Mathematical Practices

- ☐ Make sense of problems and persevere in solving them.
- ☐ Reason abstractly and quantitatively.
- ☐ Construct viable arguments and critique the reasoning of others.
- ☐ Model with mathematics.
- ☐ Use appropriate tools strategically.
- ☐ Attend to precision.
- ☐ Look for and make use of structure.
- ☐ Look for and express regularity in repeated reasoning.

Vocabulary

Accuracy	Inequality
Algebraic expression	Intersection
Coefficient	Literal equations
Compound statement	Numerical expression
Compound inequality	Precision
Continuous graph	Properties of Equality
Conversion factor	Proportion
Dependent variable	Range
Dimensional analysis	Rate
Discrete graph	Ratio
Distributive property	Relation
Domain	Scale
Equation	Scale drawing
Equivalent expressions	Scale model
Expression	Solution of an equation
Function notation	Significant digits
Function rule	Terms
Independent variable	Vertical line test

Research-based Instructional Practices

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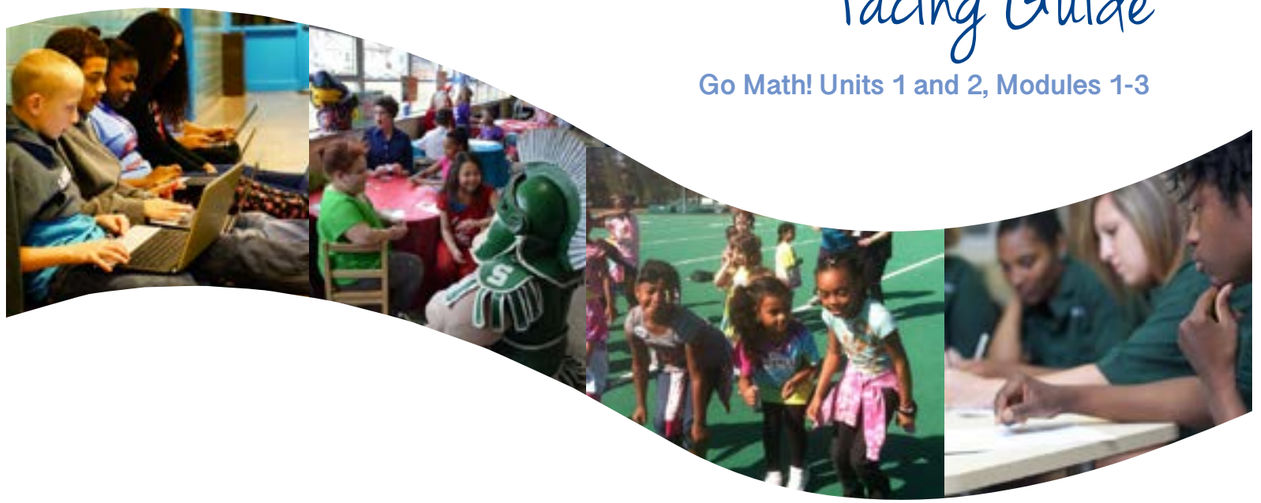
Algebra I • First Quarter Pacing Guide

Go Math! Units 1 and 2, Modules 1-3



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Algebra I Mathematics First Quarter

Unit 1: Quantities and Modeling

Module 1: Quantitative Reasoning

1.1: A.REI.1
Solving Equations
☐ **I CAN** demonstrate the correct steps used to solve a simple problem.

1.2: N.Q.2
Modeling Quantities
☐ **I CAN** use the correct quantities when modeling a problem.

1.3: N.Q.3
Reporting with Precision and Accuracy
☐ **I CAN** determine an appropriate level of accuracy to assign to a quantity.

Module 2: Algebraic Models

2.1: A.SSE.1
Modeling with Expressions
☐ **I CAN** identify the coefficients in an expression.

2.2: A.CED.1
Creating and Solving Equations
☐ **I CAN** create linear inequalities in one variable to solve problems.

2.3: A.CED.4
Solving for a Variable
☐ **I CAN** rearrange a formula to correctly solve for a variable.

2.4: A.CED.3
Creating and Solving Inequalities
☐ **I CAN** create and solve an inequality that represents a real world situation.

2.5: A.CED.1
Creating and Solving Compound Inequalities
☐ **I CAN** use compound linear inequalities to solve problems.

Unit 2: Understanding Functions

Module 3: Functions and Models

3.1: F.IF.4
Graphing Relationships
☐ **I CAN** sketch a graph from a verbal description of the relationship of the points.

3.2: F.IF.1
Understanding Relations and Functions
☐ **I CAN** demonstrate that a function must have exactly one y-value for every x -value.

3.3: F.IF.2
Modeling with Functions
☐ **I CAN** interpret statements that use function notation.

3.4: F.IF.1
Graphing Functions
☐ **I CAN** show that x-values are the domain and the y-values are the range.

Notes

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Vocabulary

Arithmetic sequence
Boundary line
common difference
continuous graph
Discrete function
Half-plane
Linear equation
Linear function
Linear inequality of 2 variables
Point-slope form
Rate of change
Sequence
Slope
Slope formula
Slope intercept form
Solution
Standard form
Term
x-intercept
y-intercept

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Algebra I • Second Quarter

Pacing Guide

Go Math! Units 2 and 3, Modules 4-7

Mathematics

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Algebra I | Mathematics | Second Quarter

Unit 2: Understanding Functions (Continued)

Module 4: Patterns and Sequences

4.1: F.IF.3
Identifying and Graphing Sequences
- ☐ **I CAN** define a sequence and show its relation to a function.

4.2: F.IF.2
Constructing Arithmetic Sequences
- ☐ **I CAN** write an exponential function from a graph, description, and a table.

4.3: F.BF.1
Modeling with Arithmetic Sequences
- ☐ **I CAN** solve real world situations using an arithmetic sequence.

Unit 3: Linear Functions, Equations, and Inequalities

Module 5: Linear Functions

5.1: F.LE.1
Understanding Linear Functions
- ☐ **I CAN** define a linear function.

5.2: F.IF.7
Using Intercepts
- ☐ **I CAN** identify and use intercepts in linear relations.

5.3: F.IF.6
Interpreting Rate of Change and Slope
- ☐ **I CAN** interpret and calculate the average rate of change of a function from a table and a graph.

Module 6: Forms of Linear Equations

6.1: F.IF.7
Slope-Intercept Form
- ☐ **I CAN** respresent a linear function in a way that reveals its slope and y-intercept.

6.2: A.REI.10
Point-Slope Form
- ☐ **I CAN** demonstrate that a graph of any equation in two variables is the set of all of its solutions.

6.3: A.CED.2
Standard Form
- ☐ **I CAN** create equations in two or more variables to solve problems.

6.4: F.BF.3
Transforming Linear Functions
- ☐ **I CAN** determine how changes to an original function will change the graph of the functions.

6.5: F.IF.9
Comparing Properties of Linear Functions
- ☐ **I CAN** compare two functions that are represented in different ways and identify key features.

Module 7: Linear Equations and Inequalities

7.1: A.CED.3
Modeling Linear Relationships
- ☐ **I CAN** model linear relationships given limited information.

7.2: A.REI.11
Using Functions to Solve One-Variable Equations
- ☐ **I CAN** use functions to solve one-variable equations.

7.3: A.REI.12
Linear Inequalities in Two Variables
- ☐ **I CAN** write and graph linear inequalities with two variables.

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Vocabulary

Absolute value functions
Absolute value inequalities
Boundary (dashed line vs. solid line)
Box-plot
Categorical vs. Quantitative
Correlation coefficient
Data
Disjunction
Dot plot
Elimination method
Extrapolation
Frequency table
Greatest integer function
Histogram
Independent system vs. dependent system vs. inconsistent system
Interpolation
Interquartile range
Interval
Least squares line
Line of best fit
Line of fit
Linear inequalities
Linear regression
Mean
Median
Mode
Normal distribution
Outlier
Overlap area = solution
Parameters
Piecewise-definedmfunction
Probability
Quartile
Relative frequencies (either joint or marginal)
Residual
Residual plot
Scatter plot
Solution
Standard deviation
Step function
Substitution method
Symmetric distribution
System of linear equations
Translation
Trend

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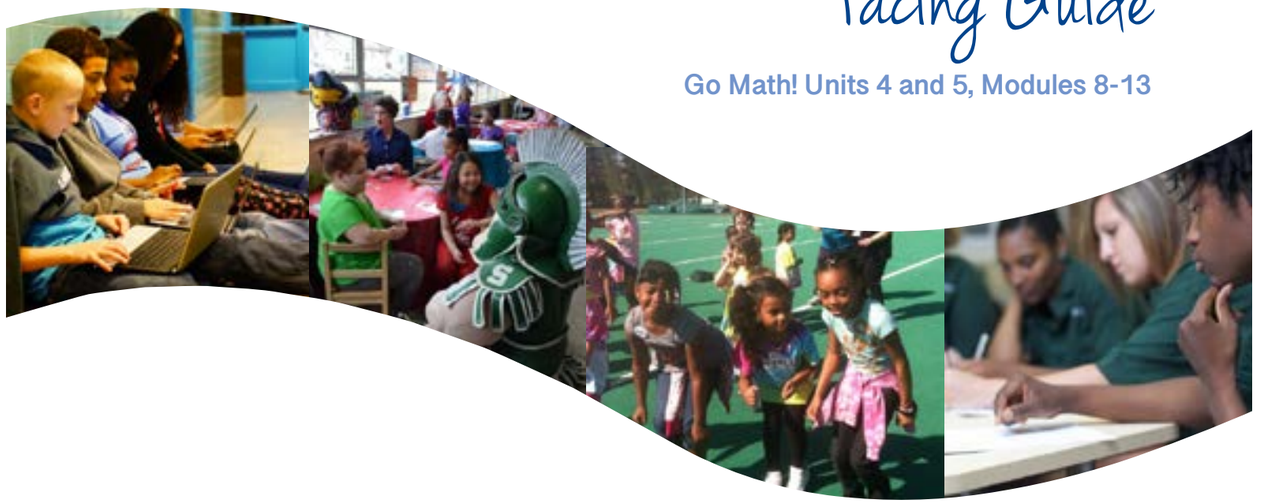
Algebra I • Third Quarter Pacing Guide

Go Math! Units 4 and 5, Modules 8-13



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Algebra I — Mathematics — Third Quarter

Unit 4: Statistical Models

Module 8: Multi-variable Categorical Data

8.1: S.ID.5
Two-way Frequency Tables
- ☐ **I CAN** summarize categorical data for two categories.

8.2: S.ID.5
Relative Frequency
- ☐ **I CAN** recognize possible associations and trends between two categories of categorical data.

Module 9: One-Variable Data Distributions

9.1: S.ID.2
Measure of Center and Spread
- ☐ **I CAN** describe and compare data sets.

9.2: S.ID.1, S.ID.2, S.ID.3, N.Q.1
Data Distributions and Outliers
- ☐ **I CAN** determine which statistics are most affected by outliers, and what shapes the data distribution can have.

9.3: S.ID.1, S.ID.2, N.Q.1
Histograms and Box Plots
- ☐ **I CAN** interpret the comparison data sets using data displays (histograms and box plots).

9.4: S.ID.1, S.ID.2, N.Q.1
Normal Distributions
- ☐ **I CAN** use characteristics of a normal distribution to make estimates and probability predictions about the population that the data represents.

Module 10: Linear Modeling and Regression

10.1: S.ID.6, S.ID.8, S.ID.9, F.LE.5
Scatter Plots and Trend Lines
- ☐ **I CAN** describe the relationship between two variables and use it to make predictions.

10.2: S.ID.6, S.ID.8, F.LE.5
Fitting a Linear Model to Data
- ☐ **I CAN** use the linear regression function on a graphing calculator to find the line of best fit for a two-variable data set.

Unit 5: Linear Systems and Piecewise-defined Functions

Module 11: Solving Systems of Linear Equations

11.1: A.REI.6
Solving Linear Systems by Graphing
- ☐ **I CAN** find the solution of a system of linear equations by graphing.

11.2: A.REI.6
Solving Linear Systems by Substitution
- ☐ **I CAN** solve a system of linear equations using substitution.

11.3: A.REI.6
Solving Linear Systems by Adding or Subtracting
- ☐ **I CAN** solve a system of linear equations by adding and subtracting.

11.4: A.REI.5, A.REI.6
Solving Linear Systems by Multiplying First
- ☐ **I CAN** solve a system of linear equations by using multiplication and elimination.

Module 12: Modeling with Linear Systems

12.1: A.CED.3, F.LE.5
Creating Systems of Linear Equations
- ☐ **I CAN** use systems of linear equations to model and solve real-world problems.

12.2: A.REI.12, A.CED.3
Graphing Systems of Linear Equations
- ☐ **I CAN** solve a system of linear inequalities graphically.

12.3: A.CED.3
Modeling with Linear Systems
- ☐ **I CAN** use systems of lineear equations or inequalities to model and solve contextual problems.

Module 13: Piecewise-defined Functions

13.1: F.IF.7, F.BF.1
Understanding Piecewise-defined Functions
- ☐ **I CAN** show how piecewise-defined functions are different from other functions.
- ☐ **I CAN** graph them and write a piecewise-defined function from a graph.

13.2: F.IF.7, F.BF.3
Absolute Value Function and Transformations
- ☐ **I CAN** show the effects of parameter changes on the graph of of $y = a|x - h| + k$.

13.3: A.REI.3, A.REI.11, A.CED.1
Solving Absolute Value Equations
- ☐ **I CAN** solve an absolute value equation graphically and algebraically.

13.4: A.REI.3, A.REI.11, A.CED.1
Solving Absolute Value Inequalities
- ☐ **I CAN** solve absolute value inequalitities graphically and algebraically.

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Asymptote expontential growth vs. decay
Binomial
Common ratio
Constant
Constant change vs. constant percent change
Degree
Difference of two squares
Discrete
Distributive property
Domain
End behavior
Equating exponets
Explicit vs. recursive rules
Exponential function
Exponential regression
Factors
FOIL
Form vs. Intercept Form
Geometric sequence
Greatest Common Factor
Infinity
Integer
Multivariable expressions
Parabola
Perfect square trinomial
Product of power property
Radical
Range
Rational exponent
Standard form
Standard Form vs. Vertex
Subscript
Trinomial
Vertical compression
Vertical stretch
x-intercepts
Zero pairs
Zeros

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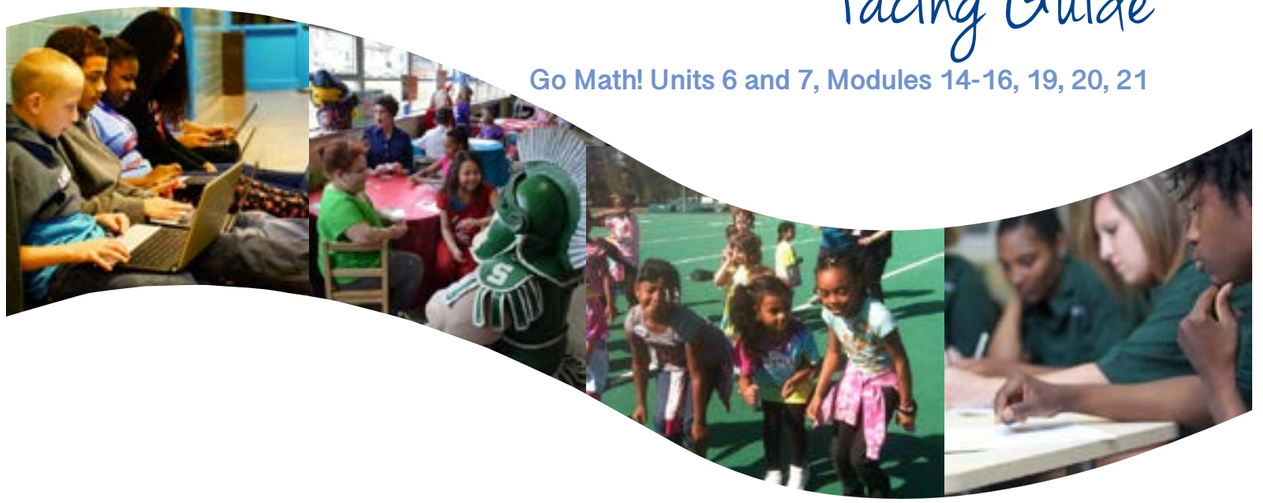
Algebra I • Fourth Quarter Pacing Guide

Go Math! Units 6 and 7, Modules 14-16, 19, 20, 21



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Algebra I — Mathematics — Fourth Quarter

Unit 6: Exponential Relationships

Module 14: Rational Exponents and Radicals

14.1: N.RN.1, N.RN.2
Understanding Rational Exponents and Radicals
☐ **I CAN** relate radicals to rational exponents.

14.2: N.RN.2, N.RN.3, A.SSE.1
Simplify Expressions with Rational Exponents and Radicals
☐ **I CAN** write a radical expression as an expression of a rational exponent.

Module 15: GeometricSequences and Exponential Functions

15.1: F.LE.2, F.LE.3
Understanding Geometric Sequences
☐ **I CAN** relate the terms of a geometric sequence using a common ratio.

15.2: F.BA.1, F.LE.2, F.BA.2
Constructing Geometric Sequences
☐ **I CAN** write a geometric sequence using recursive and explicit rules.

15.3: F.LE.2, F.IF.2, F.IF.7
Constructing Exponential Functions
☐ **I CAN** undertand discrete exponential functions and how to represent them.

15.4: F.IF.7, F.IF.8
Graphing Exponential Functions
☐ **I CAN** graph an exponential function of the form $f(x) = ab^x$.

15.5: F.BF.3, F.IF.9
Transforming Exponential Functions
☐ **I CAN** determine the effect changing a and/or b have on the graph of $f(x) = ab^x$.

Module 16: Exponential Equations and Models

16.1: A.CED.1, A.SSE.3, A.REI.11, F.BF.1, F.LE.2
Using Graphs and Properties to Solve Equations with Exponents
☐ **I CAN** solve equations involving variable exponents.

16.2: F.IF.7, F.IF.5, F.Bf.1, F.LE.1, F.LE.2
Modeling Exponential Growth and Decay
☐ **I CAN** use exponential functions to model the increase or decrease of a quantity over time.

16.3: S.ID.6, A.CED.2, A.REI.11, F.LE.1
Using Exponential Regression Models
☐ **I CAN** use exponential regression to model data.

16.4: F.LE.1, F.LE.3
Comparing Linear and Exponential Models
☐ **I CAN** recognize when to use a linear model vs. an exponential model.

Unit 8: Quadratic Equations

Module 19: Quadratic Functions

19.1: F.BF.3, F.IF.2, F.IF.4, F.IF.7
Graphing Quadratic Functions
Identify the effect on the graph of replacing f(x) for specific values of k (both positive and negative).

☐ **I CAN** determine the effect of the constant c on the graph of $f(x) = ax^2$.

19.2: FBF.1, F.BF.2, F.IF.3, F.IF.4
Transforming Quadratic Functions
Identify the effect on the graph of replacing f(x) by f(x) + k, kf(x), f(kx), and f(x+k) for specific values of k (both positive and negative).

☐ **I CAN** obtain the graph of $g(x) = a(x-h)^2 + k$ from the graph of $f(x) = x^2$.

19.3: F.IF.4, F.IF.8, F.BF.1
Interpreting Vertex Form and Standard Form
For a function that models a relationship between two quantities, interpret key features of graphs.

☐ **I CAN** change vertex form of a quadratic equation to standard form.

☐ **I CAN** write an equation of a quadratic function from a graph or a table.

Module 20: Conneting Intercepts and Zeros

20.1: F.IF.7, A.REI.4, A.REI.11, A.APR.3
Connecting Intercepts and Zeros
Graph a quadratic function and show intercepts, maxima, and minima.

☐ **I CAN** label x-intercepts, maxima and minima on the graph of a quadratic function.

20.2: A.APR.1, A.APR.3 F.IF.7, A.SSE.2
Connecting Intercepts and Linear Factors
Identify zeros of polynomials and use the zeros to construct a rough graph of the function defined by the polynomial.

☐ **I CAN** describe how the x-intercepts of a quadratic function and its linear factors are related.

20.3: A.REI.4, A.APR.3, A.SSE.2, A.SSE.3
Applying the Zero Product Property to Solve Equations
Solve quadratic equations in one variable.

☐ **I CAN** use the Zero Product Property to solve quadratic equations in factored form.

Module 21: Using Factors to Solve Quadratic Equations

21.1: A.SSE.2, A.SSE.3, A.REI.4
Solving Equations by Factoring x^2+bx+c
Factor a quadratic expression to reveal the zeros of the function it defines.

☐ **I CAN** use factoring to solve quadratic equations in standard form when a = 1.

21.2: A.SSE.2, A.SSE.3, A.REI.4
Solving Equations by Factoring ax^2+bx+c
Solve quadratic equations by factoring, as appropriate to the initial form of the equation.

☐ **I CAN** use factoring to solve quadratic equations in standard form when $a \neq 1$.

21.3: A.SSE.2, A.SSE.3, A.REI.4
Using Special Factors to Solve Equations
Factor a quadratic expression to reveal the zeros of the function it defines.

☐ **I CAN** use special products to help solve quadratic equations by factoring.