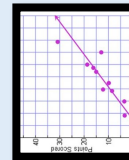


The Common Denominator

A Family Math Newsletter

Algebra 1 Unit 2: Exploring Linear Relationships



In this unit, the students will demonstrate their understanding of linear functions, slope, intercepts, and writing equations in various forms as they apply these skill and understandings to two variable data collection and interpretation, systems of equations and inequalities and piecewise defined functions. The following topics will be studied:

Unit at a Glance

Topic	Skills	Length
Topic A: Analyzing Data Sets for Two Quantitative Variables	<ul style="list-style-type: none"> Linear Modeling and Regression Correlation Coefficient Residual Plots Causation and Correlation 	6 (45-minute) periods 3 (90-minute) periods
Topic B: Systems of Linear Equations and Inequalities	<ul style="list-style-type: none"> Solving Systems of Linear Equations (Graphing, Substitution, Linear Combination) Solving Systems of Linear Inequalities Linear Programming 	6 (45-minute) periods 3 (90-minute) periods
Topic C: Piecewise-Defined Functions	<ul style="list-style-type: none"> Piecewise-Defined Functions Step Functions Absolute Value Equations and Functions 	10 (45-minute) periods 5 (90-minute) periods

Exploring Mathematics

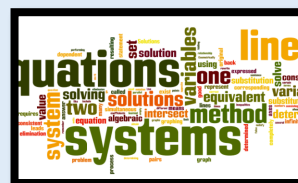
Careers in Data Analysis

Statistician, economist, data analyst, data engineer, data scientist, business analyst, researcher, actuary, product manager, digital marketer, meteorologist and many more!

Real World Connections

Consider the following variables and whether they would have positive, negative, or no correlation:

- Number of beachgoers and temperature
- Test scores and hours studied
- Shoe size and height
- Age and weight
- Hours playing video games and GPA
- Average time spent watching TV and size of TV.



Consider the following situations and what their graphs would look like:

- Armando drives from his home to the grocery store at a speed of 0.9 mile per minute for 4 minutes, stops for 2 minutes to buy snacks, and then drives to the soccer field at a speed of 0.7 mile per minute for 3 minutes. The graph shows Armando's distance from home.
- A garage charges the following rates for parking (with an 8-hour limit): \$4 per hour for the first 2 hours, \$2 per hour for the next 4 hours, No additional charge for the next 2 hours
- The cost to send a package between two cities is \$8.00 for any weight less than 1 pound. The cost increases by \$4.00 when the weight reaches 1 pound and again each time the weight reaches a whole number of pounds after that.

Resource Toolkit



HMH Resources

HMH Algebra 1 Textbook, Interactive Student Edition, or Student Resources

Topic A

Unit 4: Statistical Analysis, Module 10: Linear Modeling and Regression, Lessons 10.1 and 10.2

Topic B:

Unit 5: Linear Systems and Piecewise-Defined Functions, Module 11: Solving Systems of Linear Equations, Lessons 11.1-11.4

Unit 5: Linear Systems and Piecewise-Defined Functions, Module 12: Modeling with Linear Systems, Lessons 12.1-12.3

Topic C

Unit 5: Linear Systems and Piecewise-Defined Functions, Module 13: Piecewise-Defined Functions, 13.1-13.4

Homework Help Section

Topic A

Go to HMH Student Resources, Unit 4, Module 10

Lesson 10.1: Scatter Plots and Trend Lines, Reteach and Success for English Language Learners

Lesson 10.2: Fitting a Linear Model to Data, Math on the Spot Video and Reteach

Khan Academy: [Estimating with Regression \(Linear Models\)](#)

Topic B

Go to HMH Student Resources, Unit 5, Module 11

Lesson 11.1: Solving Linear Systems by Graphing, Reading Strategies

Lesson 11.1: Solving Linear Systems by Graphing, Practice and Problem Solving: C

Go to HMH Student Resources, Unit 5, Module 12

Lesson 11.2: Solving Linear Systems by Substitution, Reteach

Go to HMH Student Resources, Unit 5, Module 13

Lesson 11.3: Solving Linear Systems by Adding or Subtracting, Reteach

Go to HMH Student Resources, Unit 5, Module 14

Lesson 11.4: Solving Linear Systems by Multiplying First, Math on the Spot Video

Khan Academy: [Intro to Graphing Two Variable Inequalities](#)

Topic C

Go to HMH Student Resources, Unit 5, Module 13

Lesson 13.1: Understanding Piecewise-Defined Functions, Math on the Spot Video

Khan Academy: [Introduction to Piece-wise Functions](#)



“Perseverance is not a long race; it is many short races one after the other.”
– Walter Elliot