



2017-2018 Curriculum Catalog

Mathematics 800

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Mathematics 800 Course Overview

Mathematics 800 is an introductory algebra course designed to prepare junior-high school students for Algebra I. The course focuses on strengthening needed skills in problem solving, integers, equations, and graphing. Students will begin to see the "big picture" of mathematics and learn how numeric, algebraic, and geometric concepts are woven together to build a foundation for higher mathematical thinking.

By the end of the course, students will be expected to do the following:

- Gain an increased awareness of how math is a life skill.
- Understand how math is like a language, with a set of conventions.
- Explore concepts taught in previous math courses at higher levels and in real world applications.
- Practice algebraic thinking in order to model and solve real world problems.
- Utilize new skills and concepts that will help them in future math courses.
- Introduce variable expressions and equations (single and multiple variable).
- Introduce linear functions, relationship between dependent and independent variables and coordinate graphing.

Unit 1: The Real Number System	
Assignments	
Mathematics 800	1. Course Overview
	2. Subsets of the Real Number System
	3. Using Variables
	4. The Number Line
	5. Comparing Rational Numbers
	6. Decimal-Fraction Conversions
	7. Quiz 1: Relationships
	8. Alternate Quiz 1 - Form A: Relationships*
	9. Alternate Quiz 1 - Form B: Relationships*
	10. Properties of the Real Numbers
	11. Exponents
	12. Performance Task
	13. Scientific Notation
	14. Operations with Scientific Notation
	15. Quiz 2: Other Forms
	15. Alternate Quiz 2 - Form A: Other Forms*
	16. Alternate Quiz 2 - Form B: Other Forms*
	17. Square Roots
	18. Order of Operations
	19. Quiz 3: Simplifying
	20. Alternate Quiz 3 - Form A: Simplifying*
	21. Alternate Quiz 3 - Form B: Simplifying*
	22. Performance Task
	23. Special Project*
	24. Review
	25. Test
	26. Alternate Test - Form A*
	27. Alternate Test - Form B*
28. Glossary and Credits	

Unit 2: Modeling Problems in Integers**Assignments**

Mathematics 800

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|--|--|
| 1. Translating Expressions and Equations | 18. Evaluating Expressions |
| 2. Solving One-Step Equations | 19. Quiz 3: Integers |
| 3. Solving Two-Step Equations | 20. Alternate Quiz 3 - Form A: Integers* |
| 4. Solving Equations with Exponents | 21. Alternate Quiz 3 - Form B: Integers* |
| 5. Quiz 1: Equations with Real Numbers | 22. Graphing |
| 6. Alternate Quiz 1 - Form A: Equations with Real Numbers* | 23. One-Step Equations |
| 7. Alternate Quiz 1 - Form B: Equations with Real Numbers* | 24. Two-Step Equations |
| 8. Relations and Functions | 25. Problem Solving |
| 9. Functions | 26. Performance Task |
| 10. Analyzing Graphs | 27. Quiz 4: Modeling with Integers |
| 11. Performance Task | 28. Alternate Quiz 4 - Form A: Modeling with Integers* |
| 12. Quiz 2: Functions | 29. Alternate Quiz 4 - Form B: Modeling with Integers* |
| 13. Alternate Quiz 2 - Form A: Functions* | 30. Special Project* |
| 14. Alternate Quiz 2 - Form B: Functions* | 31. Review |
| 15. Addition of Integers | 32. Test |
| 16. Subtraction of Integers | 33. Alternate Test - Form A* |
| 17. Multiplying and Dividing Integers | 34. Alternate Test - Form B* |
| | 35. Glossary and Credits |

Unit 3: Modeling Problems with Rational Numbers**Assignments**

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|--|--|
| 1. Prime Factorization and the GCF | 17. One-Step Addition and Subtraction Equations |
| 2. Simplifying Fractions | 18. One-Step Multiplication and Division Equations |
| 3. The LCM and the LCD | 19. Two-Step Equations |
| 4. Quiz 1: Number Theory | 20. One-Step Inequalities |
| 5. Alternate Quiz 1 - Form A: Number Theory* | 21. Two-Step Inequalities |
| 6. Alternate Quiz 1 - Form B: Number Theory* | 22. Performance Task |
| 7. Adding and Subtracting Like Fractions | 23. Quiz 3: Solving Equations and Inequalities |
| 8. Adding and Subtracting Unlike Fractions | 24. Alternate Quiz 3 - Form A: Solving Equations and Inequalities* |
| 9. Adding and Subtracting Decimal Numbers | 25. Alternate Quiz 3 - Form B: Solving Equations and Inequalities* |
| 10. Multiplying and Dividing Fractions | 26. Special Project* |
| 11. Multiplying and Dividing Decimal Numbers | 27. Review |
| 12. Irrational Numbers | 28. Test |
| 13. Performance Task | 29. Alternate Test - Form A** |
| 14. Quiz 2: Solving Problems with Rational Numbers | 30. Alternate Test - Form B |
| 15. Alternate Quiz 2 - Form A: Solving Problems with Rational Numbers* | 31. Glossary and Credits |
| 16. Alternate Quiz 2 - Form B: Solving Problems with Rational Numbers* | |

Unit 4: Proportional Reasoning**Assignments**

Mathematics 800

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|---|---|
| 1. Proportions | 18. Indirect Measure |
| 2. Linear Applications | 19. Models and Scales |
| 3. Direct Variation | 20. Performance Task |
| 4. Quiz 1: Proportions | 21. Quiz 3: Measurement/Similar Figures |
| 5. Alternate Quiz 1-Form A: Proportions* | 22. Alternate Quiz 3-Form A: Measurement/Similar Figures* |
| 6. Alternate Quiz 1-Form B: Proportions* | 23. Alternate Quiz 3-Form B: Measurement/Similar Figures* |
| 7. Fraction, Percent, and Decimal Equivalents | 24. Project: Proportional Reasoning |
| 8. Solving Percent Problems | 25. Alternate Project: Proportional Reasoning* |
| 9. Application of Ratios and Percents | 26. Special Project* |
| 10. More Applications with Percents | 27. Review |
| 11. Performance Task | 28. Test |
| 12. Quiz 2: Percents | 29. Alternate Test-Form A* |
| 13. Alternate Quiz 2-Form A: Percents* | 30. Alternate Test-Form B* |
| 14. Alternate Quiz 2-Form B: Percents* | 31. Glossary and Credits |
| 15. Unit Conversion within Customary Units | |
| 16. Unit Conversion within Metric Units | |
| 17. Corresponding Parts | |

Unit 5: More with Functions**Assignments**

Mathematics 800

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|---|--|
| 1. Rewriting Equations | 23. Solving Systems of Linear Equations using Substitution |
| 2. Combine Like Terms | 24. Solving Systems of Linear Equations using Addition |
| 3. Solving Equations by Combining Like Terms | 25. Applications of Linear Systems |
| 4. Distributive Property | 26. Performance Task |
| 5. Solving Equations with Distributive Property | 27. Quiz 3: System of Equations |
| 6. Solving Equations with Special Solutions | 28. Alternate Quiz 3 - Form A: System of Equations* |
| 7. Literal Equations | 29. Alternate Quiz 3 - Form B: System of Equations* |
| 8. Performance Task | 30. Patterns and Arithmetic Sequences |
| 9. Quiz 1: Solving Equations | 31. Geometric Sequences |
| 10. Alternate Quiz 1 - Form A: Solving Equations* | 32. Exponential Sequences |
| 11. Alternate Quiz 1 - Form B: Solving Equations* | 33. Recursive Sequences |
| 12. Slope | 34. Quiz 4: Patterns |
| 13. Comparing Functions | 35. Alternate Quiz 4 - Form A: Patterns* |
| 14. Using Intercepts | 36. Alternate Quiz 4 - Form B: Patterns* |
| 15. Slope-Intercept Form | 37. Special Project* |
| 16. More Slope-Intercept Form | 38. Review |
| 17. Applications of Linear Functions | 39. Test |
| 18. Non-Linear Functions | 40. Alternate Test - Form A* |
| 19. Quiz 2: Families of Functions | 41. Alternate Test - Form B* |
| 20. Alternate Quiz 2 - Form A: Families of Functions* | 42. Glossary and Credits |
| 21. Alternate Quiz 2 - Form B: Families of Functions* | |
| 22. Graphing Systems of Linear Equations | |

Unit 6: Measurement	
Assignments	
Mathematics 800	1. Classify and Measure Angles
	2. Perpendicular and Parallel Lines, Part 1
	3. Perpendicular and Parallel Lines, Part 2
	4. Circles
	5. Quiz 1: Angle Measures and Circles
	6. Alternate Quiz 1 - Form A: Angle Measures and Circles*
	7. Alternate Quiz 1 - Form B: Angle Measures and Circles*
	8. Classifying Polygons
	9. Interior and Exterior Measures of Polygons
	10. Classifying Triangles and the Triangle Inequality Theorem
	11. Performance Task
	12. The Quadrilateral Family
	13. Quiz 2: Polygons
	14. Alternate Quiz 2 - Form A: Polygons*
	15. Alternate Quiz 2 - Form B: Polygons*
	16. Pythagorean Theorem, Part 1
	17. Pythagorean Theorem, Part 2
	18. Performance Task
	19. Quiz 3: Indirect Measure
	20. Alternate Quiz 3 - Form A: Indirect Measure*
	21. Alternate Quiz 3 - Form B: Indirect Measure*
	22. Special Project*
	23. Review
	24. Test
	25. Alternate Test - Form A*
	26. Alternate Test - Form B*
	27. Glossary and Credits

Unit 7: Plane Geometry	
Assignments	
Mathematics 800	1. Perimeter and Circumference
	2. Area of Parallelograms
	3. Area of Triangles and Trapezoids
	4. Area of Circles
	5. Composite Figures
	6. Effects of Dimensional Changes
	7. Performance Task
	8. Quiz 1: Perimeter and Area
	9. Alternate Quiz 1 - Form A: Perimeter and Area*
	10. Alternate Quiz 1 - Form B: Perimeter and Area*
	11. Symmetry
	12. Distance and Midpoint
	13. Reflections
	14. Quiz 2: Symmetry and Reflections
	15. Alternate Quiz 2 - Form A: Symmetry and Reflections*
	16. Alternate Quiz 2 - Form B: Symmetry and Reflections*
	17. Translations
	18. Tessellations
	19. Rotations
	20. Dilations
	21. Angle Reflections, Translations, and Rotations
	22. Performance Task
	23. Quiz 3: Other Transformations
	24. Alternate Quiz 3 - Form A: Other Transformations*
	25. Alternate Quiz 3 - Form B: Other Transformations*
	26. Special Project*
	27. Review
	28. Test
	29. Alternate Test - Form A*
	30. Alternate Test - Form B*
	31. Glossary and Credits

Unit 8: Measures of Solid Figures**Assignments**

Mathematics 800

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|---|--|
| 1. Solid Figures | 16. Volume of Cones |
| 2. Euler's Formula | 17. Volume of Spheres |
| 3. Surface Area of Rectangular Prisms | 18. Changes to Volume |
| 4. Surface Area of Triangular Prisms | 19. Volume of Composite Figures |
| 5. Performance Task | 20. Performance Task |
| 6. Surface Area of Cylinders | 21. Quiz 2: Volume |
| 7. Surface Area of Pyramids, Cones, and Spheres | 22. Alternate Quiz 2 - Form A: Volume* |
| 8. Surface Area of Composite Figures | 23. Alternate Quiz 2 - Form B: Volume* |
| 9. Quiz 1: Surface Area | 24. Special Project* |
| 10. Alternate Quiz 1 - Form A: Surface Area* | 25. Review |
| 11. Alternate Quiz 1 - Form B: Surface Area* | 26. Test |
| 12. Volume of Rectangular Prisms | 27. Alternate Test - Form A* |
| 13. Volume of Triangular Prisms | 28. Alternate Test - Form B* |
| 14. Volume of Square Pyramids | 29. Glossary and Credits |
| 15. Volume of Cylinders | |

Unit 9: Data Analysis**Assignments**

Mathematics 800

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|--|--|
| 1. Collecting Data | 16. Appropriate Displays |
| 2. Measures of Central Tendency and Dispersion | 17. Application of Data Analysis |
| 3. Bar Graphs | 18. Performance Task |
| 4. Circle Graphs | 19. Quiz 2: More Data Displays |
| 5. Line Graphs | 20. Alternate Quiz 2 - Form A: More Data Displays* |
| 6. Frequency and Histograms | 21. Alternate Quiz 2 - Form B: More Data Displays* |
| 7. Two-Way Frequency Tables | 22. Financial Responsibility |
| 8. Performance Task | 23. Calculating Interest |
| 9. Quiz 1: Collecting and Representing Data | 24. Educational Funding |
| 10. Alternate Quiz 1 - Form A: Collecting and Representing Data* | 25. Quiz 3: Personal Finances |
| 11. Alternate Quiz 1 - Form B: Collecting and Representing Data* | 26. Special Project* |
| 12. Constructing Box-and-Whisker Plots | 27. Review |
| 13. Interpreting Box-and-Whisker Plots | 28. Test |
| 14. Scatter Plots | 29. Alternate Test - Form A* |
| 15. Misleading Graphs | 30. Alternate Test - Form B* |
| | 31. Glossary and Credits |

Unit 10: Probability		
Assignments		
Mathematics 800	1. Tree Diagrams and the Counting Principle	13. Performance Task
	2. Permutations	14. Quiz 2: Probability
	3. Combinations	15. Alternate Quiz 2 - Form A: Probability*
	4. Mixed Review of Outcomes	16. Alternate Quiz 2 - Form B: Probability*
	5. Quiz 1: Outcomes	17. Simulate a Problem
	6. Alternate Quiz 1 - Form A: Outcomes*	18. Quest: All That's Fair In... *
	7. Alternate Quiz 1 - Form B: Outcomes*	19. Special Project*
	8. Probability and Odds	20. Review
	9. Experimental vs Theoretical Probability	21. Test
	10. Disjointed and Overlapping Events	22. Alternate Test - Form A*
	11. Independent and Dependent Events	23. Alternate Test - Form B*
	12. Performance Task	24. Glossary and Credits

Unit 11: Course Review and Exam		
Assignments		
Mathematics 800	1. Review 1	6. Performance Task 1*
	2. Review 2	7. Performance Task 2*
	3. Final Exam	8. Performance Task 3*
	4. Final Exam - Form A*	9. Performance Task 4*
	5. Final Exam - Form B*	

Unit 12: End of Course		
Assignments		
Mathematics 800	1. Exam*	3. Alternate Exam - Form B*
	2. Alternate Exam - Form A*	

(*) Indicates alternative assignment