



# monarch

2017 - 2018 Curriculum Catalog

Mathematics 800

## Table of Contents

<b>MATHEMATICS 800 COURSE OVERVIEW</b> .....	<b>1</b>
UNIT 1: THE REAL NUMBER SYSTEM.....	1
UNIT 2: MODELING PROBLEMS IN INTEGERS.....	2
UNIT 3: MODELING PROBLEMS WITH RATIONAL NUMBERS .....	2
UNIT 4: PROPORTIONAL REASONING .....	3
UNIT 5: MORE WITH FUNCTIONS .....	3
UNIT 6: MEASUREMENT .....	4
UNIT 7: PLANE GEOMETRY .....	4
UNIT 8: MEASURES OF SOLID FIGURES.....	4
UNIT 9: DATA ANALYSIS .....	5
UNIT 10: PROBABILITY .....	5
UNIT 11: COURSE REVIEW AND EXAM .....	5

## Mathematics 800 Course Overview

Pre-algebra is an introductory algebra course designed to prepare junior-high school students for Algebra I. The course focuses on strengthening needed skills in problem solving, integers, equations, and graphing. 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.

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

- Gain an increased awareness of how math is a life skill.
- Understand how math is like a language, with a set of conventions.
- Explore concepts taught in previous math courses at higher levels and in real world applications.
- Practice algebraic thinking in order to model and solve real world problems.
- Utilize new skills and concepts that will help them in future math courses.
- Introduce variable expressions and equations (single and multiple variable).
- Introduce linear functions, relationship between dependent and independent variables and coordinate graphing.

<b>Unit 1: The Real Number System</b>	
<b>Assignments</b>	
1. Course Overview	14. Alternate Quiz 2 - Form B: Other Forms*
2. Subsets of the Real Number System	15. Square Roots
3. Using Variables	16. Order of Operations
4. The Number Line	17. Quiz 3: Simplifying
5. Comparing Rational Numbers	18. Alternate Quiz 3 - Form A: Simplifying*
6. Quiz 1: Relationships	19. Alternate Quiz 3 - Form B: Simplifying*
7. Alternate Quiz 1 - Form A: Relationships*	20. Special Project*
8. Alternate Quiz 1 - Form B: Relationships*	21. Review
9. Properties of the Real Numbers	22. Test
10. Exponents	23. Alternate Test - Form A*
11. Scientific Notation	24. Alternate Test - Form B*
12. Quiz 2: Other Forms	25. Glossary and Credits
13. Alternate Quiz 2 - Form A: Other Forms*	

<b>Unit 2: Modeling Problems in Integers</b>	
<b>Assignments</b>	
1. Translating Expressions and Equations	16. Evaluating Expressions
2. Solving One-Step Equations	17. Quiz 3: Integers
3. Solving Two-Step Equations	18. Alternate Quiz 3 - Form A: Integers*
4. Quiz 1: Equations with Real Numbers	19. Alternate Quiz 3 - Form B: Integers*
5. Alternate Quiz 1 - Form A: Equations with Real Numbers*	20. Graphing
6. Alternate Quiz 1 - Form B: Equations with Real Numbers*	21. One-Step Equations
7. Relations and Functions	22. Two-Step Equations
8. Functions	23. Problem Solving
9. Analyzing Graphs	24. Quiz 4: Modeling with Integers
10. Quiz 2: Functions	25. Alternate Quiz 4 - Form A: Modeling with Integers*
11. Alternate Quiz 2 - Form A: Functions*	26. Alternate Quiz 4 - Form B: Modeling with Integers*
12. Alternate Quiz 2 - Form B: Functions*	27. Special Project*
13. Addition of Integers	28. Review
14. Subtraction of Integers	29. Test
15. Multiplying and Dividing Integers	30. Alternate Test - Form A*
	31. Alternate Test - Form B*
	32. Glossary and Credits

<b>Unit 3: Modeling Problems With Rational Numbers</b>	
<b>Assignments</b>	
1. Prime Factorization and the GCF	15. One-Step Addition and Subtraction Equations
2. Simplifying Fractions	16. One-Step Multiplication and Division Equations
3. The LCM and the LCD	17. Two-Step Equations
4. Quiz 1: Number Theory	18. One-Step Inequalities
5. Alternate Quiz 1 - Form A: Number Theory*	19. Two-Step Inequalities
6. Alternate Quiz 1 - Form B: Number Theory*	20. Quiz 3: Solving Equations and Inequalities
7. Adding and Subtracting Like Fractions	21. Alternate Quiz 3 - Form A: Solving Equations and I Inequalities*
8. Adding and Subtracting Unlike Fractions	22. Alternate Quiz 3 - Form B: Solving Equations and Inequalities*
9. Adding and Subtracting Decimal Numbers	23. Special Project*
10. Multiplying and Dividing Fractions	24. Review
11. Multiplying and Dividing Decimal Numbers	25. Test
12. Quiz 2: Solving Problems with Rational Numbers	26. Alternate Test - Form A*
13. Alternate Quiz 2 - Form A: Solving Problems with Rational Numbers*	27. Alternate Test - Form B*
14. Alternate Quiz 2 - Form B: Solving Problems with Rational Numbers*	28. Glossary and Credits

<b>Unit 4: Proportional Reasoning</b>																																	
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Unit 6: Measurement	
Assignments	
1. Classify and Measure Angles	12. Quiz 2: Polygons
2. Perpendicular and Parallel Lines, Part 1	13. Alternate Quiz 2 - Form A: Polygons*
3. Perpendicular and Parallel Lines, Part 2	14. Alternate Quiz 2 - Form B: Polygons*
4. Circles	15. Pythagorean Theorem, Part 1
5. Quiz 1: Angle Measures and Circles	16. Pythagorean Theorem, Part 2
6. Alternate Quiz 1 - Form A: Angle Measures and Circles*	17. Quiz 3: Indirect Measure
7. Alternate Quiz 1 - Form B: Angle Measures and Circles*	18. Alternate Quiz 3 - Form A: Indirect Measure*
8. Classifying Polygons	19. Alternate Quiz 3 - Form B: Indirect Measure*
9. Interior and Exterior Measures of Polygons	20. Special Project*
10. Classifying Triangles and the Triangle Inequality Theorem	21. Review
11. The Quadrilateral Family	22. Test
	23. Alternate Test - Form A*
	24. Alternate Test - Form B*
	25. Glossary and Credits

Unit 7: Plane Geometry	
Assignments	
1. Perimeter and Circumference	15. Alternate Quiz 2 - Form B: Symmetry and Reflections*
2. Area of Parallelograms	16. Translations
3. Area of Triangles and Trapezoids	17. Tessellations
4. Area of Circles	18. Rotations
5. Composite Figures	19. Dilations
6. Effects of Dimensional Changes	20. Quiz 3: Other Transformations
7. Quiz 1: Perimeter and Area	21. Alternate Quiz 3 - Form A: Other Transformations*
8. Alternate Quiz 1 - Form A: Perimeter and Area*	22. Alternate Quiz 3 - Form B: Other Transformations*
9. Alternate Quiz 1 - Form B: Perimeter and Area*	23. Special Project*
10. Symmetry	24. Review
11. Distance and Midpoint	25. Test
12. Reflections	26. Alternate Test - Form A*
13. Quiz 2: Symmetry and Reflections	27. Alternate Test - Form B*
14. Alternate Quiz 2 - Form A: Symmetry and Reflections*	28. Glossary and Credits

Unit 8: Measures of Solid Figures	
Assignments	
1. Solid Figures	15. Volume of Cones
2. Euler's Formula	16. Volume of Spheres
3. Surface Area of Rectangular Prisms	17. Changes to Volume
4. Surface Area of Triangular Prisms	18. Volume of Composite Figures
5. Surface Area of Cylinders	19. Quiz 2: Volume
6. Surface Area of Pyramids, Cones, and Spheres	20. Alternate Quiz 2 - Form A: Volume*
7. Surface Area of Composite Figures	21. Alternate Quiz 2 - Form B: Volume*
8. Quiz 1: Surface Area	22. Special Project*
9. Alternate Quiz 1 - Form A: Surface Area*	23. Review
10. Alternate Quiz 1 - Form B: Surface Area*	24. Test
11. Volume of Rectangular Prisms	25. Alternate Test - Form A*
12. Volume of Triangular Prisms	26. Alternate Test - Form B*
13. Volume of Square Pyramids	27. Glossary and Credits
14. Volume of Cylinders	28.

Unit 9: Data Analysis	
Assignments	
Mathematics 800	1. Collecting Data
	2. Measures of Central Tendency and Dispersion
	3. Bar Graphs
	4. Circle Graphs
	5. Line Graphs
	6. Frequency and Histograms
	7. Quiz 1: Collecting and Representing Data
	8. Alternate Quiz 1 - Form A: Collecting and Representing Data*
	9. Alternate Quiz 1 - Form B: Collecting and Representing Data*
	10. Constructing Box-and-Whisker Plots
	11. Interpreting Box-and-Whisker Plots
12. Scatter Plots	
13. Misleading Graphs	
14. Appropriate Displays	
15. Quiz 2: More Data Displays	
16. Alternate Quiz 2 - Form A: More Data Displays*	
17. Alternate Quiz 2 - Form B: More Data Displays*	
18. Special Project*	
19. Review	
20. Test	
21. Alternate Test - Form A*	
22. Alternate Test - Form B*	
23. Glossary and Credits	

Unit 10: Probability	
Assignments	
Mathematics 800	1. Tree Diagrams and the Counting Principle
	2. Permutations
	3. Combinations
	4. Mixed Review of Outcomes
	5. Quiz 1: Outcomes
	6. Alternate Quiz 1 - Form A: Outcomes*
	7. Alternate Quiz 1 - Form B: Outcomes*
	8. Probability and Odds
	9. Experimental vs Theoretical Probability
	10. Disjointed and Overlapping Events
	11. Independent and Dependent Events
12. Quiz 2: Probability	
13. Alternate Quiz 2 - Form A: Probability*	
14. Alternate Quiz 2 - Form B: Probability*	
15. Simulate a Problem	
16. Quest: All That's Fair In...*	
17. Special Project*	
18. Review	
19. Test	
20. Alternate Test - Form A*	
21. Alternate Test - Form B*	
22. Glossary and Credits	

Unit 11: Course Review and Exam	
Assignments	
Math 800	1. Review I
	2. Review II
	3. Exam
4. Alternate Exam - Form A*	
5. Alternate Exam - Form B*	

(\*) Indicates alternative assignment