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| **TEAM Lesson Plan Template** | |
| Teacher: Dr. Jason DeVito | |
| Subject/Grade: Mathematics, Expressions and Equations, Grade 6 or 7 | |
| Lesson Title: Math Bingo | |
| **STANDARDS** | **Identify what you intend to teach.** State, Common Core, ACT College Readiness Standards and/or State Competencies; Enduring Understandings and Essential Questions. |
| **SMP2**. Reason abstractly and quantitatively.  **SMP4**. Model with mathematics  From **Literacy Skills for Mathematical Proficiency: “**Mathematically proficient students can listen critically. . . “  **6.EE.B.7** Solve real-world and mathematical problems by writing and solving one-step equations of the form *x* + *p* = *q* and *px* = *q* for cases in which *p*, *q,* and *x* are all nonnegative rational numbers.  **7.EE.B.3** Solve multi-step real-world and mathematical problems posed with positive and negative rational numbers presented in any form (whole numbers, fractions, and decimals). | |
| **OBJECTIVE(s)/Sub-Objectives** | **Connect prior learning to new learning.** Clear, Specific, Observable, Demanding, High Quality, Measurable, Aligned to Standard(s), and Integrated with other subjects, build on prior student knowledge  Student-Friendly (I Can Statement) |
| I can listen to problems involving fractions and understand them.  I can solve problems using fractions. | |
| [**MATERIALS AND RESOURCES**](http://www.utm.edu/departments/stem/_pdfs/MS_EE_Bingo_materials.pdf) | **Content-related:** Clearly supports lesson objective(s); rigorous & relevant; Incorporates multimedia & resources beyond the textbook. |
| **Activities & Materials**  \_x\_ Game For each student, a pencil, scratch paper, a custom Bingo card and a set of small pieces of paper numbered 1-25; A set of question cards. [*Note: These are special BINGO cards. Every card has every number that may be called, so if a student correctly determines an answer of, for example, 2/3, then 2/3 will be on the student’s card.]*  \_x\_ Laptop/Computer; Projector ( only needed for modified game to project questions )  \_x\_ Small prizes such as candy or toys  \_x\_ Whiteboard/marker (only needed for modified game with class scribe to write equations)  **What if the technology is not working?** If a student needs to read cards rather than listen, prepare a set of cards without the answers (or simply fold the cards so that the answer is not visible from the front) and show that student the card as it is being read to other students.  **Routine for distributing materials.** Pass out sheets of numbers and have students cut them out. This can be done a day in advance. Pass out bingo cards. | |
| **ACCOMMODATIONS/ADAPTATIONS** | **Learning styles and interests.** Anticipate learning difficulties, regularly incorporate student interests & cultural heritage; differentiate instructional methods. |
| **Modifications/Plans for Diverse Learners**  **Differentiation**  **----- Content ----- Process -----Product ----- Tiered Assignments ----- Flexible Grouping**  **----- Learning Centers \_\_\_\_ Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Accommodations**  **\_\_\_ Preferential Seating**  **\_x\_\_ Extended Time** Read each question multiple times. Allow plenty of time between questions for students to solve each problem.  **\_\_\_ Small Group \_\_\_ Peer Tutoring**  **\_\_\_ Modified Assignments \_\_\_ Other**  **Early Finishers:** Students who find themselves waiting for other students between questions are encouraged to find at least three equivalent expressions for their answer, as fractions, decimals, percentages, and/or mixed numbers. For example ¾ = 9/12 = 0.75 = 75%. | |

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| **MOTIVATING STUDENTS/ANTICIPATORY SET** | **“Hook”: Engage students’ attention and focus on learning.** Personally meaningful and relevant. |
| Sing a few bars of “There was a farmer had a dog, and his name was Bingo, B-I-N-G-O, B-I-N-G-O, B-I-N-G-O and his name was Bingo.” | |
| **INSTRUCTIONAL PROCEDURES** | **Step-by-Step Procedures-Lesson Sequence: Basic to Complex.** Lesson includes visuals, modeling, logical sequencing and segmenting (beginning, middle, ending); essential information; concise communication; grouping strategies; differentiated instructional strategies to provide intervention & extension; seamless routines; varied instructional strategies; key concepts & ideas highlighted regularly. |
| ***Introductio*n**  We have studied equations involving the four arithmetic operations and rational numbers. For example, If x + 1/3 = 2, then x = 2 – 1/3 = 6/3 – 1/3 = 5/3. Today we will practice solving such equations in context, the context of how much pizza folks have eaten. You will have to listen carefully and convert the words to arithmetic to answer the questions.  **Motivating Students**  \_x\_ Game \_x\_ Review \_x\_ Verbal Reinforcement \_x\_ Small Rewards \_x\_ Relate to Real World  This activity uses the descriptions of real world scenarios to review equation solving. The review is done through the game of Bingo. Winners receive small prizes, and verbal encouragement is provided throughout the game.  **Presenting Instructional Content**  \_x\_ Game This entire activity is a review using the game of Bingo  ***Instructional strategies:***  **Modeling and Guided Practice *–*** Well before playing the game, distribute sheets of whole numbers 1-25 for students to cut out. After the introduction, select a student as the caller. Have the caller shuffle the question cards. Pass out the custom Bingo cards, one card per student. Have students get out their 1-25 number slips and place them in order so that they can find each one. Ensure that students have pencils and paper ready.  Explain that the goal is to cover five squares in a row, vertically, horizontally, or diagonally. When a participant has five squares covered in a row, the participant should call out “bingo.” Demonstrate with a card, and explain that the free space is considered covered already. If you get five in a row, yell “Bingo!”  Work one example: “If the caller says Billy ate two thirds of two pizzas; How much pizza did Billy eat? We would write (2/3)\*2 = 4/3. We would then find 4/3 on our card and mark it with the slip of paper showing number 1.”  Keep track of the time, and announce “Last round” about ten minutes before the end of the allotted time. The class will need time to finish the game, award the final prize, and turn in the Bingo cards for later use.  Show the caller how to read a question, without reading the answer. The caller will need to read each question several times. After reading each question, the caller should lay the card down in a grid pattern so that they stay in order. The caller should also mark the question’s answer on the Bingo Caller’s Card.  The game begins as follows:  The caller tells everyone to find slip of paper number 1. The caller pulls the first card from the deck and reads the question several times. If anyone asks, read the question again. After reading, the caller marks the answer on the caller’s card and lays the card down in a spot where the caller can find it later and know that it was the first question. Students who answer the question find the answer on their bingo cards and mark it with slip 1. The caller waits until the majority of students have either marked their card or have quit working.  The caller tells everyone to find slip of paper number 2. The caller pulls the second card from the deck and reads the question several times. If anyone asks, read the question again. After reading, the caller marks the answer on the caller’s card and lays the card down in a spot where the caller can find it later and know that it was the second question. Students who answer the question find the answer on their bingo cards and mark it with slip 2. The caller waits until the majority of students have either marked their card or have quit working.  The game continues in this way, always marking the cards with the correctly numbered slip and placing the question card where it can be counted later until someone says “Bingo!” It is now time to verify the Bingo.  Once Bingo is called, have the student who said “Bingo” read off the answers he or she got. The teacher and caller will check the caller’s records.   1. If one of the “Bingo” student’s answers does NOT match any of the answers the caller has, ask the “Bingo” student for the number on the slip of paper covering that answer. This tells you which question card has the discrepancy. The caller re-reads the question on the question card and the class works together with the teacher to figure out the correct answer. Once the correct answer is known, resume play. It is possible that a new student will announce “Bingo” at this point. In that case, resume verification at the beginning of this paragraph A. Otherwise, the caller reminds everyone which number to use and reads the next question. 2. If all of the “Bingo” students answers match the answers the caller has, then the Bingo student is declared a winner. That student gets a prize. Designate a new caller. The first caller becomes a player. Remove the number slips from all Bingo cards. Shuffle the deck of question cards and start again.   Approximately ten minutes before the end of the time allotted for Bingo, the Teacher announces “Last round.” Play continues until there is a winner for that round. Players then put away their number slips and pass in their bingo cards. The teacher stores the bingo cards and the question cards for re-use.      **Check for Understanding (CFU) –**  ***What am I doing for students that progress at different rates?*** Monitor student work. Ensure that the caller allows enough time for all students to find and mark the answer to some questions.  ***What do I do if they get it?*** If they get it, only play a couple of rounds, then move on to new material.  ***What do I do if they don’t get it?*** Consider having a class scribe. After the caller reads the question, the class works together as a whole group to help the scribe express the situation as an equation. Then students solve the equation individually to mark their bingo cards. The scribe would change after each round of the game. | |
| **QUESTIONING/THINKING/PROBLEM SOLVING (embedded throughout)** | **Balanced mix of question types.** Utilizes Blooms Taxonomy/Webb’s Depth of Knowledge; high frequency; purposeful & coherent; require active responses; balance based on volunteers/non-volunteers, ability, & gender; lead to further inquiry & self-directed learning.  **Implement four types of thinking (Analytical, Practical, Creative, & Research-based) & Teach/Reinforce problem-solving types**. Provide opportunities for students to generate ideas & alternatives; analyze, evaluate & explain information from multiple perspectives& viewpoints. |
| **Questioning**  **Knowledge:**  **Comprehension:**  If Billy has 1/5 of a pizza **more than** someone, is that addition or subtraction?  If Billy has 2 **times as much** pizza as someone, is that multiplication or addition?  **Application:**  What should we let a variable represent in this problem?  Can you draw a picture to help you answer the question?  Can you work backwards to answer the question?  **Analysis:**  What should we let a variable represent in this problem?  Is it possible that you need more than one variable in this problem?  Do we need a variable in this problem?  **Synthesis:**  **Evaluation:**  **Thinking**    \_x\_ **Practical** –The pizza questions are real-life scenarios  \_x\_ **Analytical** – Students must convert words to arithmetic to answer questions.    **Problem Solving**  \_\_x\_ **Abstraction** The goal is for students to decontextualize from the description of pizza to an equation, then use the equation to answer the question  **\_x\_\_ Identifying Relevant/Irrelevant Information** Students must use listening comprehension skills to identify relevant information | |

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| **GROUPING** | **Maximize student understanding & learning** Varied group composition (race, gender, ability, & age); clearly understood roles, responsibilities & group work expectations; accountability for group & individual work; student opportunities for goal setting, reflection & evaluation of learning. |
| * This activity is for the whole group with students working individually * One student is designated as the caller to read questions. * The caller and other students will receive verbal instructions and an example to begin the game so that each understands his or her role | |
| **ASSESSMENT** | **Formative and/or summative assessment.** A variety of assessments, including rubrics, measure achievement of objectives and informs instruction. |
| ***Assessments:***  **\_x\_\_ Questions/Answers** The Bingo verification process provides a formative assessment during this activity. If the Bingo students’ answers are correct, then the student understands the material.  **\_x\_\_Teacher Observation** If a student is not marking answers to questions, then that student probably does not understand the material and will benefit from individual instruction / RTI^2 activities. | |
| **CLOSURE** | **Reflection/Wrap Up.** Summarizing, reminding, reflecting, restarting, connecting. |
| * ***Review/Summary:*** Congratulate winners. Point out that students have reviewed how to solve equations involving rational numbers. Ask students if they found the verbal questions more or less challenging than written questions. * ***Preview for next lesson: link what they did to day with where they are going next.*** * ***Upcoming assignments: remind them of any upcoming assignments.***   **Follow-up Activities/Extension *These may be designed to create a longer or more intense lesson. For example, if the class is able to cover the material in a lesson much faster than expected, extensions may prove helpful. Extensions may also be useful in various parts of a lesson where the teacher (and class) decides they should spend more time on a skill or topic.***  ***Reflection: You must reflect on every lesson you teach.*** | |

**NOTES:**

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