

**MIAMI-DADE COUNTY PUBLIC SCHOOLS**  
**District Pacing Guide**

**M/J Mathematics 2**

**Course Code: 120504001**

**BIG IDEA 3: Develop an understanding of operations on all rational numbers and solving linear equations.**

**TOPIC II: Solving Linear Equations**

PACING		DATE(S)
Traditional	28 Days	09/22/10 to 10/29/10
Block	14 Days	09/22/10 to 10/29/10

NEXT GENERATION SUNSHINE STATE STANDARD(S)	ESSENTIAL CONTENT	OBJECTIVES	INSTRUCTIONAL TOOLS
<p><b>MA.7.A.3.3</b> Formulate and use different strategies to solve one-step and two-step linear equations, including equations with rational coefficients.</p> <p><b>MA.7.A.3.4</b> Use the properties of equality to represent an equation in a different way and to show that two equations are equivalent in a given context.</p>	<p>A. Number Properties</p> <ol style="list-style-type: none"> <li>1. Associative</li> <li>2. Commutative</li> <li>3. Identity</li> <li>4. Distributive</li> </ol> <p>B. Solve One-step equations</p> <ol style="list-style-type: none"> <li>1. Reflexive Property of Equality</li> <li>2. Symmetric Property of Equality</li> <li>3. Transitive Property of Equality</li> <li>4. Addition/Subtraction Property of Equality</li> <li>5. Multiplication/Division Property of Equality</li> </ol> <p>C. Solve Two-step equations</p> <ol style="list-style-type: none"> <li>1. Reflexive Property of Equality</li> <li>2. Symmetric Property of Equality</li> <li>3. Transitive Property of Equality</li> <li>4. Addition/Subtraction Property of Equality</li> <li>5. Multiplication/Division Property of Equality</li> </ol> <p>D. Real-World Applications</p> <ol style="list-style-type: none"> <li>1. Solve real-world problems using rational numbers</li> <li>2. Write linear equations to represent real world situations</li> </ol>	<ul style="list-style-type: none"> <li>• Identify the properties of equality</li> <li>• Students will identify the next step needed to solve a linear equation.</li> <li>• Students will use different strategies, including working backwards, to solve problems that can be represented as a one- or two-step linear equation.</li> <li>• Solve real-world problems using rational numbers</li> <li>• Determine if two equations have equivalent solutions</li> <li>• Use the commutative, associative, and/or distributive properties to determine if two equations are equivalent</li> <li>• Demonstrate the step-by-step solution to a one-step or two-step equation</li> <li>• Identify the Property of Equality used to simplify an equation or expression</li> <li>• Write and solve a linear equations based upon a real-world situations</li> <li>• Students will solve real-world problems or mathematical constructs, including equations and expressions.</li> </ul>	<p><b><u>Core Text Book:</u></b></p> <p><b><u>Vocabulary:</u></b> expressions, equations, variables, constant, coefficient, equivalent, properties</p> <p><b><u>Technology:</u></b> (See Page 3)</p> <ol style="list-style-type: none"> <li>1. BrainPop</li> <li>2. Gizmos</li> <li>3. Riverdeep</li> </ol> <p><b><u>Strategies:</u></b> Undo Operations, Hands-On Equations, Algebra Tiles, Versatiles, individual dry-erase boards, investigations/explorations, Guess and Check, Equation Wraps</p> <ul style="list-style-type: none"> <li>○ <b>ELL:</b></li> <li>○ <b>Enrichment</b></li> <li>○ <b>SPED:</b></li> </ul> <p><b><u>Activity Resources:</u></b></p> <ul style="list-style-type: none"> <li>○ See page 3 for activities list</li> </ul> <p><b><u>Performance Assessment:</u></b> (See page 3)</p> <ol style="list-style-type: none"> <li>1. My Best Work</li> <li>2. <a href="#">Equation Crunch (Equation Choice Board)</a></li> </ol>

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**NEXT GENERATION SUNSHINE STATE STANDARDS**

Grade 7

**BIG IDEA 3: Develop an understanding of operations on all rational numbers and solving linear equations.**

BENCHMARK CODE	BENCHMARK
<p style="text-align: center;"><b>MA.7.A.3.3</b></p> <p><i>Prerequisite for</i> MA.7.S.6.1, MA.8.A.1.1, &amp; MA.8.S.3.2.</p>	<p>Formulate and use different strategies to solve one-step and two-step linear equations, including equations with rational coefficients.</p> <p><i>Remarks/Examples:</i> <b>Example: It costs an initial fixed cost of \$2 plus an additional \$1.50 per mile to rent a taxi. Which equation represents the method for calculating the total cost of a taxi ride? What is the total cost for a 5-mile trip?</b></p> <p><i>Cognitive Complexity/Depth of Knowledge Rating: Moderate</i></p> <p><b>Content Limits for MA.7.A.3.3:</b></p> <ul style="list-style-type: none"> <li>• Items involving finding a solution should be limited to a single variable on one side of the equation.</li> <li>• Items identifying formulating an equation for a situation may involve two variables.</li> <li>• Items may not exceed two procedural steps and four operational steps.</li> <li>• Items may not include irrational coefficients.</li> <li>• Also assesses MA.7.A.5.2.</li> </ul>
<p style="text-align: center;"><b>MA.7.A.3.4</b></p> <p><b>Prior Knowledge</b> MA.6.A.3.5.</p>	<p>Use the properties of equality to represent an equation in a different way and to show that two equations are equivalent in a given context.</p> <p><i>Remarks/Examples:</i> Properties of equality explain the following results: - A balanced equation will remain balanced if you add, subtract, multiply or divide (excluding division by zero) both sides by the same number. - A quantity equivalent to another quantity can be substituted for it. Example 1: What is another way to express the following equation? <math>3x + 14 = x + 30</math> Example 2: Why is <math>2x + 4 = x + 6</math> the same as <math>2x = x + 2</math>?</p> <p><i>Cognitive Complexity/Depth of Knowledge Rating: Moderate</i></p> <p><b>Content Limits for MA.7.A.3.4:</b></p> <ul style="list-style-type: none"> <li>• Items may include up to three operations.</li> <li>• Equations (or expressions) used in items may include up to three operations.</li> <li>• Coefficients and constants used in multi-step equations (or expressions) must be integers.</li> <li>• Items that contain one-step equations may use fractions less than 1.</li> </ul>

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**Activity Resources**

1. [Learning Village](#)
2. [Properties of Real Numbers](#)
3. [Math.Com: Algebra Page \(Writing and Solving Equations\)](#)
4. [Equations Worksheet Generator](#)
5. [Algebra Four](#)

**BrainPop**

- [Associative Property](#)
- [Commutative Property](#)
- [Distributive Property](#)
- [Equations with Variables](#)
- [Two-Step Equations](#)

**Gizmos**

- [Using Algebraic Equations](#)
- [Modeling One-Step Equations Activity A.](#)
- [Modeling One-Step Equations Activity B](#)
- [Modeling and Solving Two-Step Equations](#)
- [Solving Equations with Decimals](#)
- [Solving Two-Step Equations](#)

**Performance Activities**

**My Best Work**

1. Create a portfolio of your best work.
2. Review all the work you have done during this unit. Choose one or more examples of your best pieces of work.
3. Write a paragraph about each piece. Be sure to address the following questions – what is the piece an example of? Why did you choose this piece to represent your best work? Why else did you choose it? What mathematics did you learn or gain confidence in? How would you improve the piece if you were to redo it?

**Performance Assessment**

**Equation Crunch (Equation Choice Board)**

An Equation Choice Board will allow students to tap into their multiple intelligences by providing them with an opportunity to perform a variety of activities and plenty of practice in solving linear equations.

1. First the students will determine if they want to work alone or with a partner.
2. Next, the students will solve some sample review equation given by the teacher (use manipulatives such as algebra tiles, if available)
3. Then the students will choose an activity/activities from the Equation Choice Board that you would like to do or as determined by the teacher.

**Assessments:**

The students will share/pair their Equation Boards with at least two other students in class or present it to the class.

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Date	Pacing Guide Benchmark(s)	Data Driven Benchmark(s)	Activities	Assessment(s)	Strategies
<p><b>Traditional:</b> 09/22/10 to 10/29/10</p> <p><b>Block:</b> 09/22/10 to 10/29/10</p>	<p><b>MA.7.A.3.3</b> Formulate and use different strategies to solve one-step and two-step linear equations, including equations with rational coefficients.</p> <p><b>MA.7.A.3.4</b> Use the properties of equality to represent an equation in a different way and to show that two equations are equivalent in a given context.</p>				