

Mathematics 8 Standards Parent Resource

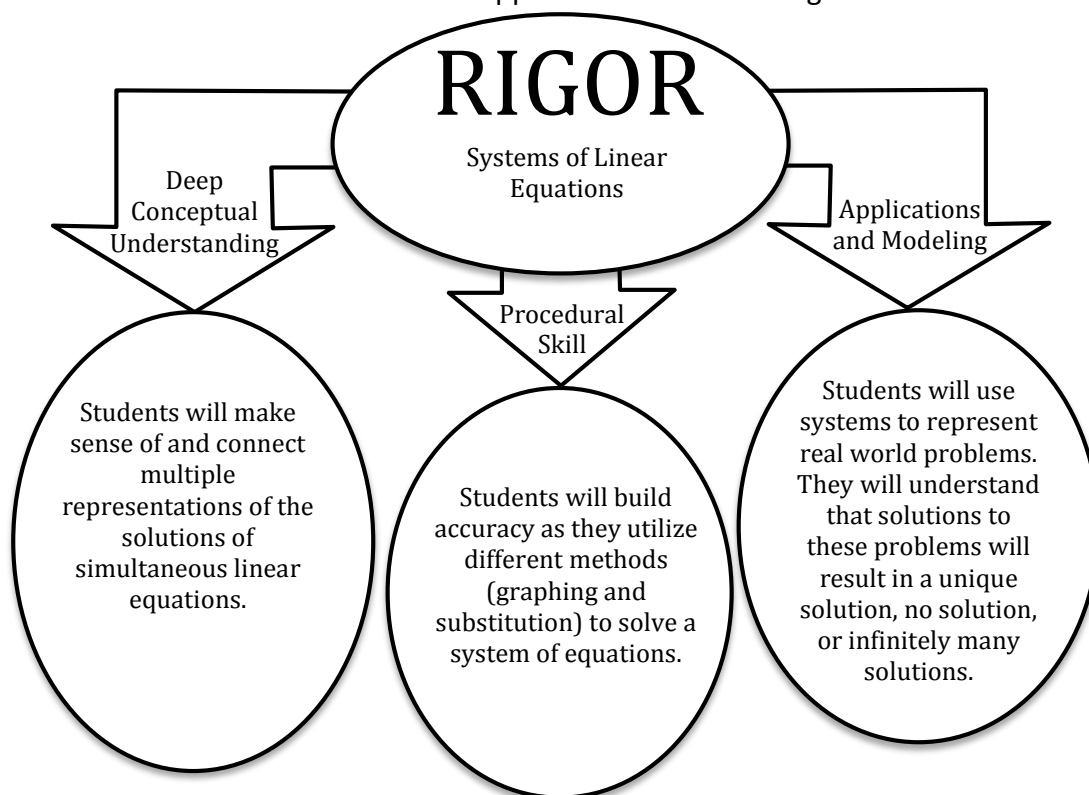
Unit 2: Linear Equations

Unit 2 includes 3 topics of study, listed below. This resource is for Topic 3.

Topic 1	Topic 2	Topic 3
Connecting Proportional Relationships to Linear Equations	Solving Linear Equations	Systems of Linear Equations

Topic	Learning Goals by <u>Common Core State Standard</u> <i>Students will be able to...</i>
Systems of Linear Equations	<ul style="list-style-type: none">Analyze and solve pairs of simultaneous linear equations.Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection.Solve real-world and mathematical problems leading to two linear equations in two variables. <p><i>Instructional videos in the hyperlinks above are meant to support C2.0 content, but may use vocabulary or strategies not emphasized by MCPS.</i></p>

The Common Core State Standards require a balance of three fundamental components that result in rigorous mathematics acquisition: deep conceptual understanding, procedural skill, and mathematical applications and modeling.

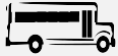


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Unit 2: Linear Equations

Topic 3: Solving Linear Equations

Learning Experiences by Common Core State Standard



In school, your child will...



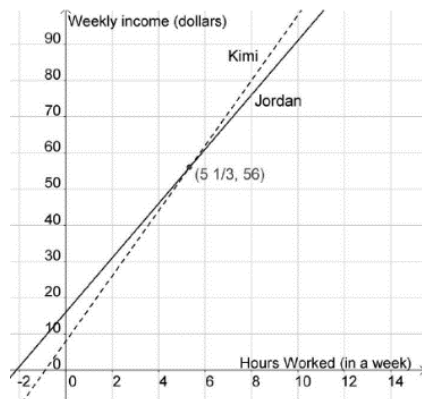
At home, your child can...

Topic 3: S Systems of Linear Equations

- Analyze and solve pairs of simultaneous linear equations.
- Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.
- Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection.
- Solve real-world and mathematical problems leading to two linear equations in two variables.

Kimi and Jordan are each working during the summer to earn money in addition to their weekly allowance, and they are saving all their money. Kimi earns \$9 an hour at her job, and her allowance is \$8 per week. Jordan earns \$7.50 an hour, and his allowance is \$16 per week.

What conclusions can you draw about their earnings based on the system of equations graphed below?



iM Illustrative Mathematics

- Learn how to use a system of equations to determine which of two cell phone plans is a better deal. Examine CK12's real world application at the [bill of \(EQUAL\) rights](#).
- Visit the CK12 PLIX (Play Learn Interact Xplore):
 - [Systems Using Substitution](#). The PLIX allows you to experiment with systems in action by dragging trees and holly berries to the house until you find the correct numbers to satisfy his requirements.
 - [Graphs of Linear Systems: Heart Rate Tracker](#) The PLIX allows you to experiment with systems in action by comparing the maximum heart rates of males and females. Use the interactive coordinate graph to display two linear equations and draw conclusions.

Additional Resources

- [LearnZillion: Use Graphs to Solve Systems](#) This video explains how to model simultaneous equations graphically and describes the implications for analysis. (online tutorial)
- [LearnZillion: Predict the number of solutions a system of two linear equations in two variables has by inspection](#) This video explains how to predict the number of solutions a system of two linear equations in two variables has by inspection. (online tutorial)
- [Classify a System of Equations](#) Practice using inspection as a strategy to determine the number of solutions to a system of equations. (online check)
- [Word Problems and Two Lines](#) Explore real world problems and create a system of linear equations to solve the problem. (online check)
- [Which is worth more, a smile or a frown?](#) – The NCTM resource asks students to reason about unknowns to determine the cost of a smile or a frown (online game)
- [Mathematics 8 Standards Unit 2 Topic 3 Systems of Linear Equations](#) (flexbook)

Additional Practice links support C2.0 content, but may use vocabulary or strategies not emphasized by MCPS.