



## CURRICULUM CATALOG

# Mathematics 500

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## Mathematics 500 Course Overview

Math 500 is a full-year elementary math course focusing on number skills, mathematical literacy, and geometric concepts. Students will gain solid experience with number theory and operations, including whole numbers, decimals, and fractions. In addition, students will develop their understanding of measurement and two- and three- dimensional figures. This course also integrates mathematical practices throughout the units, as well as introducing students to algebraic, statistical, and probability concepts.

In this course, students will be taught the following:

### Place Value, Addition, and Subtraction

- Adding and subtracting of decimals and fractions
- Comparing and ordering whole numbers
- Determining rules for number patterns
- Mental math
- Rounding and estimating

### Multiplying Whole Numbers and Decimals

- Estimating whole number products
- Multiplying decimals
- Multiplying whole numbers
- Properties of multiplication

### Dividing Whole Numbers and Decimals

- Dividing with money
- Dividing whole numbers and decimals
- Estimating quotients
- Interpreting remainders

### Algebra and Graphing

- Coordinate plane
- Expressions
- Graphing functions
- Integers
- Numerical patterns in tables and graphs
- Order of operations
- Scatterplots

### Measurement

- Capacity
- Density
- Length
- Mass
- Time and temperature
- The Metric System
- Weight

Factors and Fractions

- Comparing fractions and decimals
- Equivalent fractions
- Factors
- Fractions
- Greatest Common Factor/Least Common Multiple
- Improper fractions and mixed numbers
- Prime factorization
- Rounding fractions
- Simplifying fractions

Fraction Operations

- Adding and subtracting fractions
- Adding and subtracting mixed numbers
- Estimating sums and differences
- Multiplying mixed numbers
- Multiplying whole numbers and fractions

Data Analysis and Probability

- Bar/Line Graphs
- Choosing the right graph
- Collecting data and frequency tables
- Line plots
- Listing outcomes
- Making predictions
- Measures of central tendency
- Probability
- Stem-and-Leaf plots

Geometry

- Angles
- Circles
- Geometry terms
- Polygons
- Quadrilaterals
- Making predictions
- Similar and congruent figures
- Solid figures
- Symmetry
- Transformations
- Triangles

Perimeter, Area, and Volume

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- Perimeter, Area, and Volume
- Area
- Circumference
- Parallelograms
- Polygons
- Regular polygons
- Squares and rectangles
- Surface area
- Triangles
- Volume

Financial Literacy

- Exploring your finances

Unit 1: Place Value, Addition, and Subtraction		
Assignments		
Mathematics 500	1. Course Overview	16. Adding Decimal Numbers
	2. Whole Number Place Value	17. Determining Rules to Generate Number Patterns
	3. Comparing and Ordering Whole Numbers	18. Subtracting Decimal Numbers
	4. Decimal Number Place Value	19. Exploring Your Finances
	5. Comparing and Ordering Decimal Numbers	20. Project: Logical Reasoning
	6. Quiz: Place Value	21. Quiz: Addition and Subtraction
	7. Alternate Quiz - Form A: Place Value*	22. Alternate Quiz - Form A: Addition and Subtraction*
	8. Alternate Quiz - Form B: Place Value*	23. Alternate Quiz - Form B: Addition and Subtraction*
	9. Rounding Whole Numbers and Decimals	24. Special Project*
	10. Estimating Sums and Differences	25. Review
	11. Add and Subtract Mentally	26. Test
	12. Quiz: Rounding and Estimating	27. Alternate Test - Form A*
	13. Alternate Quiz - Form A: Rounding and Estimating*	28. Alternate Test - Form B*
	14. Alternate Quiz - Form B: Rounding and Estimating*	29. Glossary and Credits
	15. Adding and Subtracting Whole Numbers	

Unit 2: Multiplying Whole Numbers and Decimals		
Assignments		
Mathematics 500	1. Estimating Whole Number Products	14. Estimating Decimal Products
	2. Properties of Multiplication	15. Multiplying Whole Numbers by Decimals
	3. Multiplying Whole Numbers	16. Multiplying Decimals by Decimals
	4. Quiz: Multiplying Whole Numbers	17. Solving Multiplication Problems
	5. Alternate Quiz –Form A: Multiplying Whole Numbers*	18. Quiz: Multiplying Decimal Numbers
	6. Alternate Quiz –Form B: Multiplying Whole Numbers*	19. Alternate Quiz –Form A: Multiplying Decimal Numbers*
	7. Exponents	20. Alternate Quiz –Form B: Multiplying Decimal Numbers*
	8. Multiplying Whole Numbers by Powers of Ten	21. Special Project*
	9. Project: How Much is a Million	22. Review
	10. Multiplying Decimals by Powers of Ten	23. Test
	11. Quiz: Powers	24. Alternate Test—Form A*
	12. Alternate Quiz –Form A: Powers*	25. Alternate Test—Form B*
	13. Alternate Quiz –Form B: Powers*	26. Glossary and Credits

Unit 3: Dividing Whole Numbers and Decimals		
Assignments		
Mathematics 500	1. Understanding Division	14. Alternate Quiz –Form B: Two-Digit Divisors*
	2. Estimating Quotients	15. Dividing by Powers of Ten
	3. Dividing Whole Numbers	16. Dividing Decimals by Whole Numbers
	4. Remainders	17. Dividing with Money
	5. Quiz: One-Digit Divisors	18. Quiz : Decimal Division
	6. Alternate Quiz –Form A: One-Digit Divisors*	19. Alternate Quiz –Form A: Decimal Division*
	7. Alternate Quiz –Form B: One-Digit Divisors*	20. Alternate Quiz –Form B: Decimal Division*
	8. Dividing by Multiples of Ten	21. Special Project*
	9. Dividing Whole Numbers I	22. Review
	10. Dividing Whole Numbers II	23. Test
	11. Interpreting the Remainder	24. Alternate Test–Form A*
	12. Quiz: Two-Digit Divisors	25. Alternate Test–Form B*
	13. Alternate Quiz –Form A: Two-Digit Divisors*	26. Glossary and Credits

Unit 4: Algebra and Graphing		
Assignments		
Mathematics 500	1. Addition and Subtraction Expressions	15. The Coordinate Plane
	2. Multiplication and Division Expressions	16. Graphing Functions
	3. The Order of Operations	17. Interpreting Graphs
	4. Quiz: Expressions	18. Scatterplots
	5. Alternate Quiz –Form A: Expressions*	19. Numerical Patterns in a Table/Graph
	6. Alternate Quiz –Form B: Expressions*	20. Integers
	7. Addition and Subtraction Equations	21. Quiz: Graphing
	8. Multiplication Equations	22. Alternate Quiz –Form A: Graphing*
	9. Functions	23. Alternate Quiz –Form B: Graphing*
	10. Numerical Patterns	24. Special Project*
	11. Project: Patterns	25. Review
	12. Quiz: Patterns, Functions, and Equations	26. Test
	13. Alternate Quiz –Form A: Patterns, Functions, and Equations*	27. Alternate Test–Form A*
	14. Alternate Quiz –Form B: Patterns, Functions, and Equations*	28. Alternate Test–Form B*
		29. Glossary and Credits

Unit 5: Measurement		
Assignments		
Mathematics 500	1. The Metric System	14. Alternate Quiz –Form B: The Customary System*
	2. Length	15. Time
	3. Mass	16. Elapsed Time
	4. Capacity	17. Temperature
	5. Quiz: The Metric System	18. Quiz : Time and Temperature
	6. Alternate Quiz –Form A: The Metric System*	19. Alternate Quiz –Form A: Time and Temperature*
	7. Alternate Quiz –Form B: The Metric System*	20. Alternate Quiz –Form B: Time and Temperature*
	8. Length	21. Special Project*
	9. Weight	22. Review
	10. Capacity	23. Test
	11. Project: Density	24. Alternate Test–Form A*
	12. Quiz: The Customary System	25. Alternate Test–Form B*
	13. Alternate Quiz –Form A: The Customary System*	26. Glossary and Credits

Unit 6: Factors and Fractions		
Assignments		
Mathematics 500	1. Factors	14. Least Common Multiple
	2. Prime Factorization	15. Comparing Fractions
	3. Greatest Common Factor	16. Fractions and Decimals
	4. Quiz: Factors	17. Rounding Fractions
	5. Alternate Quiz –Form A: Factors*	18. Quiz: Fractions
	6. Alternate Quiz –Form B: Factors*	19. Alternate Quiz –Form A: Fractions*
	7. Fractions	20. Alternate Quiz –Form B: Fractions*
	8. Improper Fractions and Mixed Numbers	21. Special Project*
	9. Simplifying Fractions	22. Review
	10. Equivalent Fractions	23. Test
	11. Quiz: Equivalent Fractions	24. Alternate Test–Form A*
	12. Alternate Quiz –Form A: Equivalent Fractions*	25. Alternate Test–Form B*
	13. Alternate Quiz –Form B: Equivalent Fractions*	26. Glossary and Credits

Unit 7: Fraction Operations		
Assignments		
Mathematics 500	1. Adding and Subtracting Fractions	15. Multiplying Fractions
	2. Adding and Subtracting Mixed Numbers	16. Multiplying Mixed Numbers
	3. Estimating Sums and Differences	17. Dividing Fractions
	4. Quiz: Like Denominators	18. Quiz : Multiplying and Dividing Fractions
	5. Alternate Quiz–Form A: Like Denominators*	19. Alternate Quiz –Form A: Multiplying and Dividing Fractions*
	6. Alternate Quiz –Form B: Like Denominators*	20. Alternate Quiz –Form B: Multiplying and Dividing Fractions*
	7. Adding Fractions	21. Special Project*
	8. Subtracting Fractions	22. Review
	9. Adding Mixed Numbers	23. Test
	10. Subtracting Mixed Numbers	24. Alternate Test–Form A*
	11. Quiz: Unlike Denominators	25. Alternate Test–Form B*
	12. Alternate Quiz –Form A: Unlike Denominators*	26. Glossary and Credits
	13. Alternate Quiz –Form B: Unlike Denominators*	
	14. Multiplying Whole Numbers and Fractions	

Unit 8: Data Analysis and Probability		
Assignments		
Mathematics 500	1. Collecting Data and Frequency Tables	13. Alternate Quiz –Form B: Displaying Data*
	2. Measures of Central Tendency	14. Probability
	3. Line Plots	15. Probability as a Fraction
	4. Stem-and-Leaf Plots	16. Listing Outcomes
	5. Quiz: Collecting and Analyzing Data	17. Making Predictions
	6. Alternate Quiz –Form A: Collecting and Analyzing Data*	18. Quiz : Probability
	7. Alternate Quiz –Form B: Collecting and Analyzing Data*	19. Alternate Quiz –Form A: Probability*
	8. Bar Graphs	20. Alternate Quiz –Form B: Probability*
	9. Line Graphs	21. Special Project*
	10. Choosing the Right Graph	22. Review
	11. Quiz: Displaying Data	23. Test
	12. Alternate Quiz –Form A: Displaying Data*	24. Alternate Test–Form A*
		25. Alternate Test–Form B*
		26. Glossary and Credits

Unit 9: Geometry		
Assignments		
Mathematics 500	1. Geometry Terms	14. Similar and Congruent Figures
	2. Angles	15. Transformations
	3. Circles	16. Symmetry
	4. Quiz: Geometry	17. Project: Constructions
	5. Alternate Quiz –Form A: Geometry*	18. Quiz : Transformations and Symmetry
	6. Alternate Quiz –Form B: Geometry*	19. Alternate Quiz –Form A: Transformations and Symmetry*
	7. Polygons	20. Alternate Quiz –Form B: Transformations and Symmetry*
	8. Triangles	21. Special Project*
	9. Quadrilaterals	22. Review
	10. Solid Figures	23. Test
	11. Quiz : Classifying Plane and Solid Figures	24. Alternate Test–Form A*
	12. Alternate Quiz –Form A: Classifying Plane and Solid Figures*	25. Alternate Test–Form B*
	13. Alternate Quiz –Form B: Classifying Plane and Solid Figures*	26. Glossary and Credits

Unit 10: Perimeter, Area, and Volume		
Assignments		
Mathematics 500	1. Polygons	14. Surface Area
	2. Regular Polygons	15. Volume
	3. Circumference	16. Solving Volume Problems
	4. Quiz - Perimeter	17. Project: Solid Figures
	5. Alternate Quiz - Form A: Perimeter*	18. Quiz - Solid Figures
	6. Alternate Quiz - Form B: Perimeter*	19. Alternate Quiz - Form A: Solid Figures*
	7. Area	20. Alternate Quiz - Form B: Solid Figures*
	8. Squares and Rectangles	21. Special Project*
	9. Parallelograms	22. Review
	10. Triangles	23. Test
	11. Quiz - Area	24. Alternate Test - Form A*
	12. Alternate Quiz - Form A: Area*	25. Alternate Test - Form B*
	13. Alternate Quiz - Form B: Area*	26. Glossary and Credits

Unit 11: Course Review and Exam	
Assignments	
1. Course Review 1	4. Alternate Exam - Form A*
2. Course Review 2	5. Alternate Exam - Form B*
3. Exam	

(\*) Indicates alternative assignment