

CURRICULUM OVERVIEW

Mathematics 700 Fundamentals



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Mathematics 700 Fundamentals Course Overview

Mathematics 700 Fundamentals is designed to prepare junior-high students for Pre-algebra. This course focuses on strengthening needed skills in problem solving, number sense, and proportional reasoning. It also introduces students to integers, equations, and geometric concepts. Students will begin to see the "big picture" of mathematics and learn how numeric, algebraic, and geometric concepts are woven together to build a foundation for higher mathematical thinking.

- **Integers:** Students will learn how to locate, add, subtract, multiply, and divide integers to solve word problems, as well as compare integers using absolute value and the order of operation.
- **Fractions:** Students will understand how fractions can be written into other forms without changing their value, and how to add, subtract, multiply, and divide fractions.
- **Decimals:** Students will explore how to rewrite fractions as decimals, and how to use decimals to solve real-world problems.
- **Patterns and Equations:** Students will learn how to translate words into equations and use them to solve number patterns.
- **Ratios and Proportions:** Students will explore how to use ratios to compare numbers, solve proportions, and convert between percent's, decimals, and fractions.
- **Probability and Graphing:** Students will be able to determine the probability of an event, and if they are independent or dependent events, as well as create a graph of an equation
- **Data Analysis:** Students will learn how to interpret statistics using stem-and-leaf plots, histograms, and other graphical means.
- **Geometry:** Students will explore how points, lines, and planes interact and how to solve equations using their information.
- **Measurement and Area:** Students will learn about finding perimeters and areas of different polygons, and using the Pythagorean theorem to solve problems.
- **Surface Area and Volume:** Students will explore three-dimensional figures and how to find their surface area, volume of them.

Unit 1: Integers	
Assignments	
1. Course Overview	19. Alternate Quiz 3 - Form B: Multiplying and Dividing Integers*
2. Integers on the Number Line	20. The Real Number System
3. Comparing and Ordering Integers	21. Real Number Properties
4. Absolute Value	22. The Distributive Property
5. Quiz 1: Integers	23. Order of Operations
6. Alternate Quiz 1 - Form A: Integers*	24. Exponents and the Order of Operations
7. Alternate Quiz 1 - Form B: Integers*	25. Quiz 4: The Real Number System
8. Adding Integers with the Same Sign	26. Alternate Quiz 4 - Form A: The Real Number System*
9. Adding Integers with Different Signs	27. Alternate Quiz 4 - Form B: The Real Number System*
10. Subtracting Integers	28. Special Project*
11. Quiz 2: Adding and Subtracting Integers	29. Review
12. Alternate Quiz 2 - Form A: Adding and Subtracting Integers*	30. Test
13. Alternate Quiz 2 - Form B: Adding and Subtracting Integers*	31. Alternate Test - Form A*
14. Multiplying Integers	32. Alternate Test - Form B*
15. Dividing Integers	33. Glossary and Credits
16. Using Integers	
17. Quiz 3: Multiplying and Dividing Integers	
18. Alternate Quiz 3 - Form A: Multiplying and Dividing Integers*	

Unit 2: Fractions	
Assignments	
1. Fractions and Mixed Numbers	14. Comparing and Ordering Fractions
2. Equivalent Fractions	15. Multiplying Fractions
3. Divisibility Rules and Prime Factorization	16. Dividing Fractions
4. Greatest Common Factor and Least Common Multiple	17. Quiz 3: Multiplying and Dividing Fractions
5. Quiz 1: Working with Fractions	18. Alternate Quiz 3 - Form A: Multiplying and Dividing Fractions*
6. Alternate Quiz 1 - Form A: Working with Fractions*	19. Alternate Quiz 3 - Form B: Multiplying and Dividing Fractions*
7. Alternate Quiz 1 - Form B: Working with Fractions*	20. Project: Chef for a Day
8. Adding and Subtracting Fractions with Like Denominators	21. Special Project*
9. Adding and Subtracting Fractions with Unlike Denominators	22. Review
10. Reducing Fractions	23. Test
11. Quiz 2: Adding and Subtracting Fractions	24. Alternate Test - Form A*
12. Alternate Quiz 2 - Form A: Adding and Subtracting Fractions*	25. Alternate Test - Form B*
13. Alternate Quiz 2 - Form B: Adding and Subtracting Fractions*	26. Glossary and Credits

Unit 3: Decimals	
Assignments	
1. Comparing and Ordering Decimals	11. Scientific Notation
2. Rounding and Estimating Decimals	12. The Metric System
3. Adding and Subtracting Decimals	13. Quiz 2: Applying Decimals
4. Multiplying and Dividing Decimals	14. Alternate Quiz 2 - Form A: Applying Decimals*
5. Quiz 1: Decimals and Their Operations	15. Alternate Quiz 2 - Form B: Applying Decimals*
6. Alternate Quiz 1 - Form A: Decimals and Their Operations*	16. Special Project*
7. Alternate Quiz 1 - Form B: Decimals and Their Operations*	17. Review
8. Terminating and Repeating Decimals	18. Test
9. Fractions as Decimals	19. Alternate Test - Form A*
10. Using Decimals	20. Alternate Test - Form B*
	21. Glossary and Credits

Unit 4: Patterns and Equations	
Assignments	
1. Working with Variables and Expressions	18. Quiz 3: Solving Equations
2. Translating Word Sentences	19. Alternate Quiz 3 - Form A: Solving Equations*
3. Evaluating Expressions	20. Alternate Quiz 3 - Form B: Solving Equations*
4. Using Formulas to Solve Problems	21. Solving Two-Step Equations
5. Quiz 1: Variable Expressions	22. Working with Inequalities
6. Alternate Quiz 1 - Form A: Variable Expressions*	23. Solving One-Step Inequalities
7. Alternate Quiz 1 - Form B: Variable Expressions*	24. Quiz 4: Equations and Inequalities
8. Identifying Number Patterns	25. Alternate Quiz 4 - Form A: Equations and Inequalities*
9. Describing Number Patterns	26. Alternate Quiz 4 - Form B: Equations and Inequalities*
10. Identifying Functions	27. Special Project*
11. Identifying Function Rules	28. Review
12. Quiz 2: Patterns and Functions	29. Test
13. Alternate Quiz 2 - Form A: Patterns and Functions*	30. Alternate Test - Form A*
14. Alternate Quiz 2 - Form B: Patterns and Functions*	31. Alternate Test - Form B*
15. Solving Equations Using Mental Math	32. Glossary and Credits
16. Solving Equations Using Addition and Subtraction	
17. Solving Equations Using Multiplication and Division	

Unit 5: Ratios and Proportions	
Assignments	
1. Ratios	15. Percent of a Number
2. Rates	16. Percent of Change
3. Proportions	17. Solving Percent Problems Using Proportions
4. Quiz 1: Ratios, Rates, and Proportions	18. Solving Percent Problems Using Equations
5. Alternate Quiz 1 - Form A: Ratios, Rates, and Proportions*	19. Quiz 3: Fractions, Decimals, and Percents
6. Alternate Quiz 1 - Form B: Ratios, Rates, and Proportions*	20. Alternate Quiz 3 - Form A: Fractions, Decimals, and Percents*
7. Converting Customary Units	21. Alternate Quiz 3 - Form B: Fractions, Decimals, and Percents*
8. Converting Metric Units	22. Special Project*
9. Similarity	23. Review
10. Scale Drawings	24. Test
11. Quiz 2: Using Proportions	25. Alternate Test - Form A*
12. Alternate Quiz 2 - Form A: Using Proportions*	26. Alternate Test - Form B*
13. Alternate Quiz 2 - Form B: Using Proportions*	27. Glossary and Credits
14. Converting Between Fractions, Decimals, and Percents	

Unit 6: Probability and Graphing	
Assignments	
1. Theoretical Probability	11. Direct Variation
2. Experimental Probability	12. Quiz 2: Functions
3. Sample Space	13. Alternate Quiz 2 - Form A: Functions*
4. Independent and Dependent Events	14. Alternate Quiz 2 - Form B: Functions*
5. Quiz 1: Probability	15. Special Project*
6. Alternate Quiz 1 - Form A: Probability*	16. Review
7. Alternate Quiz 1 - Form B: Probability*	17. Test
8. Graphing Ordered Pairs	18. Alternate Test - Form A*
9. Graphing Linear Equations	19. Alternate Test - Form B*
10. Slope	20. Glossary and Credits

Unit 7: Data Analysis	
Assignments	
1. Collecting Data	16. Bar Graphs
2. Determining Mean, Median, and Mode	17. Circle Graphs
3. Using Mean, Median, and Mode	18. Scatter Plots
4. Using Range	19. Quiz 3: Graphing Data and Making Predictions
5. Quiz 1: Describing Data	20. Alternate Quiz 3 - Form A: Graphing Data and Making Predictions*
6. Alternate Quiz 1 - Form A: Describing Data*	21. Alternate Quiz 3 - Form B: Graphing Data and Making Predictions*
7. Alternate Quiz 1 - Form B: Describing Data*	22. Special Project*
8. Box-and-Whisker Plots	23. Review
9. Stem-and-Leaf Plots	24. Test
10. Histograms	25. Alternate Test - Form A*
11. Other Graphs	26. Alternate Test - Form B*
12. Quiz 2: Organizing Data	27. Glossary and Credits
13. Alternate Quiz 2 - Form A: Organizing Data*	
14. Alternate Quiz 2 - Form B: Organizing Data*	
15. Line Graphs	

Unit 8: Geometry	
Assignments	
1. Introduction to Geometry	15. Symmetry
2. Special Pairs of Angles	16. Reflections
3. Polygons	17. Translations
4. Circles	18. Compound Transformations
5. Quiz 1: Basic Geometry	19. Quiz 3: Transformations
6. Alternate Quiz 1 - Form A: Basic Geometry*	20. Alternate Quiz 3 - Form A: Transformations*
7. Alternate Quiz 1 - Form B: Basic Geometry*	21. Alternate Quiz 3 - Form B: Transformations*
8. Project: Inscribed Polygons	22. Special Project*
9. Triangles	23. Review
10. Quadrilaterals	24. Test
11. Similar Polygons	25. Alternate Test - Form A*
12. Quiz 2: Classifying Polygons	26. Alternate Test - Form B*
13. Alternate Quiz 2 - Form A: Classifying Polygons*	27. Glossary and Credits
14. Alternate Quiz 2 - Form B: Classifying Polygons*	

Unit 9: Measurement and Area	
Assignments	
1. Perimeter	15. Squares and Square Roots
2. Circumference	16. The Pythagorean Theorem
3. Composite Figures	17. Applying the Pythagorean Theorem
4. Quiz 1: Perimeter	18. Quiz 3: The Pythagorean Theorem
5. Alternate Quiz 1 - Form A: Perimeter*	19. Alternate Quiz 3 - Form A: The Pythagorean Theorem*
6. Alternate Quiz 1 - Form B: Perimeter*	20. Alternate Quiz 3 - Form B: The Pythagorean Theorem*
7. Area of Parallelograms	21. Special Project*
8. Area of Triangles and Trapezoids	22. Review
9. Area of Circles	23. Test
10. Area of Composite Figures	24. Alternate Test - Form A*
11. Dimension Changes	25. Alternate Test - Form B*
12. Quiz 2: Area	26. Glossary and Credits
13. Alternate Quiz 2 - Form A: Area*	
14. Alternate Quiz 2 - Form B: Area*	

Unit 10: Surface Area and Volume	
Assignments	
1. Classifying and Identifying Solids	14. Surface Area of Cylinders
2. Nets	15. Volume of Cylinders
3. Surface Area and Volume	16. Dimension Changes
4. Quiz 1: Solids	17. Quiz 3: Cylinders
5. Alternate Quiz 1 - Form A: Solids*	18. Alternate Quiz 3 - Form A: Cylinders*
6. Alternate Quiz 1 - Form B: Solids*	19. Alternate Quiz 3 - Form B: Cylinders*
7. Surface Area of Rectangular Prisms	20. Special Project*
8. Volume of Rectangular Prisms	21. Review
9. Surface Area of Triangular Prisms	22. Test
10. Volume of Triangular Prisms	23. Alternate Test - Form A*
11. Quiz 2: Prisms	24. Alternate Test - Form B*
12. Alternate Quiz 2 - Form A: Prisms*	25. Glossary and Credits
13. Alternate Quiz 2 - Form B: Prisms*	

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