**Teacher(s):** Mrs. Breazeale (Ms. DeBLanc)  **Subject/Grade:** 7th /Grade Math **Week of: Oct 30, 2023**

**Domain:** Expressions & Equations **Lesson Plan Title:** Equations

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|  | **MATHEMATICS - Mississippi College and Career Readiness Standards for 7th Grade**  |
| **Numbers & Operations** | **7.NS. 1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.** |
| **Ratios & Proportions** | **7.RP Analyze proportional relationships and use them to solve real-world and mathematical problems.** |
| **Expressions & Equations** | **7.EE Solve real-life and mathematical problems using numerical and algebraic expressions and equations.****7.EE.1 Apply properties as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.****7.EE.2 Understand that rewriting an expression in different, yet equivalent, forms in a problem can show how the quantities in it are related.****7.EE.3 Write an expression from a real world context possibly involving sales tax, tip, discount, gratuity, markup, selling price, perimeter, area, and angle measures of a triangle. • Evaluate ...** |
| **Geometry** | **7.G Draw, construct, and describe geometrical figures and describe the relationships between them.**  |

**ESSENTIAL QUESTION(S):** How do I solve real-life and mathematical problems using numerical and algebraic expressions and equations?

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| **Date** | **Objective** | **Focus Question** | **I will…** |
| **10/30****M** | TSWBAT use the vocabulary words: tax, simple interest, markup, markdown, commission, gratuity, associative property, commutative property, and distributive property while presenting a poster they created with a partner or small group. | 1) How will I create a visual of a given mathematical vocabulary word to help my audience understand the meaning?2)How will I explain the word to my peers during my presentation so they will understand the word’s meaning? | * Create a visual of a given mathematical vocabulary word to help my audience understand the meaning?
* Explain the word to my peers during my presentation so they will understand the word’s meaning?
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| **10/31****T** | TSWBAT complete an iReady math lesson by taking notes on key vocabulary and at least three example problems with 80% accuracy by the end of the lesson. | How do mathematicians use iReady to enhance their mathematical skills? | Use iReady to enhance my mathematical skills. |
| **10/31****W** | TSWBAT examine, analyze, and correct their current mixed practice test (MPT) by reviewing resources provided by the teacher, consulting with peers, and/or asking the teacher for help with 100% accuracy by the end of the lesson. | How do mathematicians analyze and correct their graded tests in order to reflect on knowledge needed to master 7th grade math standards? | -Differentiate between silly mistakes and lack of knowledge.-In writing, explain the silly mistake and rework the problems that contain silly mistakes.-Use resources to help correct mistakes where mastery is not yet obtained. |
| **11/1****TH** | TBA | TBA based on MPT data. | TBA based on MPT data. |
| **11/2****F** | TSWBAT write equivalent expressions with percents while understanding the meaning of a discount and tax? | How will I write equivalent expressions with percents? | -Write equivalent expressions with percents.-Write expressions in different forms to better understand relationships within concepts. |

 **REMEDIATION & ENRICHMENT**

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| **Students** | **Skill(s) & Activity** |
| **P25** | **M -** Students will be pulled for 5-15 minutes by **Mrs. Breazeale**  for one-on-one instructions.**M** - **Ms. DeBlanc**  will work with a small group to provide more guided practice.. **W** - **Ms. DeBlanc** will invite individual students to her desk to discuss their most recent MPT and clear up any misconceptions and offer support.  |
| **Bubbles** | **W - Ms. DeBlanc**  or **Mrs. Breazeale** will invite individual students to her desk to discuss their most recent MPT and clear up any misconceptions and offer support.  |
| **T25** | **W - Mrs. Breazeale** will challenge students to teach the most missed question to a peer. |

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| **MONDAY\_ Oct 30, 2023****BELL RINGER:** TSW complete 4 division problems that include negative numbers. TTW review.**ANTICIPATORY SET****Hook/Real-World Connection:** Start the lesson with a real-world scenario such as calculating the total cost of buying multiple items at a store. Ask students to brainstorm how they would approach solving this problem. **Real World Connection:** Understanding how ratios and proportions work, will help you solve some real world problems easily. **Importance/Relevance**: Say, “Ratios are used to compare values. They tell us how much of one thing there is compared to another.”**TEACHER INPUT***The teacher will…** Explain to students that equations can be used to represent real-world situations and solve problems.
* Define what a two-step equation is: an equation that requires two operations to isolate the variable.
* Provide examples of two-step equations and explain the steps for solving them (e.g., 2x + 3 = 11).
* Introduce the equations 𝑥 + 𝑝 = 𝑞 and 𝑝𝑥 = 𝑞, explaining their format and meaning.
* Provide multiple examples of real-world problems and guide students through the process of solving them using the equations taught.
* Scaffold questioning from easier problems to more challenging ones.
* Anticipate the common misconception that addition and multiplication are not reversible operations.
* Set clear behavioral expectations for the work time, such as staying focused, asking questions, and participating actively.

**GUIDED PRACTICE:***The student will…** Solve a two-step equation on the whiteboard as a class, explaining each step.
* Have students solve similar equations on their individual chalkboards or paper.
* Set behavioral expectations for independent work time, such as working quietly, persisting through challenges, and seeking help when needed. Assign an independent practice worksheet that includes a variety of real-world problems involving equations of the form 𝑥 + 𝑝 = 𝑞 and 𝑝𝑥 = 𝑞. The worksheet should align with the objective and allow students to demonstrate mastery.

**INDEPENDENT PRACTICE:***The student will…** Complete a worksheet with a variety of two-step equations.
* TTW Circulate the classroom to provide assistance as needed.
* P25 - Extra guided practice solving two-step equations.
* Bubbles - Create their own real-world problem using equations of the form 𝑥 + 𝑝 = 𝑞 and 𝑝𝑥 = 𝑞. They should then solve the problem and explain their solution process.
* T25 - Think of their day to day tasks, and write a real-world examples of equations of the form 𝑥 + 𝑝 = 𝑞 and 𝑝𝑥 = 𝑞 in their daily lives. They should write down the equations and explain the context in which they are used.

**CLOSURE:** Summarize the high points of the lesson.**MATERIALS:** Individual chalkboards or paper for students, chalk or pencils, Two-step equation worksheets, Calculators**ASSESSMENT:** Students will complete a worksheet that includes various real-world problems involving equations of the form 𝑥 + 𝑝 = 𝑞 and 𝑝𝑥 = 𝑞. They will be required to solve the equations and provide an explanation of their solution process. |

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| **TUESDAY\_ Oct 31, 2023****MPT 2.4 will be given this morning.****WARM-UP/HOOK:** *The student will*  login to iReady. Write down the lesson title, class period, and date on the recording sheet. Take notes on lesson vocabulary and lesson goals.  **(5 minutes)****TEACHER INPUT: ( 5 minutes)***The teacher will …* * Remind students to take notes on lesson vocabulary and lesson goals.
* Review the requirements to receive help on the lesson quiz - all vocabulary with definitions must be written down, at least 3 examples recorded from the lesson, and I need to see evidence that the students attempted to work out the current problem on paper.

**INDEPENDENT PRACTICE: ( 35 minutes)***The student will …* * Listen and complete a lesson on their path to the best of their ability.
* Complete the lesson quiz with 80% or higher accuracy.

**STUDENT REFLECTION/EXIT TICKET:** *The student will* reflect on what they learned from the iReady lesson they just took based on their individual learning target. The teacher will use this data to determine which students need extra support.  **(5 minutes)****MATERIALS:**  notebook paper or “iReady Notes template,” computers, projector, exit tickets**ASSESSMENT(S**): Teacher observation, exit tickets, iReady lesson quiz results |

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| **WEDNESDAY\_ Nov 1, 2023****WARM-UP/HOOK:** *The student will* grab a data analysis sheet and a class set of Tuesday’s test. Write their name, date, etc. *The teacher* will pass back their Tuesday tests. **(5 minutes)****TEACHER INPUT: ( 2 minutes)***The teacher will …* * Direct student to mark an “X” on the questions that the students missed.
* Explain that they will use the class set of the test that includes “Teacher Notes” to rework the problems and/or explain what silly mistake they made.

**INDEPENDENT PRACTICE: ( 30 minutes)***The student will …* * Rework problems on their test paper.
* Justify why they missed certain problems.
* Compare their graded test to the teacher’s class set/guided notes and questions.
* Identify careless mistakes and correct them.
* Use the UNRAVEL test taking strategy for math for questions not understood.
* Use the videos under the topic “Helpful Videos” in Google classroom recommended by the teacher for each question not understood.
* Notify the teacher when they think they are finished for feedback/review.
* Staple data analysis sheet to the top of their test.
* Get it signed by their parents or guardian and return the following day

**Meanwhile…****TEACHER CONFERENCES:** The teacher will invite individual students to her desk to discuss their most recent MPT and clear up any misconceptions and offer support. **(30 minutes)****EARLY FINISHERS:** The student will get iReady or Math Prodigy and wait patiently to be called to the teacher’s desk to discuss the test and any misconceptions.**TEACHER INPUT: ( 10 minutes)***The teacher will …* * Review the most missed problems or take any questions the students have.
* Check over student work and provide feedback.
* Choose a student to staple the remainder of the student's paper.
* Explain that it is mandatory to bring their tests back signed by tomorrow.

**STUDENT REFLECTION/EXIT TICKET:** *The student will*  complete an exit ticket based on the most missed question(s). The teacher will use this data to determine which students need extra support.  **(5 minutes)****MATERIALS:**  graded Tuesday tests, test analysis sheets, stapler, staples, exit tickets**ASSESSMENT(S**): Teacher observation, exit tickets, Tuesday test |

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| **THURSDAY\_ Nov 2, 2023****To Be Announced based on the most recent MPT Math data.**

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| **Most Missed Standard(s)** | **Objective(s)** | **Activity** |
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| **FRIDAY\_ Nov 3, 2023****Lesson Duration: (50 minutes)****Printed Materials:** N/A**Materials:** calculators, scratch paper, RCC workbooks**Technology:** Promethean Board, Projector**Anticipatory Set:****Hook/Pre-Class:** Students will observe 4 expressions which are the same and which are different. Discuss.**Real/World Connection:** Say, “Life is full of problems. Many do not have easy solutions or no solution at all. Luckily with math, if you know a few basic concepts, mathematical problems can be the problems you encounter are easy to solve.**Importance/Relevance**: Say, “As you level up in your academic career, you need to know how to write expressions to match real-world mathematical problems. Today, we are going to practice just that.”**Teaching: Input: (~15 minutes)***The teacher will…** Present the EQ and FQ. Explain what they are expected to know at the end of the lesson.
* Pass out a copy of lesson 15: Writing Linear Expressions from the old RCC workbook.
* Read through the opening problem on page 140 with the help of students.
* Demonstrate how to draw a model to represent a sale price and tax.

**Teaching: Guided: (~15 minutes)***The teacher will…** On page 141, call on different students to help with the answers for 9-15.

**Teaching: Independent: (~5 minutes)***The student will…** Complete problems 16-18 and 1-5.

**Closure:** Review the high points of the lesson.**Assessment:**  Teacher observation and completed work. |

**MISSISSIPPI STATE STANDARDS ACROSS CURRICULUM**

**Math Standards**

**Numbers & Operations:**

**7.NS. 1** Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

**7.NS.1a** Describe situations in which opposite quantities combine and make 0.

**7.NS.1b** Understand that p + q is the number located a distance from the absolute value of q from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0. Interpret sums of rational numbers by describing real-world contexts.

**7.NS.1c** Understand subtraction of rational numbers as adding the additive inverse. Show that the distance between two rational numbers on a number line is the absolute value of their difference, and apply this principle in real-world contexts.

**7.NS.1d** Apply properties of operations as strategies to add and subtract rational numbers.

**7.NS.2** Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

**7.NS.2a** Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (-1)(-1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.

**7.NS.2b** Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then −p/q = (−p)/q = p/(−q). Interpret quotients of rational numbers by describing real-world contexts.

**7.NS.2c** Apply properties of operations as strategies to multiply and divide rational numbers.

**7.NS.2d** Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.

**7.NS.3** Solve real-world and mathematical problems involving the four operations with rational numbers.

**Ratios & Proportions:**

**7.RP** Analyze proportional relationships and use them to solve real-world and mathematical problems.

**7.RP.1** Compute unit rates associated with ratios and fractions, including ratios or lengths, areas and other quantities measured in like of different units.

**7.RP.2** Recognize and represent proportional relationships between quantities.

**7.RP.2a** Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.

**7.RP.2b**. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.

**7.RP.2c**. Represent proportional relationships by equations.

**7.RP.2d** . Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.

**Expressions & Equations:**

**7.EE** Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

**7.EE.1**  Apply properties as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

**7.EE.2** Understand that rewriting an expression in different, yet equivalent, forms in a problem can show how the quantities in it are related.

**7.EE.3** Write an expression from a real world context possibly involving sales tax, tip, discount, gratuity, markup, selling price, perimeter, area, and angle measures of a triangle. • Evaluate an expression given a value for the variable. • Translate a verbal expression into an algebraic expression. • Use manipulatives such as algebra tiles to factor expressions.

**Geometry:**

**7.G** Draw, construct, and describe geometrical figures and describe the relationships between them.