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| **Grade Level**  9th | | **Teacher/Room**: LPAYNE/BTIPPENS 181 Week of: FEBRUARY 22-26 | | | |
| **Unit Vocabulary: MODULE 2-**  Arithmetic to Algebra- SEE ATTACHED | | | | | |
| **Instructional Strategies Used:** direct instruction, independent study, interactive instruction | | | | | |
| **Day 1** | **Day 2** | | **Day 3** | **Day 4** | **Day 5** |
| **Common Core Standard(s)**:  **MFAAA1**  **MFAAA2**  **See attached** | **Common Core Standard(s)**:  **MAFAA1**  **MFAAA2** | | **Common Core Standard(s)**:  **MFAAA1**  **MFAAA2** | **Common Core Standard(s)**:  **MFAAA1**  **MFAAA2** | **Common Core Standard(s)**:  **MFAAA1**  **MFAAA2** |
| **EQ Question:**  1.How can I apply properties of operations to generate equivalent expressions?  2. How can I use the area model to represent the distributive property? | **EQ Question:**  1.How can I combine algebraic expressions using addition, subtraction, and multiplication?  2.How can I translate verbal expressions into mathematical expressions given various contexts? | | **EQ Question:**  1.How can I evaluate formulas at specific values for the variables contained within the formulas?  2.How can I interpret and use the properties of exponents in numerical expressions? | **EQ Question:**  1.How can I use the symbols for cube and square roots to represent solutions to cube or square root equations?  2.How can I apply the Pythagorean Theorem to find the hypotenuse of a right triangle given the two legs? | **EQ Question:**  How can I apply the standards that I learned this week to model real world situations? |
| **Mini Lesson:**  Number talk  **Activating Strategies:**  Modeling distributive property and communitive property  **Lesson: 1. Combining like terms**  **2. Tiling task 1-10**  **Resource/Materials:**  Graph paper, task, examples | **Mini Lesson:**  Number talk  **Activating Strategies:**  Check homework  **Lesson:**  Combining like terms  Translating verbal expressions into mathematical expressions  **Resource/Materials:**  Task and examples | | **Mini Lesson:**  Number talk  **Activating Strategies:**  **Check homework**  **Lesson:**  Evaluating expressions  Evaluating formulas  Order of operations and Using exponents  **Resource/Materials:**  Task and examples | **Mini Lesson:**  Number talk  **Activating Strategies:**  **Check homework**  **Lesson:**  Find solutions to square root and cube root equations  Use the Pythagorean theorem to find the missing side of a triangle  **Resource/Materials:**  Task and examples | **Mini Lesson:**  Number talk  **Activating Strategies:**  Check homework  **Lesson:**  Review/ weekly test  **Resource/Materials:**  Review, test, |
| **Differentiation:**  *Content/Process/Product: groups*  *Grouping Strategy:*  *Assessment:TOD* | **Differentiation:**  *Content/Process/Product:*  *Grouping Strategy:*  *AssessmentTOD* | | **Differentiation:**  *Content/Process/Product:*  *Grouping Strategy:*  *Assessment:TOD* | **Differentiation:**  *Content/Process/Product:*  *Grouping Strategy:*  *Assessment:TOD* | **Differentiation:**  *Content/Process/Product:*  *Grouping Strategy:*  *Assessment:TOD* |
| **Assessment :**  **Weekly test** | **Assessment:**  **Weekly test** | | **Assessment:**  ***Weekly test*** | **Assessment:**  **Weekly test** | **Assessment:**  **Weekly test** |
| **Homework:**  Combining like terms ws  Tiling task | **Homework:**  Combining like terms ws  Translating verbal expressions ws | | **Homework:**  Order of operations ws  Evaluating expressions ws  Evaluating formulas ws | **Homework:**  Solving square/cube root equations ws  Pythagorean theorem ws | **Homework:**  none |

Resources and Reflective Notes:

**ESSENTIAL QUESTIONS**

 How can I apply properties of operations to generate equivalent expressions?

 How can I use the area model to represent the distributive property?

 How can I combine algebraic expressions using addition, subtraction, and multiplication?

 How can I translate verbal expressions into mathematical expressions given various contexts?

 How can I evaluate formulas at specific values for the variables contained within the formulas?

 How can I interpret and use the properties of exponents in numerical expressions?

 How can I use the symbols for cube and square roots to represent solutions to cube or square root equations?

 How can I apply the Pythagorean Theorem to find the hypotenuse of a right triangle given the two legs?

MODULE 2 VOCABULARY - Arithmetic to Algebra

Equivalent expressions

Distributive property

Algebraic expression

Numeric expression

Area Model

Commutative Property

Associative Property

Identity Properties

Inverse Operations

Variable

Formula

Square Number

Square Root

Pythagorean Theorem

Hypotenuse

Cubic Number

Cube Root

Rational Number

Irrational Number

Exponent

**STANDARDS FOR MATHEMATICAL CONTENT**

**Students will extend arithmetic operations to algebraic modeling.**

**MFAAA1. Students will generate and interpret equivalent numeric and algebraic expressions.**

a. Apply properties of operations emphasizing when the commutative property applies. (MGSE7.EE.1)

b. Use area models to represent the distributive property and develop understandings of addition and multiplication (all positive rational numbers should be included in the models). (MGSE3.MD.7)

c. Model numerical expressions (arrays) leading to the modeling of algebraic expressions. (MGSE7.EE.1,2; MGSE9-12.A.SSE.1,3)

d. Add, subtract, and multiply algebraic expressions. (MGSE6.EE.3, MGSE6.EE.4, MC7.EE.1, MGSE9-12.A.SSE.3)

e. Generate equivalent expressions using properties of operations and understand various representations within context. For example, distinguish multiplicative comparison from additive comparison. Students should be able to explain the difference between “3 more” and “3 times”. (MGSE4.0A.2; MGSE6.EE.3, MGSE7.EE.1, 2, MGSE9-12.A.SSE.3)

f. Evaluate formulas at specific values for variables. For example, use formulas such as

A = l x w and find the area given the values for the length and width. (MGSE6.EE.2)

**MFAAA2. Students will interpret and use the properties of exponents.**

a. Substitute numeric values into formulas containing exponents, interpreting units consistently. (MGSE6.EE.2, MGSE9-12.N.Q.1, MGSE9-12.A.SSE.1, MGSE9-12.N.RN.2)

b. Use properties of integer exponents to find equivalent numerical expressions. For example, 32 𝑥 3−5=3−3=133=127. (MGSE8.EE.1)

c. Evaluate square roots of perfect squares and cube roots of perfect cubes (MGSE8.EE.2)

d. Use square root and cube root symbols to represent solutions to equations of the form 𝑥2=𝑝 and 𝑥3=𝑝, where p is a positive rational number. (MGSE8.EE.2)

e. Use the Pythagorean Theorem to solve triangles based on real-world contexts (Limit to finding the hypotenuse given two legs). (MGSE8.G.7)