

Project Venture Lesson Plan Format




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| Name: | Shelley Shott and Julia Fischer | Title | Metric Measurement |
| Grade Level: | 6 | Subject Area(s): | Science and Math |
| School/District: | Kyrene | Time Frame: | 1-2 weeks |

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| SUMMARY: | <p>Brief description of lesson/unit.</p> <p>In this section of a unit on measurement, students will use their prior knowledge of metrics to complete a variety of different projects. The first is a multimedia presentation that explains many kinds of metric measurement, shows what the measurement looks like, and gives viewers metric word problems to solve. The second is where students will also be responsible for publishing a class cookbook with the measurement amounts in both measurement systems (the Metric and English systems), and finally students will create a web site with their favorite home recipes (again, shown using both measurement systems).</p> |
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| STANDARDS: | <p>Use AZ State Content and Technology Standards - Include only the standards and concepts that will be assessed using the reference # and description.</p> <p>URL: Technology: www.ade.state.az.us/standards/technology Other content areas: www.ade.state.az.us/standards/contentstandards.htm</p> <p style="text-align: center;">Mathematics</p> <p>5M-FS1. Use measurement in real-world situations. PO 3. Demonstrate ability to use measurement tools</p> <p>5M-E1. Estimate, make and use measurements (U.S. customary and metric) to describe and make comparisons PO 1. Measure length, volume and weight in both U.S. customary and metric units</p> <p>5M-E2. Select and use appropriate units and tools to measure to the degree of accuracy PO 3. Measure to the appropriate degree of accuracy PO 2. Solve problems using deductive reasoning</p> <p style="text-align: center;">Technology</p> <p>Standard 3: Technology productivity tools 3T-E1. Use formatting capabilities of technology tools for communicating and illustrating. 3T-E3. Publish and present information using technology tools</p> <p>Standard 4: Technology communication tools 4T-E1. Use technology tools for individual and collaborative writing, communication, and publishing activities to create curricular related products for audiences inside and outside the classroom 4T-E3. Collaboratively use telecommunications and online resources</p> <p>Standard 5: Technology research tools 5T-E1. Locate information from electronic resources</p> |
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| OUTCOMES: | <p>Kyrene Target Indicators (Please include reference numbers.) Ex. Technology 041.306 Cut, Copy, Past using Word Processing Software Language Arts 042.202 In final copy of student's own writing tasks, spell high frequency words correctly.</p> <p>Student Multimedia Presentation Objectives: The students will:</p> <ul style="list-style-type: none"> • Complete a complete PowerPoint presentation • Pre-determine output to help choose most appropriate color scheme • Utilize text special effects • Edit self-created or pre-determined color schemes • Edit slide layout/arrangement <p>Student Publishing Objectives: The students will:</p> <ul style="list-style-type: none"> • Design multi-column newsletters which include related graphics/pictures using age-appropriate software applications <p>Student Web Page Objectives: The students will:</p> <ul style="list-style-type: none"> • Design multi-linked web pages which include related graphics/pictures using age-appropriate software applications <p>Math Content: The students will:</p> <ul style="list-style-type: none"> • Perform mathematical operations using measurement units • Demonstrate an understanding of metric measurements <p>Convert measurement units between customary and metric systems</p> |
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| ASSESSMENTS: | <p>How will student learning be assessed? What criteria or rubric will be used to evaluate the lesson/unit?</p> <p>*Should align with state/district standards *If a file exists, please include name of the file *If available on a website, please include URL ex: 6+1 trait rubrics www.nwrel.org/eval/writing/definitions.html</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  news_rubric.doc </div> <div style="text-align: center;">  pp_assessment.doc </div> <div style="text-align: center;">  web_rubric.doc </div> </div> |
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| PRE-REQUISITE KNOWLEDGE: | <p>*Think about content area and technology pre-requisite knowledge</p> <p>Students should have knowledge of the metric system. It would be best to complete a variety of activities on the metric system to refresh them prior to starting this activity. The following web sites have lessons on metrics and measurement:</p> <p>http://ericir.syr.edu/Virtual/Lessons/Mathematics/Masurement/ - many metric lessons http://www.iit.edu/~smile/ma9415.html - centimeters and inches http://www.iit.edu/~smile/ma9604.html - temperature http://www.iit.edu/~smile/ma9513.html - Celsius to Fahrenheit http://www.iit.edu/~smile/ma9411.html - mass and weight http://www.col-ed.org/cur/math/math11.txt - smile metric style http://www.richmond.edu/~ed344/webunits/measurement/activities.html - measurement activities</p> <p>Students have a working knowledge of Microsoft Publisher . Students have a working knowledge of word processing skills. Students have a working knowledge of accessing Internet Explorer</p> |
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| LEARNING ENVIRONMENT: | <p>Briefly describe where the learning will take place and how students will interact with others.</p> <p>i.e. Whole group, mini computer lab setting</p> <p>The learning for this unit can be done in a variety of ways. Initially there is a whole group setting where students will be learning the concepts. The students will be entering the computer lab to complete the PowerPoint. Once you hit the computer part, if you have other information and centers that the students can rotate through and to, then this lesson can be completed in a mini-lab setting. It is totally up to the teacher as how this unit will be structured. Students will collaborate on both/all parts of the computer work, but they are responsible for their own information.</p> |
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Tools and Resources

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| NUMBER OF COMPUTERS: | <p>i.e.</p> <p><input type="checkbox"/> 5 computer</p> <p>or</p> <p><input type="checkbox"/> Lab setting</p> <p>Both of these are possible.</p> |
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| SOFTWARE: | <p>Multimedia (PowerPoint)</p> <p>Desktop Publishing (Publisher)</p> <p>E-mail software</p> <p>Image Processing</p> <p>Internet Web Browser</p> <p>Web Page Development</p> <p>Word Processing (Word)</p> |
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| PERIPHERALS: | <p>Digital Camera</p> <p>Printer</p> <p>Projection System</p> <p>Scanner</p> |
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| INTERNET URL'S: | <p><u>Food sites for the cookbook</u> http://yahooligans.com/Around the World/Food and Eating/Recipes and_Cooking/ - this site encompasses many of the sites listed below as well as many many more. Please visit this site for more resources. http://www.scoreone.com/kids_kitchen/ http://www.allrecipes.com/ http://www.asiarecipe.com/ http://www.barbequerecipe.com/ http://www.beatrice.ca/recipes/index.htm - this site gives metric equivalents http://www.bettycrocker.com/main.asp? http://www.ontheline.org.uk/explore/journey/uk/food.htm http://www.ontheline.org.uk/explore/journey/france/food.htm http://www.rice.edu/projects/topics/foods/christine/recipe-page.htm http://www.epicurious.com/e_eating/e02_kids/kidmain.html http://recipe.bhg.com/ http://www.eatchicken.com/</p> <p><u>Conversion calculators</u> – some sites that students can use to convert from one system to the other http://www.sciencemadesimple.com/conversions.html http://www.allmath.com/metric.asp http://tqjunior.thinkquest.org/3804/ http://www.worldwidemetric.com/metcal.htm http://www.french-property.com/ref/convert.htm http://rcmtravelsite.com/ta_ndx/java_lgh.htm - length only http://rcmtravelsite.com/ta_ndx/java_lqvol.htm - liquid measures http://rcmtravelsite.com/ta_ndx/java_wgt.htm - weight http://rcmtravelsite.com/ta_ndx/java_tem.htm - temperature</p> |
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| PRINTED MATERIALS: | <p>Please include file name and short description of printed material or URL Class set of all handouts, Guidelines, Student Rubrics, Student Instructions, Student examples of newsletters, web site and PowerPoint presentations . The examples and handouts are included in the folders called “student samples” and “teacher support materials” that are also on this CD</p> |
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| SUPPLIES: | <p>Pen or pencil, Note cards</p> |
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**RESEARCH
MATERIALS
- BOOKS:**

Library books about cooking
Personal recipes from home

OTHER:

Procedures

Provide information necessary for another teacher to replicate your lesson/unit.

Student Multimedia Presentation Procedures:

- Each table of 4 students is assigned different units of metric measurement. Within that table:
 - Student 1 gets millimeters and centimeters
 - Student 2 gets meters and kilometers
 - Student 3 gets grams and kilograms
 - Student 4 gets liters and degrees Celsius
- Once students receive their units of measurement they will need to use their notes and any other worksheets they may have from prior instruction so they can do the following: (See student sample PowerPoint and student directions for their PowerPoint for specifics and an example of the expectations. **PLEASE NOTE: THE STUDENT SAMPLE POWERPOINT SHOWS EXPECTATIONS BUT NOT ON ANY OF THE ASSIGNED TOPICS AS THAT WOULD GIVE THE STUDENTS WHO HAVE THE SAMPLE TOPIC AN UNFAIR ADVANTAGE OF SEEING THEIR TOPIC IN A COMPLETED FORM**).
 - They need to be able to explain and/or define their measurements
 - They need to include the mathematical written form with a conversion from a larger or smaller unit
 - They need to be able to come up with reasons why they need to know this measurement.
- Students will use the digital camera to take a picture of a minimum of 3 objects. They will need to measure these objects using their assigned metric measurements
- Students will write a problem that needs their assigned measurement to solve – they also need to calculate the answer as that will be on the following slide.
- Students will complete the PowerPoint presentation according to the attached student instructions – each student will complete their assigned slides on separate machines – they need to utilize text special effects, edit self-created or pre-determined color schemes, edit slide layout/arrangement and make sure they all match (or at least not clash) with the other slides that will be in their presentation
- When the students are finished with their individual portions of their presentation, as a group they will compete slides 1, 26 & 27 as a group (or these slides can be split up among the students)
- When all slides are complete, have students need to put all the slides together to make one entire PowerPoint presentation (see “Metric Madness Project” directions)
- Students can present these to:
 - Parents during conferences (they can teach their parents metrics!)
 - A younger class of students

Student Publishing Procedures (for those students who chose this option):

- Students will be completing a newsletter involving recipes, with the measurements for the ingredients written in both the Metric and the English measurement systems. In order for students to come up with both sets of figures, refer to the conversion web sites above for the students to use. (You may chose to do ethnic foods, particularly if you have a connection to world studies. Each group of 4 would have a different ethnicity).

- Assign 4 students to a newsletter. Each student will be assigned a different course to complete a meal
 - Have students decide who will be looking for recipes on the following
 - Appetizers
 - Soup OR Salad
 - Main Course
 - Dessert
- Once students have their assigned course direct them to a variety of Internet sites with the intention of finding a recipe for their course that they feel sounds interesting. See above for suggested Internet sites for recipes. This part is totally personal – this is food they would like to try, or in some cases, have tried
- Refer to the Student sample to see a completed newsletter. Each student should have a copy of the student instructions to follow to see what is required. You have 4 students work on one newsletter and there is a variety of ways to do this. You could have each student copy and paste onto a word document first. From the word document they can cut and paste together into the newsletter document. The other way is have each student work on the newsletter at a different time, depending on how you work your classroom so that is feasible.
- As a culminating event, you could choose some of these recipes and have the students prepare them in class using metric utensils (you could even have the students first measure with standard utensils and then transfer that amount to the metric utensil).

Student Web Page Procedures (for those students who chose this option):

- Students will be completing a class web site using Microsoft Publisher that displays their personal favorite recipes. Each recipe will have both the Metric and English system of measurement so that students from all over the world who log onto this site will be able to reproduce the recipes if they wish
- Have students bring in their favorite family recipes, or recipes they may cook themselves
- Organize the recipes into different categories. You could organize the recipes by course, by ethnicities, by barbeque, baking, etc.
- Have students that have recipes in the same categories work on one page together. Don't forget to have the students write the measurements for the ingredients written in both the Metric and the English measurement systems. Link all these pages to the home page. The teacher could work on the homepage, explaining what the web site is all about as OR this could be left for a couple honors students to complete.
- Have students browse the Internet (Yahooligans.com only) to find links to other recipe web sites. Include these on the bottom on the appropriate page

As a culminating event, you could choose some of these recipes and have the students prepare them in class using metric utensils (you could even have the students first measure with standard utensils and then transfer that amount to the metric utensil).

Modification for Differentiated Instruction

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| SPECIAL EDUCATION: | <p>(optional)</p> <p>For the Resource Student: Students receiving special education services are mainstreamed in the regular classroom. They receive modifications of assigned work in their identified areas when applicable. Modifications occur in both content and technology areas according to individual need. One such modification is a Publisher template, allowing for students with special needs to achieve success with the application and project. A PowerPoint tutorial could also be provided to guide students through. Students will have the opportunity to work individually or work in groups of 2. Students could be teamed up with a regular education student. Both models allow the student to select the working environment in which they will be the most successful.</p> <p>Examples of modification techniques include: extended computer use, extended time requirements for completion of assignments, use of a Publisher template, dictating information to a scribe, and individual teacher / instructional aide assistance.</p> |
| ESL: | <p>(optional)</p> |
| GIFTED: | <p>(optional)</p> <p>The higher performing student will be challenged with complexity within applications as well as given opportunities to analyze and synthesize their learning. The student will also be called on to enlist their leadership skills in the organization and focus of the group. Special interest areas will be open to the students for exploration and extension. Such extension would include correspondence with a mathematician/person living in a metric country, working on planning a guest speakers, completing the main homepage for the class web site as well as completing extensions to the class web site.</p> |