CMS Lesson Plan

Teacher: McQueen Lesson Date: September 9, 2015

Subject: Mathematics

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| **GSE Assessment Limits/Standards:****MGSE8.EE.1** Know and apply the properties of integer exponents to generate equivalent numerical expressions. **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.** **MGSE8.EE.3 Use numbers expressed in scientific notation to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3 × 108 and the population of the world as 7 × 109, and determine that the world population is more than 20 times larger.** **MGSE8.EE.4 Add, subtract, multiply and divide numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Understand scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g. use millimeters** **per year for seafloor spreading). Interpret scientific notation that has been generated by technology (e.g. calculators).** **Know that there are numbers that are not rational, and approximate them by rational numbers.** **MGSE8.NS.1** Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number. **MGSE8.NS.2 Use rational approximation of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line, and estimate the value of expressions (e.g., estimate π2to the nearest tenth*). For example, by truncating the decimal expansion of √2 (square root of 2), show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*** | **Wednesday** |
| **Lesson Objective/Learning Intention: Students will be able to work with and solve radicals and exponents.** |

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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:** remediation od multistep equations  |  |
| 25min | **Engage/Motivation:** Unit 2 pretest |  |
| 35 min | **Whole Group Instruction:** Note taking one Unit 2 vocabulary(cornell notes and flashcards) <http://www.pbslearningmedia.org/resource/mgbh.math.ns.approxsqroot/approximating-square-roots-of-nonperfect-squares/>  |  |
|  20 min | **Group Practice/Small Group Instruction:** (teacher-facilitated group discussion, student or teacher-led collaboration, student conferencing, re-teaching or intervention, writing process) Vocabulary practice while working with squares |  |
| 20 min | **Independent Practice**: *(individual practice, discussion, writing process.)*  |  |
|  min | **Evaluate Understanding/Assessment:** *(How will I know if students have achieved today’s objective?)*  |  |
| 5 min | **Closing Activities/Summary/DLIQ:** DLIQ |  |
|  | **Enrichment/Extension/Re-teaching/Accommodations:** *(How will my lesson satisfy the needs of all learners?)* |  |

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| **Resources/Instructional Materials Needed:** Pretest, power point |
| **Notes:** make flash cards of the first 15 perfect squares  |

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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 |
| 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 |

CMS Lesson Plan

Teacher: McQueen

Lesson Date: September 11th

Subject: Mathematics

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| **GSE Assessment Limits/Standards:** **MGSE8.EE.1** Know and apply the properties of integer exponents to generate equivalent numerical expressions. **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.** **MGSE8.EE.3 Use numbers expressed in scientific notation to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3 × 108 and the population of the world as 7 × 109, and determine that the world population is more than 20 times larger.** **MGSE8.EE.4 Add, subtract, multiply and divide numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Understand scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g. use millimeters** **per year for seafloor spreading). Interpret scientific notation that has been generated by technology (e.g. calculators).** **Know that there are numbers that are not rational, and approximate them by rational numbers.** **MGSE8.NS.1** Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number. **MGSE8.NS.2 Use rational approximation of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line, and estimate the value of expressions (e.g., estimate π2to the nearest tenth*). For example, by truncating the decimal expansion of √2 (square root of 2), show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*** | **Friday** |
| **Lesson Objective/Learning Intention:** *(What will my students KNOW by the end of the lesson? What will they DO to learn it?)* |

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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:** Estimation of radicals on a number line |  |
|  min | **Engage/Motivation:** (*How will student interest be sparked? Is there prior knowledge that should be tapped? Is there vocabulary that must be cleared? Is there brainstorming that student need to complete before the lesson begins?)* |  |
| 15 min | **Whole Group Instruction:** *introduce radicals in an equation* $x^{2}=144$  |  |
|  min | **Group Practice/Small Group Instruction:** (teacher-facilitated group discussion, student or teacher-led collaboration, student conferencing, re-teaching or intervention, writing process) |  |
| 50 min | **Independent Practice**: stations: 3 stations students stay in the station for 20 to solve their problems. Then they will get 10 minutes to plan on how to present their problems. Then they will present their questions to the rest of the groups.  |  |
| 15 min | **Evaluate Understanding/Assessment:** Short summative assesment |  |
|  min | **Closing Activities/Summary/DLIQ:** *(How will I tie up loose ends, reinforce/revisit the objective and connect the lesson to the unit?)*  |  |
|  | **Enrichment/Extension/Re-teaching/Accommodations:** *(How will my lesson satisfy the needs of all learners?)* |  |

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| **Resources/Instructional Materials Needed:** *(What do I need in order to teach the lesson?)* |
| **Notes:** |

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| **Structure** | **Instructional Strategies Used- Please highlight, bold, or underline** |
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| 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 |
| 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 |