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|  | **Mastery Charter – Shoemaker Campus: Weekly Lesson Plan-MATH** | | | | **Instructor: Neilson** | | | |
| **Course: Algebra I** | | | |
| **Week of: 1/3-1/6, 1/9-1/10** | | | |
|  | **Tuesday** | **Extra Period 1 Tuesday** | **Wednesday** | **Thursday** | | **Friday** | **Extra Period 2**  **Friday** | **Monday** |
| **PA Academic Standard Description** | **Inequalities** | **Inequalities** | **Inequalities** | **Inequalities** | | **Inequalities** | **Inequalities** | **Inequalities** |
| **Lesson Objective:**-3M: measurable, manageable, and most important next step on the path to college | SWBAT write inequalities in words and identify solutions to inequalities in words and by graphing  **Resources:** Textbook Section3-1: Graphing and Writing Inequalities | SWBAT solve and graph one and two step inequalities (12)  **Resources:** Textbook Section3-2: Solving Inequalities by Adding or Subtracting,  3-3: Solving Inequalities by Multiplying or Dividing and  3-4: Solving Two-Step and Multi-Step Inequalities | SWBAT solve and graph inequalities with variables on both sides (5)  **Resources:** Textbook Section3-5: Solving Inequalities with Variables on Both Sides | SWBAT solve and graph multi-step inequalities  **Resources:** Textbook Section3-4: Solving Two-Step and Multi-Step Inequalities | | SWBAT solve and graph compound inequalities involving “or” (15)  **Resources:** Textbook Section 3-6: Solving Compound Inequalities | SWBAT solve and graph compound inequalities involving “and” (7, 13)  **Resources:** Textbook Section3-6: Solving Compound Inequalities | SWBAT solve inequalities (review Consensus on solving all types of inequalities) (5, 7, 12, 13, 15) |
| **Objective Assessment:**  -What questions, problems, etc. will your students complete during IP, exit slips, sampling, etc. to demonstrate Mastery of the objective?  Objective and Assessment are 100% aligned. | Exit slip (4 questions plus one error analysis and an open-ended response) - give inequalities and have students write them in words. Have students graph them and then answer if certain numbers can be solutions to the inequality. Use textbook resources. | Exit (4 questions plus one error analysis and an open-ended response) - | Exit slip (4 questions plus one error analysis and an open-ended response) - | Exit slip created on infinite algebra (4 questions plus one error analysis and an open-ended response)- | | Exit slip – OER: give compound inequalities with “or”. Have students graph it and then answer if certain numbers can be solutions to the inequality. Include an error analysis and open-ended response. | Exit slip created on infinite algebra – give compound inequalities with “and”. Have students graph it and then answer if certain numbers can be solutions to the inequality. Include  one error analysis and an open-ended response. | Exit slip created on infinite algebra – OER that gives a multi-step inequality that students must solve, write it in words, graph it, and then answer if a certain number can be solutions to the inequality. |
| **Anticipated Misunderstandings**  -What parts of the lesson do you expect students to be confused about?  - How will you use instruction to prevent these? | I anticipate students will have trouble shading the number line in the correct direction and knowing when to shade with an open or closed dot. Emphasize shading in the direction the greater than or less than symbol is pointing and use an open dot when there is no equal to sign and the closed dot when there is an equal to sign. | I anticipate that students will have trouble knowing which way to shade when the variable ends up on the right side of the inequality. I will emphasize reversing the answer so that the variable is always on the left.  I anticipate that students will have difficulty remembering when to reverse the order of the less than and greater than sign. Emphasize reversing the sign when multiplying or dividing BY a negative. | I anticipate that students will have trouble knowing which way to shade when the variable ends up on the right side of the inequality. I will emphasize reversing the answer so that the variable is always on the left.  I anticipate that students will have difficulty remembering when to reverse the order of the less than and greater than sign. Emphasize reversing the sign when multiplying or dividing BY a negative. | I anticipate that students will have trouble knowing which way to shade when the variable ends up on the right side of the inequality. I will emphasize reversing the answer so that the variable is always on the left.  I anticipate that students will have difficulty remembering when to reverse the order of the less than and greater than sign. Emphasize reversing the sign when multiplying or dividing BY a negative. | | I anticipate that students will have trouble knowing which way to shade when the variable ends up on the right side of the inequality. I will emphasize reversing the answer so that the variable is always on the left. I also anticipate that students may have trouble remembering when to shade with an open or closed dot, especially when one inequality has an equal sign and the other does not. I will emphasize looking at each inequality separately and using an open dot when there is no equal to sign and the closed dot when there is an equal to sign. | I anticipate that students will have difficulty separating the inequality. I will emphasize separating the inequality FIRST before solving either inequality. I also anticipate that students will have trouble knowing which way to shade when the variable ends up on the right side of the inequality. I will emphasize reversing the answer so that the variable is always on the left. I also anticipate that students may have trouble remembering when to shade with an open or closed dot, especially when one inequality has an equal sign and the other does not. I will emphasize looking at each inequality separately and using an open dot when there is no equal to sign and the closed dot when there is an equal to sign. | I anticipate students will have trouble shading the number line in the correct direction and knowing when to shade with an open or closed dot. Emphasize shading in the direction the greater than or less than symbol is pointing and use an open dot when there is no equal to sign and the closed dot when there is an equal to sign. |
| **Do Now:**  -List specific prompt, problems, or exercises. | Spiral Review | Spiral Review | Spiral Review | Spiral Review | | Spiral Review | Spiral Review | What are your biggest strengths when it comes to solving and graphing inequalities? What are biggest challenges? |
| **Instructional Cycle:**  **Direct Instruction:** -Describe how you will model process, product and thinking  **Guided Practice:** -Describe what you will be doing and what the students will be doing  **Independent Practice:** -Describe what the students will be doing and how you will confirm student understanding. | **Direct Instruction:**  Students will copy into notes:  Inequalities  Inequality – a statement formed by placing an inequality symbol, such as < or ˃, between 2 expressions  Students will make a box with 4 sections for less than, less than or equal to, greater than, greater than or equal to with an example and showing students how to shade.  Teacher will explain solutions to inequalities to students using examples emphasizing the following points:  The graph of an inequality – the set of points on a number line that represent ALL SOLUTIONS of the inequality. If the number is shaded, then it is in the set and therefore IS a solution to the inequality  Teacher will complete example 1 100% and will model thinking aloud of how to solve the inequality. Students will copy what teacher does on the board on their papers.  **Guided Practice:**  WS: give an inequality and have students write it in words. Have students graph it and then answer if certain numbers can be solutions to the inequality.  Teacher will cold call on students to answer questions, always allowing wait time for all students to think about next steps.  Students will complete final example 100% independently.  **Independent Practice:**  Students will complete exit slip 100% silently and independently. Teacher will circulate to monitor student progress. | **Direct Instruction:**  Students will copy into notes: Inequalities: Multiplying or Dividing BY a negative  When multiplying or dividing BY a negative number, reverse the inequality symbol:  EX: -4x > 32 or y/-5 < 2  Non examples: 4x > -32 or y/5 < -2  Teacher will complete example 1 100% and will model thinking aloud of how to solve the inequality. Students will copy what teacher does on the board on their papers.  **Guided Practice:**  WS– add a section to each question where students have to prove if a number is a solution to the inequality  Teacher will cold call students to answer questions, always allowing wait time for all students to think about next steps.  Students will complete final example 100% independently.  **Independent Practice:**  Students will participate in Pair Classwork:   * 5 min of independent work * 5 min to consult with partner * 2 pairs will be selected to present on problem each   Students will complete exit slip 100% silently and independently. Teacher will circulate to monitor student progress. | **Direct Instruction:**  Teacher will complete example 1 100% and will model thinking aloud of how to solve the inequality. Students will copy what teacher does on the board on their papers.  **Guided Practice:**  WS– add a section to each question where students have to prove if a number is a solution to the inequality  Teacher will cold call students to answer questions, always allowing wait time for all students to think about next steps.  Students will complete final example 100% independently.  **Independent Practice:**  Students will participate in Pair Classwork:   * 5 min of independent work * 5 min to consult with partner * 2 pairs will be selected to present on problem each   Students will complete exit slip 100% silently and independently. Teacher will circulate to monitor student progress. | **Direct Instruction:**  Teacher will complete example 1 100% and will model thinking aloud of how to solve the inequality. Students will copy what teacher does on the board on their papers.  **Guided Practice:**  WS created on infinite algebra – add a section to each question where students have to prove if a number is a solution to the inequality  Teacher will cold call students to answer questions, always allowing wait time for all students to think about next steps.  Students will complete final example 100% independently.  **Independent Practice:**  Students will complete exit slip 100% silently and independently. Teacher will circulate to monitor student progress. | | **Direct Instruction:**  Students will copy into notes: Compound Inequalities involving “or”  Compound inequality – 2 inequalities connected by the word “and” or the word “or”  “Or” inequalities should ALWAYS result in shading the ENDS of the number line because the solution only has to be true for ONE of the inequalities  Teacher will complete example 1 100% and will model thinking aloud of how to solve the inequality. Students will copy what teacher does on the board on their papers.  **Guided Practice:**  WS: give a compound inequality with “or”. Have students graph it and then answer if certain numbers can be solutions to the inequality.  Teacher will cold call on students to answer questions, always allowing wait time for all students to think about next steps.  Students will complete final example 100% independently.  **Independent Practice:**  Students will complete independent practice and exit slip 100% silently and independently.  Teacher will circulate to monitor student progress. | **Direct Instruction:**  Students will copy into notes: Compound Inequalities involving “and”  “AND” inequalities should ALWAYS result in shading the MIDDLE of the number line because the solution should be true for BOTH inequalities  Key HINT: separate the inequality into 2 inequalities and then solve.  EX: -1 < x + 3 < 7  Teacher will complete example 1 100% and will model thinking aloud of how to solve the inequality using the key hint. Students will copy what teacher does on the board on their papers.  **Guided Practice:**  WS: give a compound inequality with “and”. Have students graph it and then answer if certain numbers can be solutions to the inequality.  Teacher will cold call on students to answer questions, always allowing wait time for all students to think about next steps.  Students will complete final example 100% independently.  **Independent Practice:**  Students will complete independent practice and exit slip 100% silently and independently.  Teacher will circulate to monitor student progress. | **Direct Instruction:**  Teacher will review instructions for Consensus:   1. Teacher assigns topic or question(mixture of solving inequalities with 2-step, multi-step, variables on both sides, “or”, “and”) 2. Students silently and privately write down their answers 3. When all team members have answered, team members discuss and come up with a consensus 4. One team member writes the consensus answer on the whiteboard 5. One team member holds up whiteboard when teacher says 3,2,1 Roll ’em   **Guided Practice:**  Teacher will call on students to repeat instructions step by step.  Students take 30 seconds to form teams of four with classmates sitting directly behind them.  Once teams are formed, Consensus begins.    **Independent Practice:**  Students will complete exit slip 100% silently and independently.  Teacher will circulate to monitor student progress. |
| **Homework:** include new and spiraled content | WS- include error analysis | WS– included error analysis | WS created on infinite algebra - include error analysis | WS created on infinite algebra - include error analysis | | WS created on infinite algebra - include error analysis | WS created on infinite algebra - include error analysis | WS created on infinite algebra - include error analysis |

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|  | **Tuesday** |
| **PA Academic Standard Description** | **Inequalities** |
| **Lesson Objective:**-3M: measurable, manageable, and most important next step on the path to college | SWBAT demonstrate mastery of solving inequalities by earning ≥ 80% on weekly test #1 (5, 7, 12, 13, 15) |
| **Objective Assessment:**  -What questions, problems, etc. will your students complete during IP, exit slips, sampling, etc. to demonstrate Mastery of the objective?  Objective and Assessment are 100% aligned. |  |
| **Anticipated Misunderstandings**  -What parts of the lesson do you expect students to be confused about?  - How will you use instruction to prevent these? |  |
| **Do Now:**  -List specific prompt, problems, or exercises. | Spiral Review |
| **Instructional Cycle:**  **Direct Instruction:** -Describe how you will model process, product and thinking  **Guided Practice:** -Describe what you will be doing and what the students will be doing  **Independent Practice:** -Describe what the students will be doing and how you will confirm student understanding. |  |
| **Homework:** include new and spiraled content |  |

**Activity for any time remaining:**

Each student will be given an index card. One side of the index card has an inequality written using symbols and the other side has its written equivalent using words. When the teacher says go:

1. Students will pair up and the first student will show their partner the side of the index the card with the inequality written in symbols
2. The second student will read the inequality out loud
3. If the second student reads the inequality correctly(matching the words written on the other side of the index card), then students switch roles. If not, then the first student coaches the second until they read the inequality correctly
4. Students switch cards and switch partners