

# CURRICULUM OVERVIEW

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## Mathematics 600 Fundamentals



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## Mathematics 600 Fundamentals Course Overview

Math 600 Fundamentals is a full-year elementary math course focusing on number skills and numerical literacy, with an introduction to the number skills needed for algebra. In it, students will gain solid experience with number theory and operations, including decimals and fractions. This course also integrates geometric concepts and skills throughout the units, as well as introducing students to 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, decimals, and fractions.
- Factor numbers completely and find greatest common factors.
- Convert between fractions, decimals, and percentages.
- Represent numbers with exponents.
- Calculate perimeters and areas of regular plane shapes and measure angles.
- Plot ordered pairs on coordinate grids.
- Represent data on statistical charts, including picture, bar, line, and circle graphs.
- Calculate probabilities and make predictions.

| Unit 1: Whole Numbers and Algebra |                                                                  |                                                               |  |
|-----------------------------------|------------------------------------------------------------------|---------------------------------------------------------------|--|
| Mathematics 600 Fundamentals      | Assignments                                                      |                                                               |  |
|                                   | 1. Course Overview                                               | 15. Alternate Quiz 2: Form B: Operations and Number Patterns* |  |
|                                   | 2. Rounding and Estimation                                       | 16. Variables                                                 |  |
|                                   | 3. Whole Number Operations                                       | 17. Expressions                                               |  |
|                                   | 4. Real Number Properties                                        | 18. Variable Expressions                                      |  |
|                                   | 5. Quiz 1: Whole Numbers and Their Properties                    | 19. Equations and Mental Math                                 |  |
|                                   | 6. Alternate Quiz 1: Form A: Whole Numbers and Their Properties* | 20. Quiz 3: Algebra                                           |  |
|                                   | 7. Alternate Quiz 1: Form B: Whole Numbers and Their Properties* | 21. Alternate Quiz 3: Form A: Algebra*                        |  |
|                                   | 8. Exponents                                                     | 22. Alternate Quiz 3: Form B: Algebra*                        |  |
|                                   | 9. Squares, Cubes, and Roots                                     | 23. Special Project*                                          |  |
|                                   | 10. Order of Operations                                          | 24. Review                                                    |  |
|                                   | 11. Number Patterns                                              | 25. Test                                                      |  |
|                                   | 12. Quiz 2: Operations and Number Patterns                       | 26. Alternate Test: Form A*                                   |  |
|                                   | 13. Alternate Quiz 2: Form A: Operations and Number Patterns*    | 27. Alternate Test: Form B*                                   |  |
|                                   |                                                                  | 28. Glossary and Credits                                      |  |

| Unit 2: Data Analysis                                        |                                                                 |
|--------------------------------------------------------------|-----------------------------------------------------------------|
| Assignments                                                  |                                                                 |
| 1. Collecting Data and the Mean                              | 15. Line Graphs                                                 |
| 2. Median, Mode, and Range                                   | 16. Venn Diagrams                                               |
| 3. Describing Data                                           | 17. Vertex-Edge Graphs                                          |
| 4. Quiz 1: Collecting and Describing Data                    | 18. Quiz 3: Displaying and Interpreting Data                    |
| 5. Alternate Quiz 1: Form A: Collecting and Describing Data* | 19. Alternate Quiz 3: Form A: Displaying and Interpreting Data* |
| 6. Alternate Quiz 1: Form B: Collecting and Describing Data* | 20. Alternate Quiz 3: Form B: Displaying and Interpreting Data* |
| 7. Frequency Tables                                          | 21. Special Project*                                            |
| 8. Histograms                                                | 22. Review                                                      |
| 9. Line Plots                                                | 23. Test                                                        |
| 10. Stem-and-Leaf Plots                                      | 24. Alternate Test: Form A*                                     |
| 11. Quiz 2: Organizing Data                                  | 25. Alternate Test: Form B*                                     |
| 12. Alternate Quiz 2: Form A: Organizing Data*               | 26. Glossary and Credits                                        |
| 13. Alternate Quiz 2: Form B: Organizing Data*               |                                                                 |
| 14. Bar Graphs                                               |                                                                 |

  

| Unit 3: Decimals                                                        |                                                  |
|-------------------------------------------------------------------------|--------------------------------------------------|
| Assignments                                                             |                                                  |
| 1. Decimals and Place Value                                             | 15. Length                                       |
| 2. Ordering and Comparing                                               | 16. Mass and Capacity                            |
| 3. Rounding and Estimating                                              | 17. Multiplying and Dividing by Powers of Ten    |
| 4. Adding and Subtracting                                               | 18. Converting Metric Units                      |
| 5. Quiz 1: Decimal Numbers                                              | 19. Quiz 3: The Metric System                    |
| 6. Alternate Quiz 1: Form A: Decimal Numbers*                           | 20. Alternate Quiz 3: Form A: The Metric System* |
| 7. Alternate Quiz 1: Form B: Decimal Numbers*                           | 21. Alternate Quiz 3: Form B: The Metric System* |
| 8. Multiplying by Whole Numbers                                         | 22. Special Project*                             |
| 9. Multiplying by Decimals                                              | 23. Review                                       |
| 10. Dividing by Whole Numbers                                           | 24. Test                                         |
| 11. Dividing by Decimals                                                | 25. Alternate Test: Form A*                      |
| 12. Quiz 2: Multiplying and Dividing Decimal Numbers                    | 26. Alternate Test: Form B*                      |
| 13. Alternate Quiz 2: Form A: Multiplying and Dividing Decimal Numbers* | 27. Glossary and Credits                         |
| 14. Alternate Quiz 2: Form B: Multiplying and Dividing Decimal Numbers* |                                                  |

| Unit 4: Fractions                                    |                                                       |
|------------------------------------------------------|-------------------------------------------------------|
| Assignments                                          |                                                       |
| 1. Divisibility and Prime Factorization              | 14. Changing Decimals to Fractions                    |
| 2. Greatest Common Factor                            | 15. Changing Fractions to Decimals                    |
| 3. Fractions                                         | 16. Estimating with Fractions                         |
| 4. Equivalent Fractions                              | 17. Measures of Time                                  |
| 5. Quiz 1: Factors and Fractions                     | 18. Quiz 3: Decimals and Fractions                    |
| 6. Alternate Quiz 1: Form A: Factors and Fractions*  | 19. Alternate Quiz 3: Form A: Decimals and Fractions* |
| 7. Alternate Quiz 1: Form B: Factors and Fractions*  | 20. Alternate Quiz 3: Form B: Decimals and Fractions* |
| 8. Least Common Multiple                             | 21. Special Project*                                  |
| 9. Comparing and Ordering Fractions                  | 22. Review                                            |
| 10. Improper Fractions and Mixed Numbers             | 23. Test                                              |
| 11. Quiz 2: The LCM and Fractions                    | 24. Alternate Test: Form A*                           |
| 12. Alternate Quiz 2: Form A: The LCM and Fractions* | 25. Alternate Test: Form B*                           |
| 13. Alternate Quiz 2: Form B: The LCM and Fractions* | 26. Glossary and Credits                              |

| Unit 5: Fraction Operations                                       |                                                                   |
|-------------------------------------------------------------------|-------------------------------------------------------------------|
| Assignments                                                       |                                                                   |
| 1. Fractions with Like Denominators                               | 14. Alternate Quiz 2: Form B: Multiplying and Dividing Fractions* |
| 2. Fractions with Unlike Denominators                             | 15. Length                                                        |
| 3. Mixed Numbers                                                  | 16. Weight                                                        |
| 4. Renaming Mixed Numbers                                         | 17. Capacity                                                      |
| 5. Quiz 1: Adding and Subtracting Fractions                       | 18. Quiz 3: The Customary System                                  |
| 6. Alternate Quiz 1: Form A: Adding and Subtracting Fractions*    | 19. Alternate Quiz 3: Form A: The Customary System*               |
| 7. Alternate Quiz 1: Form B: Adding and Subtracting Fractions*    | 20. Alternate Quiz 3: Form B: The Customary System*               |
| 8. Multiplying Fractions                                          | 21. Special Project*                                              |
| 9. Multiplying Mixed Numbers                                      | 22. Review                                                        |
| 10. Dividing Fractions                                            | 23. Test                                                          |
| 11. Dividing Mixed Numbers                                        | 24. Alternate Test: Form A*                                       |
| 12. Quiz 2: Multiplying and Dividing Fractions                    | 25. Alternate Test: Form B*                                       |
| 13. Alternate Quiz 2: Form A: Multiplying and Dividing Fractions* | 26. Glossary and Credits                                          |

| Unit 6: Ratio, Proportion, and Percent |                                            |                                               |
|----------------------------------------|--------------------------------------------|-----------------------------------------------|
| Assignments                            |                                            |                                               |
| Mathematics 600 Fundamentals           | 1. Ratios                                  | 14. Converting Between Decimals and Percents  |
|                                        | 2. Geometry: Circumference                 | 15. Converting Between Fractions and Percents |
|                                        | 3. Rates                                   | 16. Data Analysis: Circle Graphs              |
|                                        | 4. Quiz 1: Ratios                          | 17. Percent of a Number                       |
|                                        | 5. Alternate Quiz 1: Form A: Ratios*       | 18. Quiz 3: Percent                           |
|                                        | 6. Alternate Quiz 1: Form B: Ratios*       | 19. Alternate Quiz 3: Form A: Percent*        |
|                                        | 7. Proportions                             | 20. Alternate Quiz 3: Form B: Percent*        |
|                                        | 8. Solving Proportions                     | 21. Special Project*                          |
|                                        | 9. Scale Drawings                          | 22. Review                                    |
|                                        | 10. Project: Make a Scale Drawing          | 23. Test                                      |
|                                        | 11. Quiz 2: Proportions                    | 24. Alternate Test: Form A*                   |
|                                        | 12. Alternate Quiz 2: Form A: Proportions* | 25. Alternate Test: Form B*                   |
|                                        | 13. Alternate Quiz 2: Form B: Proportions* | 26. Glossary and Credits                      |

| Unit 7: Probability and Geometry |                                                      |                                                   |
|----------------------------------|------------------------------------------------------|---------------------------------------------------|
| Assignments                      |                                                      |                                                   |
| Mathematics 600 Fundamentals     | 1. Introduction to Probability                       | 14. Triangles                                     |
|                                  | 2. Complementary Events                              | 15. Quadrilaterals                                |
|                                  | 3. Sample Space                                      | 16. Polygons                                      |
|                                  | 4. Project: Theoretical vs. Experimental Probability | 17. Congruent and Similar Figures                 |
|                                  | 5. Quiz 1: Probability                               | 18. Quiz 3: Geometry: Polygons                    |
|                                  | 6. Alternate Quiz 1: Form A: Probability*            | 19. Alternate Quiz 3: Form A: Geometry: Polygons* |
|                                  | 7. Alternate Quiz 1: Form B: Probability*            | 20. Alternate Quiz 3: Form B: Geometry: Polygons* |
|                                  | 8. Introduction to Geometry                          | 21. Special Project*                              |
|                                  | 9. Measuring and Classifying Angles                  | 22. Review                                        |
|                                  | 10. Angle Relationships                              | 23. Test                                          |
|                                  | 11. Quiz 2: Geometry: Angles                         | 24. Alternate Test: Form A*                       |
|                                  | 12. Alternate Quiz 2: Form A: Geometry: Angles*      | 25. Alternate Test: Form B*                       |
|                                  | 13. Alternate Quiz 2: Form B: Geometry: Angles*      | 26. Glossary and Credits                          |

| Unit 8: Geometry and Measurement |                                             |                                              |
|----------------------------------|---------------------------------------------|----------------------------------------------|
| Assignments                      |                                             |                                              |
| Mathematics 600 Fundamentals     | 1. Perimeter                                | 13. Finding Missing Dimensions               |
|                                  | 2. Area of Parallelograms                   | 14. Project: Triangular Prisms               |
|                                  | 3. Area of Triangles                        | 15. Quiz 2: Solid Figures                    |
|                                  | 4. Area of Composite Figures                | 16. Alternate Quiz 2: Form A: Solid Figures* |
|                                  | 5. Area of Circles                          | 17. Alternate Quiz 2: Form B: Solid Figures* |
|                                  | 6. Project: Estimating Area                 | 18. Special Project*                         |
|                                  | 7. Quiz 1: Plane Figures                    | 19. Review                                   |
|                                  | 8. Alternate Quiz 1: Form A: Plane Figures* | 20. Test                                     |
|                                  | 9. Alternate Quiz 1: Form B: Plane Figures* | 21. Alternate Test: Form A*                  |
|                                  | 10. Solid Figures                           | 22. Alternate Test: Form B*                  |
|                                  | 11. Surface Area of Rectangular Prisms      | 23. Glossary and Credits                     |
|                                  | 12. Volume of Rectangular Prisms            |                                              |

| Unit 9: Integers and Transformations |                                                                |                                                                |
|--------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|
| Mathematics 600 Fundamentals         | Assignments                                                    |                                                                |
|                                      | 1. Integers                                                    | 14. Alternate Quiz 2: Form B: Integer Operations*              |
|                                      | 2. Comparing and Ordering Integers                             | 15. Translations                                               |
|                                      | 3. Absolute Value                                              | 16. Reflections and Rotations                                  |
|                                      | 4. Coordinate Plane                                            | 17. Line Symmetry                                              |
|                                      | 5. Quiz 1: Integers                                            | 18. Quiz 3: Transformations                                    |
|                                      | 6. Alternate Quiz 1: Form A: Integers*                         | 19. Alternate Quiz 3: Form A: Transformations*                 |
|                                      | 7. Alternate Quiz 1: Form B: Integers*                         | 20. Alternate Quiz 3: Form B: Transformations*                 |
|                                      | 8. Addition                                                    | 21. Special Project*                                           |
|                                      | 9. Subtraction                                                 | 22. Review                                                     |
|                                      | 10. Multiplication                                             | 23. Test                                                       |
|                                      | 11. Division                                                   | 24. Alternate Test: Form A*                                    |
|                                      | 12. Quiz 2: Integer Operations                                 | 25. Alternate Test: Form B*                                    |
|                                      | 13. Alternate Quiz 2: Form A: Integer Operations*              | 26. Glossary and Credits                                       |
| Unit 10: Equations and Functions     |                                                                |                                                                |
| Mathematics 600 Fundamentals         | Assignments                                                    |                                                                |
|                                      | 1. Equations                                                   | 14. Alternate Quiz 2: Form B: More Equations and Inequalities* |
|                                      | 2. Writing Equations                                           | 15. Functions                                                  |
|                                      | 3. Addition Equations                                          | 16. Function Rules                                             |
|                                      | 4. Subtraction Equations                                       | 17. Graphing Functions                                         |
|                                      | 5. Quiz 1: Equations                                           | 18. Quiz 3: Functions                                          |
|                                      | 6. Alternate Quiz 1: Form A: Equations*                        | 19. Alternate Quiz 3: Form A: Functions*                       |
|                                      | 7. Alternate Quiz 1: Form B: Equations*                        | 20. Alternate Quiz 3: Form B: Functions*                       |
|                                      | 8. Multiplication Equations                                    | 21. Special Project*                                           |
|                                      | 9. Division Equations                                          | 22. Review                                                     |
|                                      | 10. Inequalities                                               | 23. Test                                                       |
|                                      | 11. Graphing Inequalities                                      | 24. Alternate Test: Form A*                                    |
|                                      | 12. Quiz 2: More Equations and Inequalities                    | 25. Alternate Test: Form B*                                    |
|                                      | 13. Alternate Quiz 2: Form A: More Equations and Inequalities* | 26. Glossary and Credits                                       |
| Unit 11: Course Review and Exam      |                                                                |                                                                |
| Mathematics 600 Fundamentals         | Assignments                                                    |                                                                |
|                                      | 1. Course Review 1                                             | 4. Alternate Exam: Form A*                                     |
|                                      | 2. Course Review 2                                             | 5. Alternate Exam: Form B*                                     |
|                                      | 3. Exam                                                        |                                                                |

(\*) Indicates alternative assignment