beaker, graduated cylinder, meter stick and the triple beam balance</p> <p>Repetition of Out-Loud audio, student drills of vocabulary terms</p> <p>Drawing/cut-outs of measuring tools</p> <p>Writing sentences on the understanding of tool use</p> <p>out-of seat application of tool use (large groups)</p>	<p>Everything has size/volume and takes up space</p> <p>What is a meter stick? Use meters to measure height and length</p> <p>Do we need to know the height of the soda in the coke bottle? Hint: We measure the volume of liquids using liters.</p> <p>Is mass and weight the same?</p> <p>We can measure mass with grams</p> <p>Have tools: beakers, meter stick and triple beam balances available for lesson applications</p>	<p>Having completed much of this first unit our team is in discussion on quality of assessment and <i>Bloom's taxonomy</i> (what we are to assess) and data collection</p> <p>Prior to unit instruction, Science Team agreed to learn and use SchoolNet-IDMS</p> <p>Limiting Pre-Post test to 10 questions, three questions to high level thinking (synthesis) and the majority of the 10 test questions :comprehension, vocabulary and application</p>	<p>10/7/2014 (6th Period, 60min scheduled)</p> <p>In order to avoid total domination of the learning session, I implemented a type of round-table discussion at the start of our meeting (and at the closing) for each teacher to take three or four minutes to address any topic they are concerned about. This opportunity to speak on any topic likely lessens possible interference, as referenced by Knight (2007).</p> <p>This Instruction session on the use of the new ELMO document cameras was a brief introduction of camera set up and basic use, projection of document images onto a whiteboard.</p> <p>Much of the practical application use of the ELMO came from sporadic requests for needed assistance during classroom instruction, prior to this this PL meeting. The announcement and agreement to hold technology sessions spurred an increase in spontaneous requests for help with the use of this tool. At times -</p>

				<p>when I could fit in mini training sessions of 10 minutes or less.... Items out of focus or images that needed contrast adjustments were initially common... For today's meeting I shared practice tips to trouble shoot - tasks such as frozen images, use with the pen, erase tools, and saving images to files. This instructions on the use of ELMO during our first official training/sharing meeting took longer than scheduled (1hr 10 min), and ran slightly over into the period. The enthusiasm and engaged manner during the meeting was very positive. Teachers took instructions notes and asked for clarity and for me to repeat some steps, such as making the pin line larger/smaller, adjusting contrast of the image and projecting saved images.</p> <p>These meeting notes and content targets are shared with the administrators. As a <i>Title I</i> school, part of my team leadership responsibilities are to keep record of our meetings and the meeting agendas. I am using our planning period part of the instructional schedule/day for the needed PL - to address technology assistance needed by my new team members. It is practical for me to increase the input for the journal component as part of my record keeping for the Science Department. Thus, this documentation is part of the weekly department-journal to account for the required science department meetings, professional learning, and data initiatives. The format reflects my efforts to coach on content instruction initiatives, data collection, and technology integration in science instruction. My professional learning approach/method reflects the <i>sharing</i> application referenced by Knight (2007).</p>
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				<p>She is a close colleague and my technology sharing will take a more personal approach for these one-on-one sessions.</p> <p>10/12/2014 (1 hr)</p> <p>I prefer and enjoy content coaching with model lessons that require technology tasks as examples. Such task examples during collaboration gives each teacher the opportunity to be part of implemented changes. Professional learning in key science concepts and technology integration will gain acceptance when it makes a current task better or easier. I continue to get requests for assistance during class times. Example: the learning unit's conversion strategy (King Henry Doesn't Usually Drink Chocolate Milk) was scheduled as an <i>agenda topic</i> for our team meeting for next week, but again during the week I was called on by co-workers with questions on this instruction/learning strategy. Advocating for a group meeting... the three of met on Columbus Day (which was a teacher PL day county wide). During lunch (1 hr). I demonstrated the math unit conversion method, but due to the limitation of our time I used the promethean board and pen. I also Googled the subject and did find an animated video clip similar to the task instruction that I had shared. I suggested they have the video available on the student computers and have students in pairs watch the clip a few times, to gain understanding.</p> <p>I also explained that this unit curriculum and learning experience with measuring is relevant for a number of content units and the advancement of students' skills for measuring objects are needed</p>
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					in order for students to apply application, such as <i>compare and contrast</i> Baker, S., Gersten, R., & Scanlon, D. (2002).
10/13	<p>Matter (states) & Properties</p> <p>Clouds are mostly a liquid and visible Gases are invisible</p> <p>Key vocabulary terms:</p> <p>oxygen invisible mass dissolve condensation</p> <p>writi</p>	<p>Matter Changes (physical and chemical)</p> <p>How <i>space</i> and <i>volume</i> are related</p> <p>Introduce <i>atoms</i> with visual images and orbit diagram</p> <p>Introduce the formula for <i>water</i></p> <p>Allow students to share what they understand about H₂O... Extend what student may know about H₂O knowledge to several elements found on the periodic table</p> <p>Occasionally pause to have students copy instructional notes provided by teacher, and allow teacher to inquire student understanding, this also allows students to ask questions for the teacher.</p>	<p>The smallest grain of salt is made of a billion atoms</p> <p>Student spend time peering at salt grain via the microscope</p> <p><i>Student discovery:</i> as small as salt grains are atoms are even smaller</p> <p>demonstration suggestions: have beakers of water on display question what is evaporation Place a few drops of water on a paper towel leave out to illustrate further what evaporation is</p>	<p>Post Test Units of Measurements</p> <p>Pre-Test Simple Machines</p> <p>Student review units and measuring uses - using a Thermometer</p> <p>Have students volunteer or teacher can assign students to lead review of the microscope parts and functions using the ELMO camera and promethean board.</p> <p><i>The arm of the ELMO Camera can turn sidewise and record the class of an individual student.</i></p>	<p>10/13/2014 (1hr, 6th period)</p> <p>Teachers are using the promethean to project the PDF worksheet on the whiteboard and lead discussion on subject topic/content or assign students to use the promethean pen to fill in the close and blank sentences on the projected image, while asking the student to respond to question regarding subject/content.</p> <p>My larger concern this week was proving a <i>model lesson</i> that highlights what ELMO brings to the learning process for science. The lesson served as a <i>you-watch-me</i> type of approach (Knight 2007). This was a shared experience with me using ELMO during class instruction.</p> <p>This lab activity will be a short review on scales for my students - Students must be proficient in sizing matter, since ingredients/content for mixing, cooking, or for constructing objects for building... are real world practices...and learning should include both metric and American scales</p> <p>Both of my science team teachers have one planning period when I am in class with students. The two planning periods allowed me the opportunity to invite each teacher to my class to share and see my lesson model.</p>

					<p>The lesson <i>Unit of Degrees and the Thermometer</i> is very student hands-on. Each student is provided with a lab thermometer and varying cups of warm and cold water. Students watched my demonstration of the use of the thermometer using ELMO. Saving images of the cold and hot temperature readings made this a lesson that engaged each student - as they read their hot and cold temperature readings and referenced my images on the whiteboard..</p> <p>The <i>teacher lead</i> lesson on use of the degrees gave my <i>team teachers</i> lots of ideas on how ELMO tools can be part of learning daily...such as saving classroom images of performed tasks to make lesson reviews for later use.</p> <p>10/15/2015 (1hr, 5th period)</p> <p>Language Arts teacher - My colleague will retire in April and thus my sharing will cease at that time. Committing digital tool tasks to memory is not a key practice for any of us to some extent... and in reality she has instructed ESOL for some time without using much technology and proved to advanced student learning. Much of her teaching culture differs from my learned practice. I am humbled by her long time teaching experience and she energized my hope to reach retirement.</p>
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					<p>For this one-on-one session we reviewed the steps from the initial group work session (set up and pen tools). I encouraged her to use functions without looking at her notes for such tasks, such as saving images and naming folders to compile digital images. I also introduce using an online translator (she complained about not having enough Spanish dictionaries for students).</p> <p>I demonstrated how students can use online translators and enter key terms in student journal in their home language (to help student recall content understanding in English). A slower pace but very productive session.</p>
10/20	<p><i>Simple Machines</i></p> <p>May not translate to a student's first language, must show lots of images that are familiar to all students</p>	<p>Simple Machines and Forces to do Work</p> <p>Lever and fulcrum ...go together Lever is mistaken as Incline Plane...</p>	<p>Post-Test States of Matter</p> <p>Models: Student build simple machines from school items (milk carts, plastic spoon...</p>	<p><i>Modeling Blabberize</i></p> <p>Photo animation of student artifact and student explanation artifact (speaking)</p>	<p>10/21/2014 (1hr, 6th period)</p> <p>Training to use the interface for online assessments, the Instructional Data Management System (IDMS) will require additional time since it's a little more tedious than using the ELMO. We took a little over an hour on the steps for building the assessment. The product prompts should be easier to follow after more practice using the IDMS program. In addition to demonstrating how building the tests to align to standards is to be done, I also addressed edit questions for more specific standard goals - this session allowed me to share learning strategies for specific content tasks. We were able to better identify the learning priorities for the current classroom subject.</p> <p>IDMS training was tedious... In addition to technology training to use the online IDMS assessment tool, subject content will require</p>

				<p>more on-going learning/teaching of content objectives in order to align learning goals to assessment elements.</p> <p>Now that the pre-post-tests, can be implemented and facilitated to students, the data will make integrating differentiated instruction based on student performance more likely (Tomlinson and McTighe, 2006).</p> <p>11/7/2014</p> <p>Note: The school data coach, commented that our data was noticed and that we are ahead in starting our data investigation... will share this compliment with the team during our next team session. Our data effort aligns to our School Improvement (SIP) goals (and goals of the district) to improve student achievement (... <i>to make informed instructional decisions and deploy a standards-based curriculum to ensure consistent and rigorous instruction</i>).</p>
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References:

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