



2016 - 2017 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

- 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   | <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> <li>1. Course Overview</li> <li>2. Whole Number Place Value</li> <li>3. Comparing and Ordering Whole Numbers</li> <li>4. Decimal Number Place Value</li> <li>5. Comparing and Ordering Decimal Numbers</li> <li>6. Quiz: Place Value</li> <li>7. Alternate Quiz - Form A: Place Value*</li> <li>8. Alternate Quiz - Form B: Place Value*</li> <li>9. Rounding Whole Numbers and Decimals</li> <li>10. Estimating Sums and Differences</li> <li>11. Add and Subtract Mentally</li> <li>12. Quiz: Rounding and Estimating</li> <li>13. Alternate Quiz - Form A: Rounding and Estimating*</li> <li>14. Alternate Quiz - Form B: Rounding and Estimating*</li> <li>15. Adding and Subtracting Whole Numbers</li> </ol> </td> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> <li>16. Adding Decimal Numbers</li> <li>17. Determining Rules to Generate Number Patterns</li> <li>18. Subtracting Decimal Numbers</li> <li>19. Exploring Your Finances</li> <li>20. Project: Logical Reasoning</li> <li>21. Quiz: Addition and Subtraction</li> <li>22. Alternate Quiz - Form A: Addition and Subtraction*</li> <li>23. Alternate Quiz - Form B: Addition and Subtraction*</li> <li>24. Special Project*</li> <li>25. Review</li> <li>26. Test</li> <li>27. Alternate Test - Form A*</li> <li>28. Alternate Test - Form B*</li> <li>29. Glossary and Credits</li> </ol> </td> </tr> </table> | <ol style="list-style-type: none"> <li>1. Course Overview</li> <li>2. Whole Number Place Value</li> <li>3. Comparing and Ordering Whole Numbers</li> <li>4. Decimal Number Place Value</li> <li>5. Comparing and Ordering Decimal Numbers</li> <li>6. Quiz: Place Value</li> <li>7. Alternate Quiz - Form A: Place Value*</li> <li>8. Alternate Quiz - Form B: Place Value*</li> <li>9. Rounding Whole Numbers and Decimals</li> <li>10. Estimating Sums and Differences</li> <li>11. Add and Subtract Mentally</li> <li>12. Quiz: Rounding and Estimating</li> <li>13. Alternate Quiz - Form A: Rounding and Estimating*</li> <li>14. Alternate Quiz - Form B: Rounding and Estimating*</li> <li>15. Adding and Subtracting Whole Numbers</li> </ol> | <ol style="list-style-type: none"> <li>16. Adding Decimal Numbers</li> <li>17. Determining Rules to Generate Number Patterns</li> <li>18. Subtracting Decimal Numbers</li> <li>19. Exploring Your Finances</li> <li>20. Project: Logical Reasoning</li> <li>21. Quiz: Addition and Subtraction</li> <li>22. Alternate Quiz - Form A: Addition and Subtraction*</li> <li>23. Alternate Quiz - Form B: Addition and Subtraction*</li> <li>24. Special Project*</li> <li>25. Review</li> <li>26. Test</li> <li>27. Alternate Test - Form A*</li> <li>28. Alternate Test - Form B*</li> <li>29. Glossary and Credits</li> </ol> |
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|---|--|---|--|
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| 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                     |                    |                             |
| Math 500                        | 1. Course Review 1 | 4. Alternate Exam - Form A* |
|                                 | 2. Course Review 2 | 5. Alternate Exam - Form B* |
|                                 | 3. Exam            |                             |

(\*) Indicates alternative assignment