



2012 Curriculum Catalog

Integrated Math I

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Course Overview

Integrated Math I is a mathematics course for high school students who have successfully completed either general mathematics for grade 8 or pre-algebra. This course is the first in a four-part, integrated high school mathematics curriculum. The materials in this course integrate the topics of algebra, geometry, probability, and statistics.

Throughout the course, students will practice algebraic thinking and use algebra to model and solve real world problems. Students are exposed to several branches of mathematics and will explore ways in which each one can be used as a mathematical model in understanding the world.

The course seeks to help students expand their knowledge and skills so that they may achieve the following goals:

- Gain an increased awareness of math as a life skill.
- Understand how math is like a language, with a set of conventions.
- Realize that while mathematical models are useful in studying the world, they have limits.

In attaining these goals, students will begin to see the “big picture” of mathematics and understand how numeric, algebraic, and geometric concepts are woven together to build a foundation for higher mathematical thinking.

UNIT 1: FOUNDATIONS OF ALGEBRA	
Assignment Titles	
1. Course Overview	15. Project: Determining Logical Equivalence
2. Classifying and Comparing Numbers	16. Converse, Inverse and Contrapositive
3. Fractions	17. Quiz 3: Logical Thinking
4. Signed Numbers	18. Open Sentences
5. Exponents and Order of Operations	19. Addition Property of Equality
6. Quiz 1: The Language of Mathematics	20. Multiplication Property of Equality
7. Variables and Expressions	21. Equations with More than One Step
8. Evaluating Expressions	22. Variables on Both Sides
9. Commutative and Associative Properties	23. Quiz 4: Properties of Equality
10. The Distributive Property	24. Special Project
11. Simplifying Expressions	25. Review
12. Quiz 2: Introduction to Algebra	26. Test
13. Drawing Conclusions	27. Alternate Test
14. Truth Values	28. Glossary and Credits

UNIT 2: THE LANGUAGE OF ALGEBRA	
Assignment Titles	
1. Multiplying with Like Bases	14. Multiplying Radicals
2. A Product to a Power	15. Dividing Radicals
3. Dividing with Like Bases	16. Adding and Subtracting Radicals
4. Scientific Notation	17. Quiz 3: Radical Expressions
5. Quiz 1: Exponential Expressions	18. Simplifying Rational Expressions
6. Adding and Subtracting Polynomials	19. Multiplying and Dividing Rational Expressions
7. Multiplying by a Monomial	20. Adding and Subtracting Rational Expressions
8. Multiplying all Polynomials	21. Quiz 4: Rational Expressions
9. F.O.I.L. and Special Cases	22. Special Project
10. Dividing by a Monomial	23. Review
11. Long Division	24. Test
12. Quiz 2: Operations with Polynomials	25. Alternate Test
13. Simplifying Radicals	26. Glossary and Credits

UNIT 3: GEOMETRY
Assignment Titles

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|---|-----------------------------------|
| 1. Angle Relationship Definitions | 13. Volume |
| 2. Parallel Lines and Transversals | 14. Quiz 3: Polyhedra |
| 3. Interior and Exterior Angles of Polygons | 15. Central Angle and Arc Measure |
| 4. Quiz 1: Angle Relationships | 16. Area and Sectors |
| 5. Triangle Properties | 17. The Cylinder and Sphere |
| 6. Pythagorean Theorem | 18. Quiz 4: Circles and Spheres |
| 7. Congruence | 19. Special Project |
| 8. Parallelograms | 20. Review |
| 9. The Trapezoid | 21. Test |
| 10. Quiz 2: Polygons | 22. Alternate Test |
| 11. Definitions and Nets | 23. Glossary and Credits |
| 12. Surface Area | |

UNIT 4: COORDINATE GEOMETRY
Assignment Titles

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|--------------------------------------|-----------------------------------|
| 1. The Coordinate Plane | 12. Rotations |
| 2. Identifying Functions | 13. Quiz 3: Transformations |
| 3. Function Notation | 14. Parent Functions |
| 4. Modeling Functions | 15. Reflecting a Parent Function |
| 5. Quiz 1: Introduction to Functions | 16. Shifting a Parent Function |
| 6. The Distance Formula | 17. Quiz 4: Families of Functions |
| 7. The Midpoint Formula | 18. Special Project |
| 8. The Circle | 19. Review |
| 9. Quiz 2: Geometry Proof | 20. Test |
| 10. Symmetry and Reflections | 21. Alternate Test |
| 11. Translations and Dilations | 22. Glossary and Credits |

UNIT 5: SEMESTER REVIEW AND EXAM
Assignment Titles

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|-----------|--------------------------|
| 1. Review | 3. Alternate Exam—Form A |
| 2. Exam | 4. Alternate Exam—Form B |

UNIT 6: LINEAR SYSTEMS
Assignment Titles

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|--|---|
| 1. Writing Equations from Word Problems | 15. Slope |
| 2. Combining Like Terms | 16. Quiz 3: Linear Functions |
| 3. The Distributive Property | 17. Linear Equations |
| 4. Literal Equations | 18. Slope-Intercept Form |
| 5. Quiz 1: Multi-Step Equations | 19. Writing Linear Equations (1) |
| 6. Two Unknowns | 20. Writing Linear Equations (2) |
| 7. More than Two Unknowns | 21. Writing Linear Equations (3) |
| 8. Using a Chart | 22. Quiz 4: Writing Linear Function Rules |
| 9. Percent Problems | 23. Special Project |
| 10. Mixture and Interest Problems | 24. Review |
| 11. Quiz 2: Modeling with Linear Equations | 25. Test |
| 12. Writing a Function Rule | 26. Alternate Test |
| 13. Arithmetic Sequences | 27. Glossary and Credits |
| 14. Direct Variation | |

UNIT 7: EQUATIONS AND INEQUALITIES
Assignment Titles

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|---------------------------------|---|
| 1. The Greatest Common Factor | 15. Ratio Problems |
| 2. Factoring Out the GCF | 16. Quiz 3: Rational Equations |
| 3. Factoring Trinomials | 17. Graphing One-Variable Inequalities |
| 4. Special Cases | 18. Addition Property of Inequality |
| 5. Factoring by Grouping | 19. Multiplication Property of Inequality |
| 6. Perfect Cubes | 20. Multi-Step Inequalities |
| 7. Quiz 1: Factoring | 21. Maximum and Minimum |
| 8. Recognizing a Quadratic | 22. Quiz 4: Inequalities |
| 9. The Zero Product Property | 23. Special Project |
| 10. The Square Root Method | 24. Review |
| 11. Quiz 2: Quadratic Equations | 25. Test |
| 12. Proportions | 26. Alternate Test |
| 13. Using the LCD | 27. Glossary and Credits |
| 14. Rate and Mixture Problems | |

UNIT 8: LINEAR SYSTEMS
Assignment Titles

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|---|--|
| 1. Compound Inequality Graphs | 12. Fractional Coefficients |
| 2. Solving Compound Inequalities | 13. Quiz 3: Solving Linear Systems Algebraically |
| 3. Inequalities in Two Variables | 14. Using Two Variables |
| 4. Quiz 1: Compound and Two Variable Inequalities | 15. Money and Unit Pricing |
| 5. Solution of a System | 16. Using Formulas |
| 6. Graphing Systems of Equations | 17. Quiz 4: Modeling with Linear Systems |
| 7. Systems of Inequalities | 18. Special Project |
| 8. Quiz 2: Solving Linear Systems by Graphing | 19. Review |
| 9. The Substitution Method | 20. Test |
| 10. The Elimination Method | 21. Alternate Test |
| 11. Matrices | 22. Glossary and Credits |

UNIT 9: PROBABILITY AND STATISTICS
Assignment Titles

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|---------------------------------|--|
| 1. Measures of Central Tendency | 11. Probability |
| 2. Dispersion | 12. Project: Experimental Versus Theoretical Probability |
| 3. Project: Graphing Data | 13. Compound Events |
| 4. Interpreting Data | 14. Project: Probability |
| 5. Project: Data Analysis | 15. Quiz 3: Probability |
| 6. Quiz 1: Statistical Analysis | 16. Special Project |
| 7. Outcomes | 17. Review |
| 8. Permutations | 18. Test |
| 9. Combinations | 19. Alternate Test |
| 10. Quiz 2: Outcomes | 20. Glossary and Credits |

UNIT 10: SEMESTER REVIEW AND EXAM
Assignment Titles

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|-----------|--------------------------|
| 1. Review | 3. Alternate Exam—Form A |
| 2. Exam | 4. Alternate Exam—Form B |

UNIT 11: FINAL EXAM
Assignment Titles

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|--------------------------|--------------------------|
| 1. Exam | 3. Alternate Exam—Form B |
| 2. Alternate Exam—Form A | |