

# Unit 2 An Introduction to Functions

Content Area: **Math**  
Course(s): **Accelerated Algebra I**  
Time Period: **Marking Period 1**  
Length: **3**  
Status: **Published**

## Unit Overview

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This unit allows students to master how to interpret functions. Students will also see how to reason with equations and inequalities.

Link to optional Desmos Curriculum resource:

<https://teacher.desmos.com/collection/61bcc95700581818dff1d4d7?intro-banner-expanded=true>

## Enduring Understandings

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- The value of one variable may be uniquely determined by the value of another variable.
- Functions are a special type of relation where each value in the domain is paired with exactly one value in the range.
- Arithmetic sequences have function rules that can be used to find any term of the sequence.
- Graphs can be used to visually represent the relationship between two variable quantities as they change.
- The set of all solutions of an equation forms its graph.
- Many real-world relationships can be represented by equations.

## Essential Questions

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How can you represent and describe functions?

Can functions describe real world situations?

## New Jersey Student Learning Standards (No CCS)

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MA.F-IF	Interpreting Functions
MA.F-IF.A	Understand the concept of a function and use function notation
MA.F-IF.A.1	Understand that a function from one set (called the domain) to another set (called the

range) assigns to each element of the domain exactly one element of the range. If  $f$  is a function and  $x$  is an element of its domain, then  $f(x)$  denotes the output of  $f$  corresponding to the input  $x$ . The graph of  $f$  is the graph of the equation  $y = f(x)$ .

MA.F-IF.A.2	Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
MA.A-SSE.A.1a	Interpret parts of an expression, such as terms, factors, and coefficients.
MA.F-IF.A.3	Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.
MA.F-IF.B	Interpret functions that arise in applications in terms of the context
MA.F-IF.B.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
MA.N-Q.A.1	Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
MA.F-IF.B.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.
MA.N-Q.A.2	Define appropriate quantities for the purpose of descriptive modeling.
MA.F-IF.C.8	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.
MA.F-IF.C.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).
MA.F-BF.A	Build a function that models a relationship between two quantities
MA.F-BF.A.1	Write a function that describes a relationship between two quantities.
MA.F-BF.A.1a	Determine an explicit expression, a recursive process, or steps for calculation from a context.
MA.A-CED.A.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
MA.F-BF.A.2	Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.
MA.F-BF.B	Build new functions from existing functions
MA.F-LE.A.2	Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).
MA.A-REI.D.10	Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).

## Interdisciplinary Connections

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LA.W-9-10.6	Use technology, including the Internet, to produce, share, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.
SCI.HS-ETS1-2	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
TECH.8.1.12.C.CS4	Contribute to project teams to produce original works or solve problems.

## Technology Standards

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TECH.8.1.12.C.CS4	Contribute to project teams to produce original works or solve problems.
TECH.8.1.12.E.CS4	Process data and report results.
TECH.8.1.12.F.CS3	Collect and analyze data to identify solutions and/or make informed decisions.
TECH.8.1.12.F.CS4	Use multiple processes and diverse perspectives to explore alternative solutions.

## 21st Century Themes/Careers

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CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.
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## Instructional Strategies & Learning Activities

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- Use graphing calculator to explore tables.
- Spend time with modeling problems
- Use problems and activities from book involving modeling problems
- ~~Provide access to online book~~
- Provide access to book pages and problems through Canvas
- Provide access to review keys
- ~~Use Pearson Quizzes to review and reinforce.~~
- ~~Provide access to Pearson Review.~~
- Examview Quizzes to assess HW.
- Desmos
- Delta Math

## Formative Assessments

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- Daily homework checks
- Quiz
- ~~Chapter~~ Unit Test
- Exit Tickets
- Warm-ups

## Summative Assessment

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- Unit Test
- Unit Project (Optional)

