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| **Subject: Integrated Algebra Unit: Two** |
| **Unit Topic and Length:****Relationships Between Quantities and Reasoning with** **Equations and Inequalities** **(25 days)** |
| **Common Core Learning Standards:** **A‐REI.1** Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.**A‐REI.3** Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. |
| **Big Ideas/Enduring Understandings:**Why it is important to be able to use 0modeling when solving word problems with equations.Knowing when a situation needs and equation and when it needs an inequality. | **Essential Questions:**What makes something a mathematical term?How do we translate written information into mathematical terms?What does it mean to balance an equation?What does it mean to solve an equation?What is the difference between an equation and an inequality? |

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| **Content:****Understand solving equations as a process of reasoning and explain the reasoning****Solve equations and inequalities in one variable****Creating equations and inequalities for given situations in a word problem and solving real world application problems** | **Skills:**Ability to identify the mathematical property (addition property of equality, distributive property, etc.) used at each step in the solution process as a means of justifying a step***Lesson 7 of Engage NY******IMP page 96 #7***Ability to analyze the structure of an equation to determine the sequence of steps that need to be applied to arrive at a solution Ability to accurately perform the steps needed to solve a linear equation/inequality***IMP page 90-91 (one step equation)******IMP page 92 (two step and multi step)******IMP page 93-96 (multi step equation w/ fraction)******Backtracking–to solve for a variable (AppendixB)******Lesson 12 – Exercise 4 – Engage NY***Use diagrams, tables and models to find solutions to unique problems. Constructing equations and inequalities from these models and using our knowledge of inverse operations to solve these real world problems.***Inequalities – Appendix C******Word problems equations and inequalities – Appendix C*** ***IMP page 299 – 303******Lesson 11- Problem set – Engage NY*** | **Days:** |
| **Assessment Evidence and Activities:**Pre and Post Tests (formative assessment and assessments for evidence of growth)QuizzesQuestioning and ObservationsDo Nows and Exit SlipsClass work and Homework |
| **Possible Support Strategies:**Use of manipulativesWord Walls and Individual GlossariesJournalsBack Tracking Technique demonstrated for solving equations |
| **Formative Assessment:**The assessments listed above will be used to identify students’ strengths and weaknesses.There will be constant adjustments and fine tuning of the curriculum delivery based on this analysis. Sharing student work, sharing best practice and planning next steps will be an integral part of common planning meetings. |
| **Final Performance Based Task:****Final Performance Based Task:**Problem solving activities will be a feature of the unit of work and will be embedded in the unit plan. The final Performance Based Task will feature students analyzing Regents Equation Solving Problems and justifying solutions as well as determining the reasoning behind the inclusion of distracters. This will culminate with them devising their own multiple choice question for class mates to attempt. They must include an explanation of all parts of their answer choices. This will demonstrate a conceptual understanding of both order of operations and solution justification.  |
| **Extension:**Differentiated column sheets for order of operations and evaluating like terms.Table logic for adding and subtracting integers and polynomial expressions.Differentiated column sheets for solving equations. |
| **Learning Plan & Activities:**The learning plan will incorporate work shop style lessons which will allow for student centered learning. Group work will be incorporated into various concepts with a focus on students learning collaboratively. There will be an emphasis on technique to enable students to solve skills based questions. This will be supported with problem solving exercises for all content to give students a conceptual understanding of the material. |
| **Resources:**Text book : Meaningful Math Algebra I Prentice Hall Mathematics Algebra IGraphing calculatorsAlgebra TilesSmart Board DemonstrationsProblem solving materials created by teachersEngage NY modules |