

# MP1b-Linear Equations

Content Area: **Math**  
Course(s): **Math 8 Algebra 1 Honors**  
Time Period: **Marking Period 1**  
Length: **MP1**  
Status: **Published**

## Essential Questions

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- Why is it helpful to represent the same mathematical idea in different ways?

## Big Ideas

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- Reason quantitatively and use units to solve problems.
- Create equations that describe numbers or relationships.
- Understand solving equations as a process of reasoning and explain the reasoning.
- Solve equations and inequalities in one variable.

## Enduring Understandings

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### Quantities

N.Q.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

N.Q.2 Define appropriate quantities for the purpose of descriptive modeling.

### Creating Equations

A.CED.1 [M] Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

A.CED.4 [M] Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law  $V = IR$  to highlight resistance  $R$ .

### Reasoning with Equations & Inequalities

A.REI.1 [M] 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 [M] Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

## **Mathematical Practices Focus**

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1. Make sense of problems and persevere in solving them. Lessons 0-1, 1-8, 2-4, 3-4, 4-5, 5-4, 6-4, 7-5, 8-8, 9-3, 10-5, 11-1, 12-4
2. Reason abstractly and quantitatively. Lessons 1-3, 2-1, 3-3, 4-1, 5-1, 6-5, 7-2, 8-5, 9-1, 10-3, 11-8, 12-2
3. Construct viable arguments and critique the reasoning of others. Lessons 1-3, 2-5, 3-5, 4-2, 5-5, 6-1, 7-4, 8-1, 9-2, 10-4, 11-2, 12-1
4. Model with mathematics. Lessons 1-1, 2-9, 3-2, 4-5, 5-1, 6-5, 7-6, 8-7, 9-7, 10-4, 11-7, 12-5
5. Use appropriate tools strategically. Lessons 1-7, 2-4, 3-2, 4-4, 5-6, 6-1, 7-5, 8-2, 9-6, 10-6, 11-8, 12-3
6. Attend to precision. Lessons 1-3, 2-8, 3-4, 4-2, 5-2, 6-6, 7-4, 8-9, 9-5, 10-1, 11-6, 12-2
7. Look for and make use of structure. Lessons 1-2, 2-5, 3-6, 4-1, 5-5, 6-3, 7-7, 8-6, 9-6, 10-2, 11-2, 12-8
8. Look for and express regularity in repeated reasoning. Lessons 1-4, 2-7, 3-1, 4-1, 5-4, 6-1, 7-1, 8-4, 9-3, 10-2, 11-5, 12-6