

## PROGRAM OVERVIEW

# Suggested Pacing Guide

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### Overview

The sub-lessons in this program are designed to be covered over one, two, or three days, depending on the depth and complexity of the lesson. The pacing guide that follows provides *suggested* pacing, but this should be viewed as a flexible guideline only. If students need an extra day to solidify understanding, a one-day lesson may be spread over two days, or a two-day lesson may be spread over three days. Conversely, if students grasp a concept more quickly than suggested by the pacing guide, it is fine to shorten the duration of the lesson and move on to the next lesson.

Each sub-lesson features several components. The estimated time for each component is given in parentheses. Components include: a Warm-Up, Instruction (including an Introduction, Key Concepts, and Guided Practice), a Problem-Based Task, and Practice.

### Guided Practice, Scaffolded Practice, and Practice

Each Guided Practice set includes student worksheets. Scaffolded Practice worksheets (the first set of “Printable Practice” worksheets in each lesson) are also included to reinforce key prerequisite skills for the lesson. Each lesson also includes two sets of on-level printable Practice problems, along with an interactive Learnosity version of the first practice set. Guided Practice, Scaffolded Practice, and Practice problems may be assigned for in-class work or homework assignments.

### Suggested Progression of One-, Two-, and Three-Day Lessons

#### One Day

- Warm-Up PowerPoint and Debrief (10 minutes)
- Introduction and Key Concepts (10 minutes)
- One or two Guided Practice Examples, including applets for selected examples as appropriate (15 minutes)
- Problem-Based Task and discussion (30 minutes)
- Homework: Practice problems

#### Two Days

##### Day 1

- Warm-Up PowerPoint and Debrief (10 minutes)
- Introduction and Key Concepts (15 minutes)
- Two or three Guided Practice Examples, including applets for selected examples as appropriate (20 minutes)
- In-class practice: selected Practice A problems (20 minutes)
- Homework: the remainder of Practice A

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#### **Day 2**

- Review Practice problems (10 minutes)
- One or two remaining Guided Practice Examples, including applets for selected examples as appropriate (15 minutes)
- Problem-Based Task and discussion (30 minutes)
- In-class practice: selected Practice B problems (15 minutes)
- Homework: the remainder of Practice B

#### **Three Days**

##### **Day 1**

- Warm-Up PowerPoint and Debrief (10 minutes)
- Introduction and Key Concepts (25 minutes)
- One or two Guided Practice Examples, including applets for selected examples as appropriate (15 minutes)
- Homework: selected Practice A problems

##### **Day 2**

- Review Practice problems (15 minutes)
- Two or three remaining Guided Practice Examples, including applets for selected examples as appropriate (15 minutes)
- Problem-Based Task and discussion (20 minutes)
- Homework: the remainder of the Practice A problems

##### **Day 3**

- Review Practice problems (15 minutes)
- In-class practice: selected Practice B problems (35 minutes)
- Homework: the remainder of the Practice B problems

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#### **Assessments, Conceptual Activities, and Station Activities**

Each lesson includes a Pre-Assessment and a Progress Assessment, and each unit concludes with a Unit Assessment. Units also feature sets of Station Activities, along with links to interactive web-based Conceptual Activities, to complement instruction.

Pre-Assessments are short, multiple-choice assessments with five problems, designed to evaluate prior knowledge of the upcoming concepts in the lesson. These are brief and should not factor into a student's grade.

Progress Assessments include 10 multiple-choice problems and one extended-response problem. Progress Assessments may not take an entire class period. The additional time may be used to review before the assessment, work through the Conceptual Activities, or to begin the next lesson after the assessment.

Unit Assessments include 12 multiple-choice problems and three extended-response problems, and generally require a full class period.

Conceptual Activities are digital math resources that allow students to explore mathematical ideas with engaging, real-world problems and interactive games.

Station Activities generally require a full class period for the students to rotate through each station and then to engage in a class discussion at the end.

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#### Unit 1: Inferences and Conclusions from Data (42 Days)

**Unit Overview:** Students learn about using the normal curve, as well as about populations versus random samples and random sampling. Then, they learn about strategies for collecting data, including surveys, experiments, and observational studies. Students estimate sample proportions and sample means and develop tools for comparing treatments and reading reports. Finally, they look at making and analyzing decisions with data.

#### Lesson 1: Using the Normal Curve

Students explore the concept of probability distribution, and especially the normal distribution and uniform distribution. They are also introduced to standard deviation. Next, students look more closely at normal distributions and learn how to find the  $z$ -score. Finally, students learn three methods for determining whether a given situation follows a normal distribution.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 1	Lesson 1 Pre-Assessment	Practice A or B	S-ID.4★
Day 2	1.1.1: Normal Distributions and the 68–95–99.7 Rule		
Day 3	1.1.2: Standard Normal Calculations	Practice A or B	S-ID.4★
Day 4			
Day 5	1.1.3: Assessing Normality	Practice A or B	S-ID.4★
Day 6	Station Activities Set: $z$ -scores	Practice A or B	S-ID.4★
Day 7	Lesson 1 Progress Assessment Lesson 2 Pre-Assessment	Practice A or B	

#### Lesson 2: Populations Versus Random Samples and Random Sampling

This lesson begins with an in-depth look at the differences between populations and samples, as well as how to determine the reliability and validity of a sample. Then, students explore simple random sampling and sampling bias. The lesson ends with a look at several other methods of sampling, such as cluster sampling, systematic sampling, and stratified sampling.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 8	1.2.1: Differences Between Populations and Samples	Practice A or B	S-IC.1★
Day 9			
Day 10	1.2.2: Simple Random Sampling	Practice A or B	S-IC.2★
Day 11			
Day 12	1.2.3: Other Methods of Random Sampling	Practice A or B	S-IC.2★
Day 13			
Day 14	Lesson 2 Progress Assessment Lesson 3 Pre-Assessment	Practice A or B	

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#### Lesson 3: Surveys, Experiments, and Observational Studies

This lesson focuses on various ways of collecting data. First, students look at the diverse ways that data can be collected. Then, they investigate more closely the steps needed to design a study so that the outcomes are reliable and relevant to the topic being studied.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 15 Day 16	1.3.1: Identifying Surveys, Experiments, and Observational Studies	Practice A or B	S-IC.3★
Day 17 Day 18	1.3.2: Designing Surveys, Experiments, and Observational Studies	Practice A or B	S-IC.3★
Day 19	Lesson 3 Progress Assessment Lesson 4 Pre-Assessment	Practice A or B	

#### Lesson 4: Estimating Sample Proportions and Sample Means

Students learn about sample proportions and the standard error for the proportion. They explore binomial experiments and binomial distributions, as well as the addition rule for mutually exclusive events. Then, they study sample means and their relationship to population means, and take a look at the margin of error and the confidence level. Finally, students investigate how to calculate the probability that a given value falls within a specified interval.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 20 Day 21	1.4.1: Estimating Sample Proportions	Practice A or B	S-IC.4★
Day 22 Day 23	1.4.2: The Binomial Distribution	Practice A or B	S-IC.4★
Day 24 Day 25	1.4.3: Estimating Sample Means	Practice A or B	S-IC.4★
Day 26 Day 27	1.4.4: Estimating with Confidence	Practice A or B	S-IC.4★
Day 28	Station Activities Set: Distributions and Estimating with Confidence	Practice A or B	S-ID.4★ S-IC.4★
Day 29	Lesson 4 Progress Assessment Lesson 5 Pre-Assessment	Practice A or B	

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#### Lesson 5: Comparing Treatments and Reading Reports

Students learn what a treatment is and how to evaluate the confidence level of a given treatment. They explore how to use a  $t$ -test to establish the statistical significance of a set of data. Next, they investigate the concept of simulations and how to design an accurate simulation. Finally, students learn how to question the validity of the conclusions and assumptions made based on reported data.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 30 Day 31	1.5.1: Evaluating Treatments	Practice A or B	S-IC.5★
Day 32 Day 33	1.5.2: Designing and Simulating Treatments	Practice A or B	S-IC.5★
Day 34 Day 35	1.5.3: Reading Reports	Practice A or B	S-IC.6★
Day 36	Lesson 5 Progress Assessment Lesson 6 Pre-Assessment	Practice A or B	

#### Lesson 6: Making and Analyzing Decisions

Students explore ways of making decisions based on the probability of certain events occurring, and they learn how to calculate the expected value. They then focus on analyzing the accuracy and fairness of situations and outcomes.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 37 Day 38	1.6.1: Making Decisions	Practice A or B	S-MD.6★ (+)
Day 39 Day 40	1.6.2: Analyzing Decisions	Practice A or B	S-MD.7★ (+)
Day 41	Lesson 6 Progress Assessment	Practice A or B	
<b>Unit Assessment</b>			
Day 42	Unit Assessment		

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#### Unit 2A: Polynomial Relationships (34 Days)

**Unit Overview:** Students begin by exploring polynomial structures and operating with polynomials. Then, they learn how to prove identities, graph polynomial functions, and solve systems of equations with polynomials. Finally, students learn about geometric series.

#### Lesson 1: Polynomial Structures and Operating with Polynomials

Students review the vocabulary used when discussing polynomials. They practice adding, subtracting, and multiplying polynomials and simplifying the results.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 1	Lesson 1 Pre-Assessment 2A.1.1: Structures of Expressions	Practice A or B	A–SSE.1a★
Day 2	2A.1.2: Adding and Subtracting Polynomials	Practice A or B	A–APR.1
Day 3 Day 4	2A.1.3: Multiplying Polynomials	Practice A or B	A–APR.1
Day 5	Lesson 1 Progress Assessment Lesson 2 Pre-Assessment	Practice A or B	

#### Lesson 2: Proving Identities

Students begin this lesson by exploring common polynomial identities, such as the difference of two squares and the square of sums. Then they expand their investigation to include complex numbers in the polynomial identities. They end the lesson with an exploration of the Binomial Theorem and a look at its usefulness when finding binomial expansions.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 6 Day 7	2A.2.1: Polynomial Identities	Practice A or B	A–SSE.1b★ A–SSE.2 A–APR.4
Day 8 Day 9	2A.2.2: Complex Polynomial Identities	Practice A or B	N–CN.8 (+) A–SSE.1b★ A–SSE.2 A–APR.4
Day 10 Day 11	2A.2.3: The Binomial Theorem	Practice A or B	A–SSE.1a★ A–SSE.1b★ A–SSE.2 A–APR.4 A–APR.5 (+)
Day 12	Lesson 2 Progress Assessment Lesson 3 Pre-Assessment	Practice A or B	

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#### Lesson 3: Graphing Polynomial Functions

Students begin this lesson by analyzing the end behavior and number of turns of the graphs of polynomial functions. Then they learn synthetic division of polynomials, and apply this to the Remainder Theorem. Their study of polynomials continues with an exploration of how to find the zeros of a polynomial function. Lastly, students learn the Rational Root Theorem as a means of locating the zeros of polynomials that are difficult to factor.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 13 Day 14	2A.3.1: Describing End Behavior and Turns	Practice A or B	F–IF.7c★
Day 15 Day 16	2A.3.2: The Remainder Theorem	Practice A or B	A–APR.2
Day 17 Day 18	2A.3.3: Finding Zeros	Practice A or B	A–APR.3 N–CN.9 (+) F–IF.7c★
Day 19 Day 20	2A.3.4: The Rational Root Theorem	Practice A or B	A–APR.3
Day 21	Station Activities Set: Polynomial Functions	Practice A or B	N–CN.9 (+) A–SSE.2 A–APR.2 A–APR.3 F–IF.2 F–IF.7c★
Day 22	Lesson 3 Progress Assessment Lesson 4 Pre-Assessment	Practice A or B	

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#### Lesson 4: Solving Systems of Equations with Polynomials

This brief lesson focuses on how to find the solution(s) to a system of equations graphically when at least one of the equations is a polynomial. The systems of equations in this lesson also include absolute value equations and exponential equations.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 23 Day 24	2A.4.1: Solving Systems of Equations Graphically	Practice A or B	A–REI.11★
Day 25	Lesson 4 Progress Assessment Lesson 5 Pre-Assessment	Practice A or B	

#### Lesson 5: Geometric Series

This lesson provides an in-depth look at geometric series, beginning with the associated vocabulary. Students learn the difference between recursive and explicit formulas. Next, students explore how to find the sum of a finite geometric series, followed by how to find the sum of an infinite geometric series.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 26 Day 27	2A.5.1: Geometric Sequences	Practice A or B	A–SSE.4★
Day 28 Day 29	2A.5.2: Sum of a Finite Geometric Series	Practice A or B	A–SSE.4★
Day 30 Day 31	2A.5.3: Sum of an Infinite Geometric Series	Practice A or B	A–SSE.4★
Day 32	Station Activities Set: Sequences and Series	Practice A or B	A–SSE.4★
Day 33	Lesson 5 Progress Assessment	Practice A or B	
<b>Unit Assessment</b>			
Day 34	Unit Assessment		

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#### Unit 2B: Rational and Radical Relationships (18 Days)

**Unit Overview:** Students work with operations involving rational expressions. Then, they learn to solve rational and radical equations.

#### Lesson 1: Operating with Rational Expressions

Students learn the definition of a rational expression and how to simplify rational expressions. Then, they focus on adding and subtracting rational expressions, followed by multiplying and dividing them.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 1	Lesson 1 Pre-Assessment 2B.1.1: Structures of Rational Expressions	Practice A or B	A–SSE.1a★ A–SSE.1b★ A–SSE.2
Day 2 Day 3	2B.1.2: Adding and Subtracting Rational Expressions	Practice A or B	A–APR.7 (+) A–SSE.2
Day 4 Day 5	2B.1.3: Multiplying Rational Expressions	Practice A or B	A–APR.7 (+) A–SSE.2
Day 6 Day 7	2B.1.4: Dividing Rational Expressions	Practice A or B	A–APR.6 A–APR.7 (+) A–SSE.2
Day 8	Lesson 1 Progress Assessment Lesson 2 Pre-Assessment	Practice A or B	

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#### Lesson 2: Solving Rational and Radical Equations

Students first learn how to solve rational equations, and then how to solve radical equations. The lesson ends with students solving systems of equations algebraically, including polynomial, radical, and rational equations.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 9 Day 10	2B.2.1: Solving Rational Equations	Practice A or B	A–REI.2
Day 11	Station Activities Set: Rational Expressions and Equations	Practice A or B	A–SSE.2 A–APR.6 A–APR.7 (+) A–REI.2
Day 12 Day 13	2B.2.2: Solving Radical Equations	Practice A or B	A–REI.2
Day 14 Day 15	2B.2.3: Solving Systems of Equations	Practice A or B	A–REI.11★
Day 16	Station Activities Set: Solving Systems of Equations	Practice A or B	A–REI.11★
Day 17	Lesson 2 Progress Assessment	Practice A or B	
<b>Unit/Comprehensive Assessment</b>			
Day 18	Unit Assessment (covering Unit 2B) and/or Comprehensive Unit Assessment (covering Units 2A and 2B)		

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### Unit 3: Trigonometry of General Triangles and Trigonometric Functions (24 Days)

**Unit Overview:** Students begin the unit with a study of radians and the unit circle. Then, they explore the trigonometry of general angles, including the Law of Sines and the Law of Cosines. Finally, students move on to modeling periodic phenomena with the graphs of the sine and cosine functions.

#### Lesson 1: Radians and the Unit Circle

Students explore the meaning of radian measure, as well as the relationship between radians, radius, and arc length measurements on a circle. They also learn to convert from radians to degrees and vice versa. Then, students learn about the unit circle, how to calculate distances using the three basic trigonometric functions, and how to find reference angles. This is followed by the exploration of the special angles on the unit circle. Finally, students learn how to evaluate trigonometric functions with the help of the unit circle.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 1	Lesson 1 Pre-Assessment 3.1.1: Radians	Practice A or B	F–TF.1 F–TF.2
Day 2 Day 3	3.1.2: The Unit Circle	Practice A or B	F–TF.2
Day 4 Day 5	3.1.3: Special Angles in the Unit Circle	Practice A or B	F–TF.2
Day 6 Day 7	3.1.4: Evaluating Trigonometric Functions	Practice A or B	F–TF.2
Day 8	Station Activities Set: Trigonometric Functions	Practice A or B	F–TF.2
Day 9	Lesson 1 Progress Assessment Lesson 2 Pre-Assessment	Practice A or B	

#### Lesson 2: Trigonometry of General Angles

Students discover how to find the measures of missing side lengths and angle measurements if the given triangle is *not* a right triangle, by using the Law of Sines and the Law of Cosines. After learning these two useful formulas, students use the Law of Sines and the Law of Cosines to solve problems.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 10 Day 11	3.2.1: Proving the Law of Sines	Practice A or B	G–SRT.9 (+) G–SRT.10 (+)
Day 12 Day 13	3.2.2: Proving the Law of Cosines	Practice A or B	G–SRT.10 (+)

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Day 14 Day 15	3.2.3: Applying the Laws of Sines and Cosines	Practice A or B	G–SRT.11 (+)
Day 16	Station Activities Set: The Laws of Sines and Cosines	Practice A or B	G–SRT.9 (+) G–SRT.10 (+) G–SRT.11 (+)
Day 17	Lesson 2 Progress Assessment Lesson 3 Pre-Assessment	Practice A or B	

### Lesson 3: Graphs of Trigonometric Functions

Students begin studying the periodic nature of trigonometric functions by looking at the graphs of the sine, cosine, and tangent functions. This includes analyzing the period, frequency, amplitude, and midline of these functions.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 18 Day 19	3.3.1: Periodic Phenomena and Amplitude, Frequency, and Midline	Practice A or B	F–TF.5★
Day 20 Day 21 Day 22	3.3.2: Using Trigonometric Functions to Model Periodic Phenomena	Practice A or B	F–TF.5★
Day 23	Lesson 3 Progress Assessment	Practice A or B	
<b>Unit Assessment</b>			
Day 24	Unit Assessment		

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#### Unit 4A: Mathematical Modeling of Inverse, Logarithmic, and Trigonometric Functions (23 Days)

**Unit Overview:** Students begin by learning about the inverses of quadratics and other functions. This leads to learning about graphing and interpreting logarithmic functions and models. Students continue exploring and applying the graphs of the sine and cosine functions learned previously.

##### Lesson 1: Inverses of Functions

Students learn how to find the inverse of a quadratic function, and then how to find the inverse of other functions, such as rational and radical functions.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 1 Day 2	Lesson 1 Pre-Assessment 4A.1.1: Determining Inverses of Quadratic Functions	Practice A or B	F–BF.4a
Day 3 Day 4	4A.1.2: Determining Inverses of Other Functions	Practice A or B	F–BF.4a
Day 5	Station Activities Set: Inverse Functions	Practice A or B	F–BF.4a
Day 6	Lesson 1 Progress Assessment Lesson 2 Pre-Assessment	Practice A or B	

##### Lesson 2: Modeling Logarithmic Functions

Students are introduced to logarithmic functions, and they explore logarithmic functions as inverses of exponential functions. Next, students investigate common logarithms and natural logarithms. This is followed by a look at the graphs of logarithmic functions. Finally, students learn how analyze and interpret situations that can be modeled with logarithmic functions.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 7 Day 8	4A.2.1: Logarithmic Functions as Inverses	Practice A or B	F–BF.4a F–LE.4★
Day 9 Day 10	4A.2.2: Common Logarithms	Practice A or B	F–IF.8 F–LE.4★
Day 11 Day 12	4A.2.3: Natural Logarithms	Practice A or B	F–IF.8 F–LE.4★
Day 13 Day 14	4A.2.4: Graphing Logarithmic Functions	Practice A or B	F–IF.7e★
Day 15 Day 16	4A.2.5: Interpreting Logarithmic Models	Practice A or B	F–IF.4★ F–IF.5★ F–IF.6★
Day 17	Lesson 2 Progress Assessment Lesson 3 Pre-Assessment	Practice A or B	

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#### Lesson 3: Modeling Trigonometric Functions

Students return to the analysis of the sine and cosine functions they studied previously, this time with a closer investigation into the translation of trigonometric functions.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 18 Day 19	4A.3.1: Graphing the Sine Function	Practice A or B	F-IF.7e★
Day 20 Day 21	4A.3.2: Graphing the Cosine Function	Practice A or B	F-IF.7e★
Day 22	Lesson 3 Progress Assessment	Practice A or B	
<b>Unit Assessment</b>			
Day 23	Unit Assessment		

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#### Unit 4B: Mathematical Modeling and Choosing a Model (38 Days)

**Unit Overview:** Students revisit the process of creating equations in one variable and explore creating constraints and rearranging formulas. They then learn about transforming models and combining functions. Students review various kinds of functions, including linear, exponential, quadratic, piecewise, step, absolute value, square root, and cube root functions, all with an eye to choosing a model for a real-world situation. Finally, students consider geometric models, including two-dimensional cross sections of three-dimensional objects.

#### Lesson 1: Creating Equations

Students begin by reviewing vocabulary associated with equations and inequalities, and they practice writing equations to represent various scenarios. Next, they take a closer look at the constraints that exist for some situations and some equations, and learn how to find restricted domains. Finally, students apply their equation-solving skills to formulas, when they solve formulas for a given variable.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 1	Lesson 1 Pre-Assessment	Practice A or B	A–CED.1★
Day 2	4B.1.1: Creating Equations in One Variable		
Day 3	4B.1.2: Representing and Interpreting	Practice A or B	A–CED.3★
Day 4	Constraints		
Day 5	4B.1.3: Rearranging Formulas	Practice A or B	A–CED.4★
Day 6			
Day 7	Lesson 1 Progress Assessment Lesson 2 Pre-Assessment	Practice A or B	

#### Lesson 2: Transforming a Model and Combining Functions

Students take an in-depth look at transformations of functions. Next, they analyze functions both graphically and algebraically to determine whether the functions are even, odd, or neither. Finally, students learn how to combine two functions by adding, subtracting, multiplying, and dividing them, as well as by substituting one function into the other (composition of functions).

Day	Area of study/content	Homework/Practice	Standard(s)
Day 8	4B.2.1: Transformations of Parent Graphs	Practice A or B	F–BF.3
Day 9			
Day 10	4B.2.2: Recognizing Odd and Even Functions	Practice A or B	F–BF.3
Day 11			
Day 12	4B.2.3: Combining Functions	Practice A or B	F–BF.1b★
Day 13			
Day 14	Lesson 2 Progress Assessment Lesson 3 Pre-Assessment	Practice A or B	

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#### Lesson 3: Comparing Properties Within and Between Functions

Students compare the features and the limitations of a real-world mathematical situation and the “pure” mathematical model that can represent it, with a goal of finding the most accurate mathematical model possible. Next, students learn to calculate the average rate of change of nonlinear functions. The lesson ends with an analysis of how to compare two functions that represent a real-world scenario.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 15 Day 16	4B.3.1: Reading and Identifying Key Features of Real-World Situation Graphs	Practice A or B	F-IF.4★ F-IF.5★ F-IF.6★
Day 17 Day 18	4B.3.2: Calculating Average Rates of Change	Practice A or B	F-IF.6★
Day 19 Day 20	4B.3.3: Comparing Functions	Practice A or B	F-IF.6★ F-IF.9
Day 21	Lesson 3 Progress Assessment Lesson 4 Pre-Assessment	Practice A or B	

#### Lesson 4: Choosing a Model

Students learn how to choose the best model (linear, exponential, or quadratic) for a given situation by analyzing the given data. Then, they analyze more models, including piecewise functions, step functions, and absolute value functions. Students discover which of these functions apply to different types of situations. Finally, they look at situations that are best modeled with square root and cube root functions.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 22 Day 23	4B.4.1: Linear, Exponential, and Quadratic Functions	Practice A or B	A-CED.2★ F-IF.4★ F-IF.5★ F-BF.3
Day 24 Day 25	4B.4.2: Piecewise, Step, and Absolute Value Functions	Practice A or B	F-IF.4★ F-IF.5★ F-IF.7b★ F-BF.3
Day 26 Day 27	4B.4.3: Square Root and Cube Root Functions	Practice A or B	F-IF.4★ F-IF.5★ F-IF.7b★ F-BF.3

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Day 28	Station Activities Set: Choosing a Model	Practice A or B	F–IF.4★ F–IF.5★ F–IF.7b★ F–BF.3
Day 29	Lesson 4 Progress Assessment Lesson 5 Pre-Assessment	Practice A or B	

### Lesson 5: Geometric Modeling

Students find ways to model geometric situations, first by looking at cross sections of three-dimensional objects, and how these cross-sectional areas can be used to model a given problem. The modeling continues as students explore the concept of density, and how the density of a quantity can be compared to a basic unit of area or volume to solve real-world problems. Finally, students explore the role of mathematics in the design of products and services.

Day	Area of study/content	Homework/Practice	Standard(s)
Day 30 Day 31	4B.5.1: Two-Dimensional Cross Sections of Three-Dimensional Objects	Practice A or B	G–GMD.4 G–MG.1★
Day 32 Day 33	4B.5.2: Density	Practice A or B	G–MG.2★
Day 34 Day 35	4B.5.3: Design	Practice A or B	G–MG.3★
Day 36	Station Activities Set: Geometric Modeling	Practice A or B	G–GMD.4 G–MG.1★ G–MG.2★ G–MG.3★
Day 37	Lesson 5 Progress Assessment	Practice A or B	
<b>Unit/Comprehensive Assessment</b>			
Day 38	Unit Assessment (covering Unit 4B) and/or Comprehensive Unit Assessment (covering Units 4A and 4B)		