



2012 Curriculum Catalog

Mathematics 500

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Course Overview

Math 500 is a full-year elementary math course focusing on number skills, numerical literacy, and geometric concepts. In it, 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.

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

- Perform all four operations on whole numbers and decimals (to hundredths).
- Perform addition and subtraction of fractions and mixed numbers with like and unlike denominators.
- Understand place value of decimal numbers (to thousandths).
- Evaluate expressions for given values and plot whole number ordered pairs on coordinate grids.
- Represent and interpret data on line plots, stem-and-leaf plots, line graphs, and bar graphs.
- Convert units of measurement within a given measurement system.
- Classify plane shapes and calculate their perimeter and area.

UNIT 1: PLACE VALUE, ADDITION, AND SUBTRACTION	
Assignment Titles	
1. Course Overview	14. Alternate Quiz 2: Form B: Rounding and Estimating
2. Whole Number Place Value	15. Adding and Subtracting Whole Numbers
3. Comparing and Ordering Whole Numbers	16. Adding Decimal Numbers
4. Decimal Number Place Value	17. Subtracting Decimal Numbers
5. Comparing and Ordering Decimal Numbers	18. Project: Logical Reasoning
6. Quiz 1: Place Value	19. Quiz 3: Addition and Subtraction
7. Alternate Quiz 1: Form A: Place Value	20. Alternate Quiz 3: Form A: Addition and Subtraction
8. Alternate Quiz 1: Form B: Place Value	21. Alternate Quiz 3: Form B: Addition and Subtraction
9. Rounding Whole Numbers and Decimals	22. Special Project
10. Estimating Sums and Differences	23. Review
11. Add and Subtract Mentally	24. Test
12. Quiz 2: Rounding and Estimating	25. Alternate Test: Form A
13. Alternate Quiz 2: Form A: Rounding and Estimating	26. Alternate Test: Form B
	27. Glossary and Credits

UNIT 2: MULTIPLYING WHOLE NUMBERS AND DECIMALS	
Assignment Titles	
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 1: Multiplying Whole Numbers	17. Solving Multiplication Problems
5. Alternate Quiz 1: Form A: Multiplying Whole Numbers	18. Quiz 3: Multiplying Decimal Number
6. Alternate Quiz 1: Form B: Multiplying Whole Numbers	19. Alternate Quiz 3: Form A: Multiplying Decimal Numbers
7. Exponents	20. Alternate Quiz 3: 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 2: Powers	24. Alternate Test: Form A
12. Alternate Quiz 2: Form A: Powers	25. Alternate Test: Form B
13. Alternate Quiz 2: Form B: Powers	26. Glossary and Credits

UNIT 3: DIVIDING WHOLE NUMBERS AND DECIMALS
Assignment Titles

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|--|--|
| 1. Understanding Division | 14. Alternate Quiz 2: 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 1: One-Digit Divisors | 18. Quiz 3: Decimal Division |
| 6. Alternate Quiz 1: Form A: One-Digit Divisors | 19. Alternate Quiz 3: Form A: Decimal Division |
| 7. Alternate Quiz 1: Form B: One-Digit Divisors | 20. Alternate Quiz 3: 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 2: Two-Digit Divisors | 25. Alternate Test: Form B |
| 13. Alternate Quiz 2: Form A: Two-Digit Divisors | 26. Glossary and Credits |

UNIT 4: ALGEBRA AND GRAPHING
Assignment Titles

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|---|--|
| 1. Addition and Subtraction Expressions | 14. The Coordinate Plane |
| 2. Multiplication Expressions | 15. Graphing Functions |
| 3. The Order of Operations | 16. Interpreting Graphs |
| 4. Quiz 1: Expressions | 17. Integers |
| 5. Alternate Quiz 1: Form A: Expressions | 18. Quiz 3: Graphing |
| 6. Alternate Quiz 1: Form B: Expressions | 19. Alternate Quiz 3: Form A: Graphing |
| 7. Addition and Subtraction Equations | 20. Alternate Quiz 3: Form B: Graphing |
| 8. Multiplication Equations | 21. Special Project |
| 9. Functions | 22. Review |
| 10. Project: Patterns | 23. Test |
| 11. Quiz 2: Functions and Equations | 24. Alternate Test: Form A |
| 12. Alternate Quiz 2: Form A: Functions and Equations | 25. Alternate Test: Form B |
| 13. Alternate Quiz 2: Form B: Functions and Equations | 26. Glossary and Credits |

UNIT 5: MEASUREMENT
Assignment Titles

- | | |
|--|--|
| 1. The Metric System | 14. Alternate Quiz 2: Form B: The Customary System |
| 2. Length | 15. Time |
| 3. Mass | 16. Elapsed Time |
| 4. Capacity | 17. Temperature |
| 5. Quiz 1: The Metric System | 18. Quiz 3: Time and Temperature |
| 6. Alternate Quiz 1: Form A: The Metric System | 19. Alternate Quiz 3: Form A: Time and Temperature |
| 7. Alternate Quiz 1: Form B: The Metric System | 20. Alternate Quiz 3: 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 2: The Customary System | 25. Alternate Test: Form B |
| 13. Alternate Quiz 2: Form A: The Customary System | 26. Glossary and Credits |

UNIT 6: FACTORS AND FRACTIONS
Assignment Titles

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

UNIT 7: FRACTION OPERATIONS
Assignment Titles

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|---|--|
| 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 1: Like Denominators | 18. Quiz 3: Multiplying and Dividing Fractions |
| 5. Alternate Quiz 1: Form A: Like Denominators | 19. Alternate Quiz 3: Form A: Multiplying and Dividing Fractions |
| 6. Alternate Quiz 1: Form B: Like Denominators | 20. Alternate Quiz 3: 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 2: Unlike Denominators | 25. Alternate Test: Form B |
| 12. Alternate Quiz 2: Form A: Unlike Denominators | 26. Glossary and Credits |
| 13. Alternate Quiz 2: Form B: Unlike Denominators | |
| 14. Multiplying Whole Numbers and Fractions | |

UNIT 8: DATA ANALYSIS AND PROBABILITY
Assignment Titles

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

UNIT 9: GEOMETRY
Assignment Titles

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

UNIT 10: PERIMETER, AREA, AND VOLUME
Assignment Titles

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

UNIT 11: COURSE REVIEW AND EXAM
Assignment Titles

1. Course Review 1	14. Alternate Exam: Form A
2. Course Review 2	15. Alternate Exam: Form B
3. Exam	