CMS Lesson Plan

Teacher: McQueen

Lesson Date: Week of November 17th

Subject: 8th Grade Mathematics

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| **GSE Assessment Limits/Standards:****MGSE8.G.6** Explain a proof of the Pythagorean Theorem and its converse. **MGSE8.G.7** Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. **MGSE8.G.8** Apply the Pythagorean Theorem to find the distance between two points in a coordinate system. **Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.** **MGSE8.G.9 Apply the formulas for the volume of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.** **Work with radicals and integer exponents.** **MGSE8.EE.2 Use square root and cube root symbols to represent solutions to equations. Recognize that x2 = p (where p is a positive rational number and lxl < 25) has 2 solutions and x3 = p (where p is a negative or positive rational number and lxl < 10) has one solution. Evaluate square roots of perfect squares < 625 and cube roots of perfect cubes > -1000 and < 1000.**   |  |
| **Lesson Objective/Learning Intention:** Students will **In this unit students will:*** + determine the relationship between the hypotenuse and legs of a right triangle;
	+ use deductive reasoning to prove the Pythagorean Theorem and its converse;
	+ apply the Pythagorean Theorem to determine unknown side lengths in right triangles;
	+ determine if a triangle is a right triangle, Pythagorean triple;
	+ apply the Pythagorean Theorem to find the distance between two points in a coordinate system; and
	+ solve problems involving the Pythagorean Theorem.
	+ Create Right triangles on a coordinate plane to find the distance between two points.
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| **TIME** | **INSTRUCTIONAL SEQUENCE** | **FORMATIVE ASSESSMENT** |
|  |  |  Note: A variety of formative assessments should be used at key points throughout the lesson. |
| 10min | **Get started/Drill/Do Now:** 1. The volume of a cube is 64 cm. What is the length of one side?
2. A square room has 2 foot by 2 foot square tiles comprising the floor. If the area is 576 square feet, what is the length of one side of the room?
3. 27 = 1/3 x + 3
 | ***Tuesday*** |
| 25min | **Whole Group Instruction:** Introduce volume of a cylinder. Students will take Cornell notes on this lesson by following sample examples and real world problems. |  |
| 10 min | **Independent practice:** Students will work on a few real world problems that are embedded within the PPT presentation. Students will be required to write the questions and provide and answer with explanation. Students will have the opportunity to use a calculator for this lesson. |  |
|  min | **Group Practice/Small Group Instruction:** Group practice will be tomorrow |  |
|  min | **Evaluate Understanding/Assessment:** Observation during independent practice. |  |
| 5 min | **Closing Activities/Summary/DLIQ:** Students will be asked a challenge question that references the lesson and building on the standard… ( hemisphere and how to solve it) |  |
|  | **Enrichment/Extension/Re-teaching/Accommodations:**  |  |

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| **Resources/Instructional Materials Needed:** * **PPT on Volume of a Cylinder**
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| **Notes:** |

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| **Structure** | **Instructional Strategies Used- Please highlight, bold, or underline** |
| Whole Group | -Anticipatory guides/sets -Book/author talks -Cornell Notes-Close Reading -Questioning the Author (QtA) -Question-Answer-Relationships (QAR)-Text annotation -Think aloud -Think/Pair/Share |
| Guided Practice/Small group | -Anticipatory guides/sets -Book/author talks -Cornell Notes-Close Reading -Literature Circles -Questioning the Author (QtA)-Question-Answer-Relationships (QAR) -Reading conferences -Reciprocal teaching-Strategy groups -Text annotation -Think aloud-Think/Pair/Share -Writing Conferences - Paint strip answers |
| Independent Practice | -Anticipatory guides/sets -Book/author talks -Cornell Notes-Close Reading -Literature Circles -Questioning the Author (QtA)-Question-Answer-Relationships (QAR) -Reading conferences -Reciprocal teaching-Strategy groups -Text annotation -Think aloud-Think/Pair/Share -Practice Problems - Right To Move |
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| **TIME** | **INSTRUCTIONAL SEQUENCE** | **FORMATIVE ASSESSMENT** |
|  |  |  Note: A variety of formative assessments should be used at key points throughout the lesson. |
| 15min | **Get started/Drill/Do Now:** Remediation of equations 1. m + 5 = -16
2. 2/5m + 3 = 2
3. Find the volume of the cylinder (can of soup) height is 100 cm and the radius is 60 cm
 | **Thursday** |
|  10 min | **Engage/Motivation:** Video from youtube… demonstration of Volume of a Cone and and Cylinder <https://www.youtube.com/watch?v=0ZACAU4SGyM> |  |
|  min | **Whole Group Instruction:** Whole group instruction took place on the previous day |  |
|  30 min | **Group Practice/Small Group Instruction:** Students will use the notes and examples from the previous day to practice more on how to find the volume of a cylinder. Students will work in small groups and be able to use a calculator for this practice. |  |
| 30 min | **Independent Practice:** Students will work though the same practice problems from volume of a cylinder to find the volume of a cone. Students will work independently to show mastery. |  |
|  min | **Evaluate Understanding/Assessment:** The evaluating understanding will happen when they answer the ticket out the door for the day (find the volume of a cylinder and finding the volume of a cone… with the same height and radius) |  |
| 5 min | **Closing Activities/Summary/DLIQ:** Students will summarize the process. |  |
|  | **Enrichment/Extension/Re-teaching/Accommodations:** *(How will my lesson satisfy the needs of all learners?)* |  |

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| **Resources/Instructional Materials Needed:** textbook, worksheet, and independent practices |
| **Notes:** Homework Independent Practice for Volume of a Cone and Volume of a Cylinder from the textbook pages 387 and 395 |

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| Independent Practice | -Anticipatory guides/sets -Book/author talks -Cornell Notes-Close Reading -Literature Circles -Questioning the Author (QtA)-Question-Answer-Relationships (QAR) -Reading conferences -Reciprocal teaching-Strategy groups -Text annotation -Think aloud-Think/Pair/Share -Writing Conferences - Right To Move |
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| **TIME** | **INSTRUCTIONAL SEQUENCE** | **FORMATIVE ASSESSMENT** |
|  |  |  Note: A variety of formative assessments should be used at key points throughout the lesson. |
| 15min | **Get started/Drill/Do Now:**  1. negative exponent2. Equation with fraction3. power to power $(3x^{4}y^{3})\^-2 $ | **Friday** |
|  5 min | **Engage/Motivation:** Video on finding the Volume of Spheres <https://www.youtube.com/watch?v=h4j8l3p22e8> students will take Cornell notes on what they observed from the video |  |
|  30 min | **Whole Group Instruction:** Teacher will lead problems as examples. Teacher will also provide formulas. |  |
|  min | **Group Practice/Small Group Instruction:**  |  |
| 30 min | **Independent Practice**: Students will be given a]several problems to work through to check for understaning. The teacher will go around and give students a T if they need to try again or an E if the got it correct.  | **T’s and E’s (T=try again E= Excellent)** |
|  min | **Evaluate Understanding/Assessment:** The teacher will be evaluating the students’ ability and understanding during T’s and E’s |  |
| 10min | **Closing Activities/Summary/DLIQ:** Students will explain why the volume of a cone is 1/3 of that of a cylinder  |  |
|  | **Enrichment/Extension/Re-teaching/Accommodations:** *(How will my lesson satisfy the needs of all learners?)* |  |

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| **Resources/Instructional Materials Needed:**  |
| **Notes:** Homework 369 #’s 1,2,3 |

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| Independent Practice | -Anticipatory guides/sets -Book/author talks -Cornell Notes-Close Reading -Literature Circles -Questioning the Author (QtA)-Question-Answer-Relationships (QAR) -Reading conferences -Reciprocal teaching-Strategy groups -Text annotation -Think aloud-Think/Pair/Share -T’s and E’s - Right To Move |