Odysseyware®

CURRICULUM OVERVIEW

Integrated Math I

Table of Contents

Integrated Math I 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. 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

Assignments

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

Assignments

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

Assignments

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

Assignments

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

Unit 5: Semester Review and Exam

Assignments

1.	Review	3.	Alternate Exam: Form A*
2.	Exam	4.	Alternate Exam: Form B*

Unit 6: Linear Equations

Assignments

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

Assignments

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

Unit 8: Linear Systems

Assignments

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

Unit 9: Probability and Statistics

Assignments

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

Unit 10: Semester Review and Exam

Assignments

1. Review
2. Exam
3. Alternate Exam: Form A*
4. Alternate Exam: Form B*

Unit 11: Final Exam	
Assignments	
1. Exam	3. Alternate Exam: Form B*
2. Alternate Exam: Form A*	

(*) Indicates alternative assignment