## UNIT 4 – EQUATIONS AND INEQUALITIES

| Established Goals: Standards | Transfer |
|---|---|
| **6.EE.5**  Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

**6.EE.6**  Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can | *Students will be able to:*

• Understand solving an equation or inequality as a process of answering a question: which values from a specified true? Use substitution to determine whether a given number in a specified set makes an equation or inequality tru

• Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; un unknown number, or, depending on the purpose at hand, any number in a specified set.

• Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ fo nonnegative rational numbers.

• Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematica form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagran |
| | **Meaning** |
| | ENDURING UNDERSTANDING / ESSENTIAL QUESTIONS |

| represent an unknown number, or, depending on the purpose at hand, any number in a specified set.<br><br>**6.EE.7** Solve real-world and mathematical problems by writing and solving equations of the form x + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers<br><br>**6.EE.8** Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form x > c or x < c have infinitely many solutions; represent solutions of such inequalities on number line diagrams. | • Recognize that inequalities have an infinite number of solutions where as an equation has a set value.<br>• Be able to use the properties of equality effectively.<br>• Use variables and open number sentences to represent problem situations. | • How many possible solutions can an equation or an inequality have and how can they be represented?<br>• How can variables help represent an unknown value? |
|---|---|---|
| | **Acquisition** | |
| | KNOWLEDGE | SKILLS |
| | *Students will know how to…* | *Students will be skilled at…* |

| | solve equations using inverse operations. | Students understand the use of variables in mathematical expressions. |
|---|---|---|
| | | They write expressions and equations that correspond to given situations, |
| | write and solve equations and inequalities to model real-world situations. | evaluate expressions, and use expressions and formulas to solve problems. |
| | | Students understand that expressions in different forms can be equivalent, and they |
| | | use the properties of operations to rewrite expressions in equivalent forms. |
| | | Students know that the solutions of an equation are the values of the variables that make the equation true. |
| | | Use properties of operations |
| | | maintaining the equality of both sides of an equation to solve simple one-step equations. |

| Vocabulary | Instruction and Pacing | |
|---|---|---|
| Equation, inequality, inverse operations, variable | **Equations** | **2 weeks** |
| | **Inequalities** | **2 weeks** |
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| | | |
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| Resources |
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| • Envisions Topic 1: lesson 3; Topic 2: lessons 1, 2, 3, 6, 7; Topic 3: lesson 8, 9 |
| • www.pearsonsuccessnet.com |
| • Games / Centers |
| • Study Island |
| • Guided / Independent Practice |
| • **Other Websites: Math-Aids.com, mathworksheetsland.com, www.k5learning.com, worksheetworks.com, commoncoresheets.com** |

| Differentiation and Accommodations |
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| Provide graphic organizers<br>Provide additional examples and opportunities for additional problems for repetition<br>Provide tutoring opportunities<br>Provide retesting opportunities after remediation (up to teacher and district discretion)<br>Teach for mastery not test<br>Teaching concepts in different modalities<br>Adjust pace and homework assignments |
| **ELL Modifications**<br>   &bull; |

| 21<sup>st</sup> Century Skills | Critical Thinking, Creative Thinking, Collaborating, Communicating, and Technology Literacy |
|---|---|
| **Instructional Strategies** | Fairfield School recognizes the importance of the varying methodologies that may be successfully employed by teachers within the classroom and, as a result, identifies a wide variety of possible instructional strategies that may be used effectively to support student achievement.  These may include, but not be limited to, strategies that fall into categories identified by the Framework for Teaching by Charlotte Danielson:<br>  &bull; Communicating with students<br>  &bull; Using questioning and discussion techniques<br>  &bull; Engaging students in learning<br>  &bull; Using assessment in instruction<br>  &bull; Demonstrating Flexibility and Responsiveness |
| **Interdisciplinary Connections** | |

| Common Misconceptions | Proper Conceptions |
|---|---|
| Students use equal sign when solving an inequality. | When solving an inequality, a greater than or less than symbol is used instead of an equal sign. |
| Students forget to flip the inequality symbol when multiplying or dividing by a negative. | When you multiply or divide by a negative |
| | |
| | |

| Performance Task |
|---|
| Jessica was the only winner of a 400-meter race.  She finished the race in 1.75 minutes.  Let "T" represent the finishing times, in minutes, of the other participants who ran the race. |
| Part 1) Using the variable defined above, write an inequality that represents all the possible finishing times, in minutes, of the other participants who |

**ran the race.**

**Part 2) Create a number line that can be used to accurately graph the solution to Part 1;**

**Part 3) Graph the solution to the inequality from Part 1 on the number line you created in Part 2.**

**Rubric**

**One point for every correct Part (1, 2, 3)**

# ASSESSMENTS

**Suggested Formative Assessment**

Problem of the Day

Lesson Quizzes

Exit Ticket

Anecdotal Records (Topic Observation Checklist)

**Suggested Summative Assessment**

Grade level developed Unit/Envisions Topic Tests

Ed-Connect Express Tests /State Unit Benchmark Assessment/Performance Task