

PROGRAM OVERVIEW

Table of Contents for Instructional Units

Unit 1: Functions and Their Inverses

Unit 1 Resources

- Lesson 1.1: Comparing Properties of Functions Given in Different Forms (F–IF.9, F–LE.3)
- Lesson 1.2: Graphing Radical Functions (F–IF.7*)
- Lesson 1.3: Creating Absolute Value Equations and Inequalities in One Variable (A–CED.1*)
- Lesson 1.4: Absolute Value and Step Functions (F–IF.7*)
- Lesson 1.5: Creating and Graphing Absolute Value Equations and Inequalities with Two Variables (A–CED.2*, A–CED.3*, A–REI.11*)
- Lesson 1.6: Piecewise Functions (F–IF.7*)
- Lesson 1.7: Operating on Functions (F–BF.1b*)
- Lesson 1.8: Finding Inverse Functions (F–BF.4a)
- Lesson 1.9: Finding Inverse Functions in Various Forms (F–BF.4c, F–IF.9)
- Lesson 1.10: Determining Inverses of Quadratic Functions (F–BF.4c)

Conceptual Tasks

- Piecewise Hike, Parts 1 and 2 (F–IF.7*)
- Fuel Economy and Inverse Functions, Parts 1 and 2 (F–BF.4a)

Station Activities

- Set 1: Choosing a Model (F–IF.4*, F–IF.7*, F–BF.3)
- Set 2: Solving Systems of Equations (A–REI.11*)

Mid-Unit Assessment

End-of-Unit Assessment

Unit 2: Exponential and Logarithmic Functions

Unit 2 Resources

- Lesson 2.1: Creating and Interpreting Exponential Functions (A–CED.1*, A–SSE.1a*)
- Lesson 2.2: Translating Exponential Functions (F–BF.3)
- Lesson 2.3: Logarithmic Functions as Inverses (F–BF.4a, F–BF.4c)
- Lesson 2.4: Graphing Logarithmic Functions (F–LE.4*)
- Lesson 2.5: Solving Exponential Equations (F–LE.4*)
- Lesson 2.6: Creating and Solving Exponential Equations from Word Problems (A–CED.1*)
- Lesson 2.7: Writing Exponential Expressions in Equivalent Forms (A–SSE.3*)
- Lesson 2.8: Linear, Exponential, and Quadratic Functions (A–CED.2*, F–IF.9)

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Conceptual Tasks

Measuring Magnitudes of Earthquakes, Parts 1 and 2 (F–BF.4a, F–BF.4c)

Competing Models, Parts 1 and 2 (A–CED.2*, F–IF.9)

Station Activities

Set 1: Inverse Functions (F–BF.4)

Mid-Unit Assessment

End-of-Unit Assessment

Unit 3: Polynomial Functions

Lesson 3.1: Introduction to Polynomial Functions (A–SSE.1a*)

Lesson 3.2: Graphing Quadratic and Cubic Functions (F–IF.7*)

Lesson 3.3: Optimization of Volume (G–MG.1*)

Lesson 3.4: Describing End Behavior and Turns (F–IF.7*, N–CN.9)

Lesson 3.5: The Remainder Theorem (A–APR.2)

Lesson 3.6: Zeros of Polynomial Functions (A–APR.3)

Lesson 3.7: Building Polynomial Functions (F–BF.1a*)

Lesson 3.8: End Behaviors of Functions (F–LE.3*, F–IF.9)

Conceptual Tasks

Engineering Polynomials, Parts 1 and 2 (F–IF.7c*)

Practicing Polynomials, Parts 1 and 2 (A–APR.3, N–CN.9, F–IF.7c*)

Station Activities

Set 1: Polynomial Functions (N–CN.9, A–APR.2)

Mid-Unit Assessment

End-of-Unit Assessment

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Unit 4: Modeling with Geometry

Unit 4 Resources

- Lesson 4.1: Proving Theorems About Triangles (G–CO.10)
- Lesson 4.2: Proving Properties of Parallelograms (G–CO.11)
- Lesson 4.3: Proving Properties of Special Quadrilaterals (G–CO.11)
- Lesson 4.4: Two-Dimensional Cross Sections of Three-Dimensional Objects (G–GMD.4)
- Lesson 4.5: Volumes of Cylinders, Pyramids, Cones, and Spheres (G–GMD.3*)
- Lesson 4.6: Density (G–MG.1*)
- Lesson 4.7: Design (G–MG.1*)
- Lesson 4.8: Proving Centers of Triangles (G–CO.10)

Conceptual Task

- House of Sand, Parts 1 and 2 (G–GMD.3*)

Station Activities

- Set 1: Geometric Modeling (G–GMD.4, G–MG.1*)

Mid-Unit Assessment

End-of-Unit Assessment

Unit 5: Reasoning with Geometry with Circles

Unit 5 Resources

- Lesson 5.1: Deriving the Equation of a Circle (G–GPE.1, G–CO.14)
- Lesson 5.2: Similar Circles and Central and Inscribed Angles (G–C.2)
- Lesson 5.3: Chord Central Angles Conjecture (G–C.2)
- Lesson 5.4: Defining Radians (G–C.5)
- Lesson 5.5: Deriving the Formula for the Area of a Sector (G–C.5)
- Lesson 5.6: Properties of Tangents of a Circle (G–C.2, G–CO.14)
- Lesson 5.7: Inscribed Angles, Secants, Tangents, and Chords (G–C.2)

Conceptual Tasks

- Moon Horizons, Parts 1 and 2 (G–C.1, G–C.2)
- Circle Investigation, Parts 1 and 2 (G–C.5)

Station Activities

- Set 1: Circumference, Angles, Arcs, Chords, and Inscribed Angles (G–C.2, G–C.5)
- Set 2: Special Segments, Angle Measurements, and Equations of Circles (G–C.2, G–C.5, G–GPE.1)

Mid-Unit Assessment

End-of-Unit Assessment

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Table of Contents for Instructional Units

Unit 6: Rational Functions

Unit 6 Resources

- Lesson 6.1: Graphing Rational Equations (A–CED.2*)
- Lesson 6.2: Graphing Rational Functions and Identifying Key Features
(A–SSE.1a*, F–IF.4*, F–IF.7*)
- Lesson 6.3: Structures of Rational Expressions (A–APR.6)
- Lesson 6.4: Multiplying Rational Expressions (A–APR.7b)
- Lesson 6.5: Dividing Rational Expressions (A–APR.7b)
- Lesson 6.6: Adding and Subtracting Rational Expressions (A–SSE.2, A–APR.7a)
- Lesson 6.7: Solving Rational Equations (A–REI.2)
- Lesson 6.8: Creating Rational Equations (A–CED.1*)

Conceptual Tasks

- Rationalizing Rational Functions, Parts 1 and 2 (A–SSE.2, A–APR.7)
- Free Fall, Parts 1 and 2 (A–REI.2)
- Cooking Up Rational Equations, Parts 1 and 2 (A–CED.1*)

Station Activity

- Set 1: Rational Expressions and Equations (A–APR.6, A–APR.7, A–REI.2)

Mid-Unit Assessment

End-of-Unit Assessment

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Table of Contents for Instructional Units

Unit 7: Trigonometric Functions

Unit 7 Resources

Lesson 7.1: Radians (F–IF.1, F–TF.1)

Lesson 7.2: Special Angles in the Unit Circle (F–TF.2)

Lesson 7.3: Periodic Phenomena and Amplitude, Frequency, and Midline (F–TF.5★)

Lesson 7.4: Using Trigonometric Functions to Model Periodic Phenomena (F–TF.5★)

Conceptual Task

Cutting Cakes, Parts 1 and 2 (F–TF.2)

Station Activities

Set 1: Trigonometric Functions (F–TF.2)

Set 2: The Laws of Sines and Cosines (F–TF.2)

Mid-Unit Assessment

End-of-Unit Assessment

Unit 8: Statistics

Unit 8 Resources

Lesson 8.1: Identifying Surveys, Experiments, and Observational Studies (S–IC.3★)

Lesson 8.2: Other Methods of Random Sampling (S–IC.3★)

Lesson 8.3: Differences Between Populations and Samples (S–IC.3★)

Lesson 8.4: Designing Surveys, Experiments, and Observational Studies (S–IC.3★)

Lesson 8.5: Designing and Simulating Treatments (S–IC.5★)

Lesson 8.6: Estimating Sample Proportions (S–IC.4★)

Lesson 8.7: Estimating Sample Means (S–IC.4★)

Lesson 8.8: Reading Reports (S–IC.6★)

Conceptual Tasks

Studying Shoppers, Parts 1 and 2 (S–IC.3★)

Tracking Ticks, Parts 1 and 2 (S–IC.4★)

Station Activities

Set 1: Distributions and Estimating with Confidence (S–IC.4★)

Mid-Unit Assessment

End-of-Unit Assessment