Math of the Mountains Lesson Plan Template

Directions: Please complete each section below with as much detail as possible.

Subject Area	**Math**
Grade Level	**5th**
Learning Objectives	**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to** • Describe practical situations where area and perimeter are appropriate measures to use, and justify their choices orally or in writing. • Identify whether the application of the concept of perimeter, area is appropriate for a given situation. • Identify equivalent measurements within the metric system for length: millimeters, centimeters, meters, and kilometers. • Solve problems involving measurement by selecting an appropriate measuring device and a U.S. Customary or metric unit of measure for length: part of an inches feet, yards, millimeters, centimeters, meters,
SOLs Addressed (please list whole standard and not SOL # only)	**5.8 The student will** a) find perimeter and area in standard units of measure; b) differentiate among perimeter and area to identify whether the application of the concept of perimeter and , area is appropriate for a given situation; c) identify equivalent measurements within the metric system; d) estimate and then measure to solve problems, using U.S. Customary and metric units; and e) choose an appropriate unit of measure for a given situation involving measurement using U.S. Customary and metric units.
Video/Technology Hardware/Software Needed	**For Class/Student:** Video https://www.youtube.com/watch?v=Tpy09HOkHyI
Materials Required	**U.S. and Metric rulers, Yardstick, Worksheet:** https://docs.google.com/document/d/15mu4U9wAQ2Q-CApGhp_2iC-WrH22NshcBMKOSLykp18/edit

Procedures/Activities	1. The teacher will recognize area as an attribute of plane figures and understand concepts of area measurement. a)A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. b)A plane figure, which can be covered without gaps or overlaps by n unit squares, is said to have an area of n square units. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). 2. The students will relate area to the operations of multiplication and addition. a) Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. b)Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. c) Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning. d) Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems. 3. Before the field trip students will master concepts and complete worksheet on measurement. They will take those concepts and use them on the field trip. 4. Students will take a field trip to Natural Tunnel to visit and see the raised gardens. 5. Students will measure and find the perimeter and area of the raised gardens at Natural Tunnel using US Customary and Metric rulers.
Content Assessment	Describe how you will measure whether or not the lesson objectives were met. Students who have a 70 percent or above will have mastered this lesson.
Teacher Notes: (Please provide any information that a teacher might need to know to complete this lesson)	Students will have a background on measurement before attending Natural Tunnel State Park. The teacher will provide students with U.S. Metric rulers to be used on the field trip

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