CMS Lesson Plan

Teacher: Feighner, Johnson, Noland, Rutledge, Boger, McQueen

Lesson Date: Week of October 26th – 30th

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 be able to explain the proof of the Pythagorean Theorem.  **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. | |

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| **TIME** | **INSTRUCTIONAL SEQUENCE** | **FORMATIVE ASSESSMENT** |
|  |  | Note: A variety of formative assessments should be used at key points throughout the lesson. |
| 10  min | **Get started/Drill/Do Now:**  Three-Dimensional Figures w/ Pythagorean Theorem (use sample problems from the green Common Core workbook p.141) | ***Monday*** |
| min | **Independent practice:** |  |
| 35 min | **Whole Group Instruction:** Students will practice more problems with the Pythagorean Theorem by working through the computer program problems from RCPS 8th Grade math group… Real world Pythagorean Theorem problems  <http://regentsprep.org/regents/math/algebra/at1/pracpyth.htm> |  |
| min | **Group Practice/Small Group Instruction:** |  |
| min | **Evaluate Understanding/Assessment:** |  |
| 5 min | **Closing Activities/Summary/DLIQ:** DLIQ |  |
|  | **Enrichment/Extension/Re-teaching/Accommodations:** |  |

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| **Resources/Instructional Materials Needed:**   * **Pythagorean Theorem word problems from the link above** * **Common Core workbook from the Media Center** |
| **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 -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. |
| 10  min | **Get started/Drill/Do Now:** Remediation of word problems ,use the graphic organizer provided by Mrs. Williamson as well as low performed questions from Benchmark #1   * Exponents …**(8x2y4)3** * equations with rational numbers… **½(4x + 2) = 2x + 1** * estimating square roots… square root of 123 | **Tuesday/Wednesday** |
| min | **Engage/Motivation** |  |
| min | **Whole Group Instruction:** |  |
| min | **Group Practice/Small Group Instruction:** |  |
| 60 min | **Independent Practice:** Students will work through 8 word problems using The Pythagorean Theorem. Students will work in stations, in groups of 4, but working in pairs. Students will solve the problems that match up with the pictures around the room. Students will rotate within the room, showing all of their work on the picture as well as their paper. |  |
| min | **Evaluate Understanding/Assessment:** |  |
| 5 min | **Closing Activities/Summary/DLIQ:** Students will complete the DLIQ in their math notebook. |  |
|  | **Enrichment/Extension/Re-teaching/Accommodations:** *(How will my lesson satisfy the needs of all learners?)* |  |

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| **Resources/Instructional Materials Needed:** Word Problems provided in folders |
| **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 -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. |
| 15  min | **Get started/Drill/Do Now:**  AVID Strategy – 4 Corners (Pythagorean Theorem Review) | **Thursday/ Friday** |
| 5 min | **Engage/Motivation: Students will watch a video from the online textbook on distance in the coordinate plane. Chapter 5, lesson 4, (tutor #2 – Mr. Hardesty)**  [**www.connected.mcgraw-hill.com**](http://www.connected.mcgraw-hill.com) |  |
| 30 min | **Whole Group Instruction:** Independent Practice p.367 |  |
| min | **Group Practice/Small Group Instruction:** |  |
| 35 min | **Independent Practice**: Drill and kill. Students will work though the extra practice problems on p.369 |  |
| 25 min | **Evaluate Understanding/Assessment:** Quiz – The Pythagorean Theorem |  |
| 5  min | **Closing Activities/Summary/DLIQ:** Students will complete the DLIQ in their math notebook. |  |
|  | **Enrichment/Extension/Re-teaching/Accommodations:** *(How will my lesson satisfy the needs of all learners?)* |  |

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| **Resources/Instructional Materials Needed:** Textbook pages 367 and 369 |
| **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 -Writing Conferences - Right To Move |