Publisher/Developer: *Amplify Education, Inc.*

Program Title: *Amplify Desmos Math California, Grade 8*

Components: *Teacher Edition; Student Edition; Assessment Resources; Intervention, Extension, and Investigation Resources; Math Language Development Resources; Additional Practice Resources; Additional Practice Student Workbook; Student Digital License; Teacher Digital License*

Approved by the State Board of Education January 18, 2024

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# 2025 California Common Core State Standards: Mathematics Adoption[[1]](#footnote-0)Standards Map Template

## Grade Eight

### Organization Around Major Conceptual Ideas

Evaluation criterion statement 1.2 requires that programs be consistent with the content of the 2023 *Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve* (*Mathematics Framework*). In order to be considered suitable for adoption by the SBE, a publisher's or developer’s program must present content organized around major conceptual ideas, as demonstrated in chapters 6, 7, and 8, and as described in the Publishers and Content Developers Guide to the Mathematics Framework, found in chapter 13 of the *Mathematics Framework*.

1. Publishers/developers should use the first column of this table to list the major conceptual ideas used to organize the instructional program.
2. In the second column, publishers/developers should show how these relate to the Framework’s Big Ideas.
3. In the third column, publishers/developers should show the organization of the program by showing how the content standards are mapped to each of the major conceptual ideas or Big Ideas used by the program.

| **Major Conceptual Ideas in the Program**  | **How do the program’s Major Conceptual Ideas map to the Framework’s Big Ideas?** | **How are Standards Covered under the Major Conceptual Ideas?**  | **Met Yes** | **Met No** | **Reviewer Notes** |
| --- | --- | --- | --- | --- | --- |
| **Unit 1:** Rigid Transformations and Congruence*Perform and describe the effect of translations, rotations, and reflections on two-dimensional figures. Understand congruence within the context of these transformations. Apply rigid transformations and congruence to analyze tessellations found in art and architecture around the world and create tessellations.*  | * **Transformational Geometry:** Students use dynamic geometry software to visualize, describe, and perform translations, reflections, and rotations on and off a grid and on a coordinate plane. Students learn and use the word *congruent* and come to understand that two figures are congruent if one figure can be mapped onto the other using a sequence of translations, reflections, and rotations. They learn that these transformations are called *rigid transformations* because they preserve congruence. Students apply their knowledge of rigid transformations and congruent figures to analyze tessellations found in art and architecture around the world and create their own tessellations.

For more information about how each Big Idea is developed throughout the grade, refer to the Keeping the Big Ideas at the Center ([pages xiv–xx](https://learning.amplify.com/m/22cdf033362f3969/original/ADM-G8-TE-FM-V1-CA.pdf#page=12)) in the Teacher Edition. | * **8.G.1.a:** Students use tools, including tracing paper and rulers, to verify that lines and lengths of line segments are preserved during translations, rotations, or reflections.
* **8.G.1.b:** Students use tools, including tracing paper and protractors, to verify that angle measurements are preserved during translations, rotations, or reflections.
* **8.G.1.c:** Students use tools, including dynamic geometry software, to verify that parallel lines are preserved during translations, rotations, or reflections.
* **8.G.2:** Students explore what it means for figures to be the “same” and learn the term *congruent*. They discover that two figures are congruent if there is a sequence of rigid transformations that maps one onto the other. Students apply their knowledge of rigid transformations and congruent figures to analyze tessellations found in art and architecture around the world and create their own tessellations.
* **8.G.3:** Students use dynamic geometry software to describe the effect of rigid transformations on two-dimensional figures using coordinates.
* **8.G.5:** Students use rigid transformations to explain angle relationships that are formed when parallel lines are cut by a transversal. They observe that the sum of the interior angle measures in a triangle is 180 degrees and use angle relationships to determine the measures of exterior angles of triangles.
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| **Unit 2:** Dilations, Similarity, and Slope*Perform and describe the effect of dilations on two-dimensional figures and understand similarity within the context of transformations. Solve real-world problems involving similar triangles and shadow lengths of objects. Use similar triangles to develop concepts of slope within the context of water slides.* | * **Transformational Geometry:** Students use dynamic geometry software to visualize, describe, and perform rotations using scale factors and centers of dilation on and off a grid and on a coordinate plane. Students learn and use the word *similar* and come to understand that two figures are similar if one figure can be mapped onto the other using a sequence of dilations, translations, reflections, and rotations. Students identify similarity in triangles using congruent corresponding angles and explore how equivalent ratios represent corresponding side lengths in similar triangles. Students use these ratios to help determine missing side lengths of similar triangles in mathematical and real-world contexts, such as shadow lengths of objects.
* **Multiple Representations of Functions:** Students explore the connection between similar triangles and the slope of a line through the context of water slides. They explain why all slope triangles on the same line are similar and they develop strategies for calculating slope using the height-to-base ratio of these triangles.

For more information about how each Big Idea is developed throughout the grade, refer to the Keeping the Big Ideas at the Center ([pages xiv–xx](https://learning.amplify.com/m/22cdf033362f3969/original/ADM-G8-TE-FM-V1-CA.pdf#page=12)) in the Teacher Edition. | * **8.G.1:** Students use tools, such as tracing paper, straightedges, and dynamic geometry software to verify the effects of sequences of transformations that include both rigid transformations and dilations.
* **8.G.2:** Students apply their knowledge of rigid transformations and dilations to justify whether two given figures are similar, congruent, or neither.
* **8.G.3:** Students perform dilations to describe their effect on two-dimensional figures using coordinates.
* **8.G.4:** Students explore properties of similar figures and discover that two figures are similar if there is a sequence of translations, reflections, rotations, and dilations that maps one onto the other. They apply similar triangles to solve real-world problems involving shadow lengths of objects.
* **8.G.5:** Students use dynamic geometry software to discover that if the angle measures for two corresponding angles of two triangles are congruent, then the triangles are similar (angle-angle criterion).
* **8.EE.6:** Through the context of water slides, students apply their understanding of similar triangles to make sense of slope and why the slope is the same between any two points on a non-vertical line.
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| **Unit 3:** Proportional and Linear Relationships*Use a variety of representations to connect proportional relationships to linear equations of the form y = mx, and use a variety of representations to analyze and solve problems involving linear relationships y = mx + b, understanding that when b ≠ 0, the relationship is not proportional.* | * **Multiple Representations of Functions:** Students compare tables, graphs, and equations of proportional and non-proportional linear relationships, interpreting the slopes and intercepts in context.
* **Linear Equations:** Students explore proportional and non-proportional linear relationships, making connections between the unit rate and slope for proportional relationships.
* **Slopes & Intercepts:** Students make connections between the unit rate of a proportional relationship and the slope of its line.
* **Transformational Geometry:** Students apply their knowledge of transformations as they derive the equation *y* = *mx* + *b* by translating the graph of the equation *y* = *mx*.
* **Data, Graphs, & Tables:** Students explore real-world linear relationships between two variables that are not proportional, describing how features of their graphs are similar to and different from graphs of proportional relationships.

For more information about how each Big Idea is developed throughout the grade, refer to the Keeping the Big Ideas at the Center ([pages xiv–xx](https://learning.amplify.com/m/22cdf033362f3969/original/ADM-G8-TE-FM-V1-CA.pdf#page=12)) in the Teacher Edition. | * **8.EE.5:** Using contexts such as turtle races and water tanks, students recognize that the slope of a line representing a proportional relationship is the unit rate. They compare proportional relationships expressed in different forms (tables, graphs, equations).
* **8.EE.6:** Students continue their understanding of slope from Unit 2 and proportional relationships from Grade 7 as they derive the equation *y* = *mx*, where *m* is the slope (unit rate), to represent proportional relationships. They then use translations of *y* = *mx* to derive the equation *y* = *mx* + *b*, where *b* represents the vertical intercept, recognizing that when *b* ≠ 0, the relationship is linear, but not proportional.
* **8.F.3:** Using contexts such as costs of public transportation and stacking cups, students explore relationships with constant rates of change, calling those relationships *linear*.They use the equation *y* = *mx* + *b* to represent linear relationships, recognizing their graphs are straight lines. Students notice that when the initial value is not 0, the graph does not pass through the origin.
* **8.F.4:** Students use tables, graphs, and equations of the form *y* = *mx* + *b* to model linear relationships between two quantities, such as all possible combinations of pennies and quarters that are worth a fixed amount. They determine and interpret the rate of change and initial value from these representations.
* **8.G.1:** Students translate lines of proportional relationships of the form *y* = *mx* to understand that linear relationships that are not proportional can be represented by the equation *y* = *mx* + *b*.
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| **Unit 4:** Linear Equations and Linear Systems*Extend knowledge of equations in one variable from prior grades to solve multi-step linear equations in one variable, determining the number of solutions. Solve and approximate solutions to systems of two linear equations in two variables using algebraic procedures, graphing techniques, and inspection (looking for and making use of structure).* | * **Multiple Representations of Functions:** Students connect contexts to symbolic representations by writing and solving linear equations to model real-world problems.
* **Linear Equations:** Students solve linear equations with variables on both sides of the equal sign and investigate systems of linear equations in two variables. They estimate solutions by graphing and solve systems using substitution. They analyze the slopes and intercepts of linear equations and systems of linear equations to determine the number of solutions.

For more information about how each Big Idea is developed throughout the grade, refer to the Keeping the Big Ideas at the Center ([pages xiv–xx](https://learning.amplify.com/m/22cdf033362f3969/original/ADM-G8-TE-FM-V1-CA.pdf#page=12)) in the Teacher Edition. | * **8.EE.7.a:** Students use number machines to explore linear equations in one variable that have one solution, no solutions, or infinitely many solutions. They look for and make use of structure in equations to make and verify predictions about the number of solutions.
* **8.EE.7.b:** Students solve linear equations in one variable that involve calculating with rational numbers, using the distributive property, and collecting like terms.
* **8.EE.8.a:** Through verbal descriptions, tables, graphs, and equations, students explore pairs of simultaneous linear relationships. They recognize that the point(s) of intersection of their graphs represent the solution(s) to the system.
* **8.EE.8.b:** Students use a variety of strategies to solve systems of linear equations, including determining exact solutions by substitution and elimination, estimating solutions by graphing, and determining exact solutions by inspecting the structure of the equations.
* **8.EE.8.c:** Students use systems of linear equations to solve problems, such as determining combinations of coins that have a total value of $2, choosing a cell phone plan, and balancing pairs of hanger diagrams.
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| **Unit 5:** Functions and Volume*Explore, define, and evaluate functions, using them to model relationships between quantities. Understand the volume of a cylinder, a cone, and a sphere each as a function of its radius. Develop and use formulas to solve real-world problems involving the volumes of these figures.* | * **Multiple Representations of Functions:** Students connect verbal descriptions of tables, graphs, and equations of functions and interpret the rate of change and intercept within each representation.
* **Linear Equations:** Students analyze and interpret the slope and intercept of linear functions.
* **Cylindrical Investigations:** Students explore the volume of a cylinder as a function of its radius. They investigate why the formula for the area of a circle is part of the formula for the volume of a cylinder, connecting this reasoning to the volume of prisms (*V* = *Bh*) where the base of a cylinder is a circle. Students use visual models to develop the formulas for the volume of a cylinder, the volume of a cone, and the volume of a sphere and solve problems involving the volume of cylinders, cones, and spheres. In Investigation 1: *Packing Spheres*, students investigate the volume of the empty space in a container of three tennis balls and then design their own container to hold five spheres (golf balls, tennis balls, bouncy balls, basketballs). They share their designs by participating in a Gallery Tour. This Investigation also addresses the Big Idea **Shape, Number, & Expressions***.*
* **Shape, Number, & Expressions:** Students investigate why the formula *V* = *πr*2*h* for the volume of a cylinder includes the expression *πr*2 from the circle area formula, connecting this reasoning to volume of prisms (*V* = *Bh*), where the base of a cylinder is a circle. They use visual models to prove the formula for the volume of a cylinder and relate the volume of a cylinder to the volume of a cone with the same base area and height. They connect squares and cubes to area and volume as they use cubic units to measure volume and square units to measure area.
* **Data, Graphs, & Tables:** Students construct and interpret graphs of relationships between two variables to model real-world situations and compare representations of functions.
* **Data Explorations:** Students explore data sets involving real-world situations and construct and interpret graphs of relationships between two variables that model those situations.
 | * **8.F.1:** Students use function machines, graphs, and real-world contexts to explore the concept of a function, understanding a function as a rule that assigns to each input (independent variable) exactly one output (dependent variable).
* **8.F.2:** Students interpret and compare rates of change and initial values of linear functions represented in different ways (verbal descriptions, tables, graphs, and equations).
* **8.F.3:** Students define a linear function as one that can be expressed using an equation of the form *y* = *mx* + *b*, where *m* is the constant rate of change and *b* is the initial value. They recognize linear functions have graphs that are straight lines. Students use volume formulas to identify examples of function relationships that are linear and examples that are not linear.
* **8.F.4:** Students construct functions to model real-world linear relationships, such as bank account balances and phone batteries. They use tables, graphs, and equations to determine and interpret the rates of change and initial values of the functions they construct.
* **8.F.5:** Students sketch graphs of functions based on short videos and verbal descriptions of real-world situations and describe their qualitative features, such as whether the functions are increasing, decreasing, linear, or nonlinear.
* **8.G.9:** Students connect the formula *V* = *Bh* for the volume of a prism to determine the volume of a cylinder, and use repeated stacked cylinders to develop the formula for the volume of a cone. They use relationships between cylinders, cones, and hemispheres to develop the formula for the volume of a sphere. Students use these formulas to solve problems, such as comparing different shapes of containers of popcorn.
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| **Unit 6:** Associations in Data*Reveal and investigate patterns of association in bivariate data sets by constructing scatter plots and two-way tables. Use linear functions to model associations in bivariate data, interpreting the slope and intercept within the context of the data.*  | * **Interpret Scatter Plots:** Students construct scatter plots using tables of bivariate data and describe patterns among the data, such as clusters, outliers, and possible types of associations. They fit lines to data, describing the features of a line that fits the data well, and use linear models to make predictions. Students interpret the slope of a linear model in context and connect scatter plots to two-way tables.
* **Data Explorations:** In Investigation 2: *The Ozone Layer Over Time*, students analyze data to investigate possible associations between changes in the ozone layer and people’s health. They learn about the Montreal Protocol and actions taken to help the ozone layer. Students present their findings by participating in a Gallery Tour. This Investigation also addresses the Big Idea **Interpret Scatter Plots***.*
* **Data, Graphs, & Tables:** Students create scatter plots to represent bivariate data and connect scatter plots to two-way tables. They represent real-life bivariate categorical data by displaying and analyzing patterns in frequencies and relative frequencies in two-way tables.
* **Multiple Representations of Functions:** Students construct scatter plots and linear models to represent real-world data.
* **Linear Equations:** Students connect real-world contexts to scatter plots and write linear functions to fit the data.
* **Slopes & Intercepts:** Students construct scatter plots to represent bivariate data. They fit lines to data and interpret the slopes of these linear models in context. They determine the types of associations shown on scatter plots and use them to make predictions about the data.

For more information about how each Big Idea is developed throughout the grade, refer to the Keeping the Big Ideas at the Center ([pages xiv–xx](https://learning.amplify.com/m/22cdf033362f3969/original/ADM-G8-TE-FM-V1-CA.pdf#page=12)) in the Teacher Edition. | * **8.SP.1:** Students explore real-world bivariate data and construct and interpret scatter plots to represent the data. They determine possible associations (positive, negative, linear, nonlinear) and identify any clusters or outliers.
* **8.SP.2:** Using contexts such as toy cats, bike prices, dog weights and heights, fuel economy, and the weights of animal brains, students draw lines to fit data represented in scatter plots and informally evaluate how well a line fits the data.
* **8.SP.3:** Students use equations of linear models to make predictions and solve problems about bivariate data. They interpret the slope and vertical intercept within context.
* **8.SP.4:** Students explore the tastiness of different kinds of fruit to connect scatter plots to two-way tables as a way to represent bivariate categorical data. They analyze patterns in frequencies and relative frequencies to determine and describe possible associations.
* **8.EE.5:** As students compare toy cats with varying heights and bow-tie widths, they use a proportional linear function to model the data, using the slope to make predictions.
* **8.EE.6:** Students use an equation of the form *y* = *mx* to model data involving toy cats.
* **8.F.3:** Students draw lines to fit data and write functions of the form *y* = *mx* + *b* that represent the lines. They determine whether scatter plots show possible linear or non-linear associations.
* **8.F.4:** Through various real-world contexts, students construct linear functions to model possible linear associations in sets of bivariate data, interpreting the slope and intercept within the context of the data.
* **8.F.5:** Students create possible scatter plots that match qualitative descriptions, including associations that are positive, negative, linear, or non-linear and data that includes or does not include clusters or outliers.
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| **Unit 7:** Exponents and Scientific Notation*Extend knowledge of expressions from prior grades to include integer exponents, applying the properties of integer exponents to generate equivalent expressions, including expressions where contexts of very large and very small numbers motivate scientific notation.* | * **Big & Small Numbers:** Students use patterns and reasoning to identify and create equivalent expressions involving positive and negative exponents and exponents of zero. They move on to develop strategies for rewriting very large and very small numbers as combinations of powers of 10, recognizing the need for a standard system to represent these numbers (scientific notation). They use scientific notation to perform operations with very large and very small numbers and solve real-world problems involving numbers written in both decimal notation and scientific notation.
* **Data Explorations:** Students investigate real-world data sets that involve data expressed in scientific notation and create a poster to summarize their findings. They then use data sets to compare the net worths of various celebrities.

For more information about how each Big Idea is developed throughout the grade, refer to the Keeping the Big Ideas at the Center ([pages xiv–xx](https://learning.amplify.com/m/22cdf033362f3969/original/ADM-G8-TE-FM-V1-CA.pdf#page=12)) in the Teacher Edition. | * **8.EE.1:** Students use structure and patterns to generalize properties of integer exponents (products of powers, powers of powers, quotients of powers, negative exponents, and exponents of zero) and use them to generate equivalent expressions.
* **8.EE.3:** Using the context of visualizing very large or very small objects placed on scales, students discover how to express large and small numbers using integer powers of 10.
* **8.EE.4:** Students use scientific notation and select appropriate units to represent very large and very small quantities. Through contexts such as weights and scales, the electricity needs of a city, and the net worth of celebrities, students perform operations with numbers expressed in scientific notation and decimal notation.
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| **Unit 8:** The Pythagorean Theorem and Irrational Numbers*Connect shape, numbers, and expressions by understanding and applying the Pythagorean theorem to solve problems involving real-world contexts and the coordinate plane.* | * **Pythagorean Explorations:** Students develop strategies to determine the area of a tiled square with vertices on the intersections of grid lines. They identify patterns between the areas of the squares of legs on triangles and notice that for right triangles, the sum of these areas is equal to the square of the hypotenuse. Naming this as the Pythagorean theorem, they use this relationship to solve real-world problems that involve rational numbers, such as calculating the distance between two points on the coordinate plane.
* **Shape, Number, & Expressions:** Students use area and volume models (squares and cubes) to make connections to integer exponents as they write and solve equations of the form *x*2 = *p* and *x*3 = *p*, where *p* is a positive rational number.

For more information about how each Big Idea is developed throughout the grade, refer to the Keeping the Big Ideas at the Center ([pages xiv–xx](https://learning.amplify.com/m/22cdf033362f3969/original/ADM-G8-TE-FM-V1-CA.pdf#page=12)) in the Teacher Edition. | * **8.G.6:** Students use gridded right triangles and area models to make generalizations that establish a proof of the Pythagorean theorem and use triangles and rigid transformations to establish its converse.
* **8.G.7:** Students apply the Pythagorean theorem to solve problems in a variety of contexts by determining unknown side lengths in right triangles. They repeatedly apply the Pythagorean theorem to determine unknown diagonal lengths in a rectangular prism.
* **8.G.8:** Students calculate the distance a frog needs to hop between lily pads plotted on a coordinate system to apply the Pythagorean theorem.
* **8.NS.1:** Students express fractions as decimals, recognizing when the decimal form of a fraction will terminate in 0s or eventually repeat. They describe characteristics of numbers that are not rational and determine whether given numbers are rational or irrational.
* **8.NS.2:** Using the structure of squares, circles, and cubes, students use rational approximations to make sense and estimate the value of rational number expressions. They plot their approximate locations on number lines.
* **8.EE.2:** Students use squares and cubes to represent solutions to equations of the form *x*2 = *p* and *x*3 = *p*, where *p* is a positive rational number. They solve equations of these forms to evaluate square roots of perfect squares and cube roots of perfect cubes. They determine whether numbers are rational or irrational.
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Publishers/developers should be aware of how major conceptual ideas develop from one grade to the next. For charts detailing the progression of the *Mathematics Framework*’s Big Ideas throughout the grade levels, see [chapter 6](https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.cde.ca.gov%2Fci%2Fma%2Fcf%2Fdocuments%2Fmathfwchapter6.docx&wdOrigin=BROWSELINK) (TK–grade 2 and grades 3–5) and [chapter 7](https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.cde.ca.gov%2Fci%2Fma%2Fcf%2Fdocuments%2Fmathfwchapter7.docx&wdOrigin=BROWSELINK) (grades 6–8).

State-adopted instructional materials help teachers to present and students to learn the content set forth in the *California Common Core State Standards for Mathematics with California Additions,* which include boththe content standards and the standards for mathematical practice (SMPs). Publishers/developers should use the following tables to provide page number citations or other references that demonstrate alignment with the SMPs and content standards.

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### Standards for Mathematical Practice

To view the full alignment of Amplify Desmos Math California to each of the Standards for Mathematical Practice, refer to [pages lii–liv](https://learning.amplify.com/m/22cdf033362f3969/original/ADM-G8-TE-FM-V1-CA.pdf#page=50) in the Teacher Edition. Exemplar citations are provided in the following table.

| **Standard** | **Standard Language** | **Publisher/Developer Citations** | **Met Yes** | **Met No** | **Reviewer Notes** |
| --- | --- | --- | --- | --- | --- |
| MP.1 | Make sense of problems and persevere in solving them.  | **Student Edition*** 4.10 ([Activity 1, Problems 3–4, page 391](https://learning.amplify.com/m/d6fd2de345290e7/original/ADM-G8-U4-10-SE-lesson-answer-key-CA.pdf#page=2))
* 5.15 ([Activity 3, Screens 9–10](https://teacher.desmos.com/activitybuilder/custom/68078c85907aef8d98d8b9e0?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/2b17ba83-226f-4b43-841a-a52855e053fc))
* 3.03 ([Warm-Up, Problem 1, page 222](https://learning.amplify.com/m/6c36a78d3e027bbe/original/ADM-G8-U3-03-SE-lesson-answer-key-CA.pdf))

**Teacher Edition*** 4.10 ([Activity 1, entire Launch and Connect sections, page 391](https://learning.amplify.com/m/7fe384711662ad18/original/ADM-G8-U4-10-TE-CA.pdf#page=4))
* 8.10 ([Activity 1, Connect, paragraph that begins with “Invite students to explain” and Image of Student Screen 4, page 841](https://learning.amplify.com/m/589a5d8fc13e075f/original/ADM-G8-U8-10-TE-CA.pdf#page=4))
* 7.12 ([Activity 1, Monitor, Differentiation table, row that begins with”Ask” and Image of Student Edition, Problem 4, page 738](https://learning.amplify.com/m/4f1d4e4c27301c02/original/ADM-G8-U7-12-TE-CA.pdf#page=4))

**Intervention, Extension, and Investigation Resources*** Investigation 1 ([Packing Spheres, student pages 276–277](https://learning.amplify.com/m/201fa42c82027273/original/ADM-8-Investigations-student-CA.pdf#page=3))
 |  |  |  |
| MP.2 | Reason abstractly and quantitatively. | **Student Edition*** Unit 4 Explore ([Activity, Problem 2, page 316](https://learning.amplify.com/m/4c38a532d1a26364/original/ADM-G8-U4-Explore-SE-lesson-answer-key-CA.pdf#page=2))
* 3.06 ([Activities 1–2, Problems 3–8, pages 246–248](https://learning.amplify.com/m/2c94758a7954b0c4/original/ADM-G8-U3-06-SE-lesson-answer-key-CA.pdf#page=2))
* 6.07 ([Activity 2, Screen 9](https://teacher.desmos.com/activitybuilder/custom/68078c86907aef8d98d93a4b?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/21e190e3-d843-4503-b2cf-470c7887d99a))
* 4.08 ([Warm-Up and Activity 1, Screens 1–3](https://teacher.desmos.com/activitybuilder/custom/68078c82907aef8d98d7d684?collections=68078c75907aef8d98d40f0a%2C68078c81907aef8d98d7a058#preview/6f8ebfe7-f3ee-433b-9fa7-8f2947ba8432))
* Unit 3 Explore ([Activity, Problems 2–6, page 206](https://learning.amplify.com/m/41363a9ac3ae2315/original/ADM-G8-U3-Explore-SE-lesson-answer-key-CA.pdf#page=2))

**Teacher Edition*** 4.02 ([Activity 2, Monitor, paragraph that begins with “Capture explanations” and Image of Student Screens 9–10, page 331](https://learning.amplify.com/m/3df7b82873da9856/original/ADM-G8-U4-02-TE-CA.pdf#page=7))
* Unit 3 Explore ([Activity, Monitor, Differentiation, page 206](https://learning.amplify.com/m/2f4b3e5039a5a275/original/ADM-G8-U3-Explore-TE-CA.pdf#page=4))
 |  |  |  |
| MP.3 | Construct viable arguments and critique the reasoning of others. | **Student Edition*** 7.11 ([Activity 1, Screen 4 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c89907aef8d98d9e07d?collections=68078c75907aef8d98d40f0a%2C68078c88907aef8d98d9ac6c#preview/0c5fc16c-d3b8-4eb7-9367-072b9c27d305))
* 5.14 ([Activity 3, Problem 6, page 541](https://learning.amplify.com/m/a6a6c264115a41c/original/ADM-G8-U5-14-SE-lesson-answer-key-CA.pdf#page=4))
* 1.09 ([Activity 2, Screen 6 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d46da3?collections=68078c75907aef8d98d40f0a%2C68078c75907aef8d98d413a0#preview/9832e97c-91c2-4d10-b567-f5ee374824b6))
* 8.08 ([Activity 1, Screen 3](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da6806?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/8c807dea-360b-43cb-b7f3-52a7bd7eff69))

**Teacher Edition*** 6.05 ([Warm-Up, entire Connect section and Image of Student Edition, Problem 1, page 592](https://learning.amplify.com/m/5e3f67104fecbb64/original/ADM-G8-U6-05-TE-CA.pdf#page=3))
* 4.04 ([Activity 1, Connect, MLR3: Critique, Connect, Clarify and Image of Student Edition, Problems 2–4, page 345](https://learning.amplify.com/m/3c807965a7e1d67f/original/ADM-G8-U4-04-TE-CA.pdf#page=4))
 |  |  |  |
| MP.4 | Model with mathematics. | **Student Edition*** 4.10 ([Activity 1, Problems 3–4, page 391](https://learning.amplify.com/m/d6fd2de345290e7/original/ADM-G8-U4-10-SE-lesson-answer-key-CA.pdf#page=2))
* 5.08 ([Activity 1, Problems 2–6, page 492](https://learning.amplify.com/m/70f19ee9d03df008/original/ADM-G8-U5-08-SE-lesson-answer-key-CA.pdf#page=2))
* 5.06 ([Activity 1, Screens 3–5](https://teacher.desmos.com/activitybuilder/custom/68078c84907aef8d98d887fe?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/5d88e9e2-cb05-42ca-9346-9328129d09e2))

**Teacher Edition*** 5.08 ([Activity 1, Monitor, Differentiation table, Row that begins with “Use a table”, page 492](https://learning.amplify.com/m/21367576bef5ff12/original/ADM-G8-U5-08-TE-CA.pdf#page=4))
* 5.04 ([Activity 1, Monitor, paragraph that begins with “Consider asking”, page 462](https://learning.amplify.com/m/57a19d9f1b462742/original/ADM-G8-U5-04-TE-CA.pdf#page=4) and [Student Edition Activity 1, Problem 4, parts a–d, page 463](https://learning.amplify.com/m/18096ba4519d6d15/original/ADM-G8-U5-04-SE-lesson-answer-key-CA.pdf#page=3))

**Intervention, Extension, and Investigation Resources*** Investigation 2 ([The Ozone Layer Over Time, student page 286](https://learning.amplify.com/m/201fa42c82027273/original/ADM-8-Investigations-student-CA.pdf#page=9), and [Data Set and Recording Sheet, page 290](https://learning.amplify.com/m/201fa42c82027273/original/ADM-8-Investigations-student-CA.pdf#page=13))
 |  |  |  |
| MP.5 | Use appropriate tools strategically. | **Student Edition*** 1.07 ([Activity 1, Problem 2, page 56](https://learning.amplify.com/m/20808808cfa676ea/original/ADM-G8-U1-07-SE-lesson-answer-key-CA.pdf#page=2))
* 5.08 ([Activity 1, Problems 5–6, page 492](https://learning.amplify.com/m/70f19ee9d03df008/original/ADM-G8-U5-08-SE-lesson-answer-key-CA.pdf#page=2))
* 8.03 ([Activity 1, Screen 2](https://teacher.desmos.com/activitybuilder/custom/68078c8a907aef8d98da5030?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/15c9c184-1b54-41d7-8d22-0c614ff6d4e6))

**Teacher Edition*** 1.07 ([Activity 1, entire Launch section, page 56](https://learning.amplify.com/m/5e38f5823452d2c5/original/ADM-G8-U1-07-TE-CA.pdf#page=4))
* 2.06 ([Activity 2, Monitor, paragraph that begins with “Look and listen for”, and Image of Student Edition, page 161](https://learning.amplify.com/m/2a2094f34e6dc2aa/original/ADM-G8-U2-06-TE-CA.pdf#page=5))
* 1.10 ([Activity 2, Monitor, paragraph that begins with “Encourage students to use”, and Image of Student Screen 6, page 79](https://learning.amplify.com/m/65e7bf2e43609e4d/original/ADM-G8-U1-10-TE-CA.pdf#page=5))
 |  |  |  |
| MP.6 | Attend to precision. | **Student Edition*** 7.06 ([Activity 1, Problems 2–3, page 693](https://learning.amplify.com/m/7a6098c79c057061/original/ADM-G8-U7-06-SE-lesson-answer-key-CA.pdf#page=2))
* 1.04 ([Activity 2, Problem 6, page 33](https://learning.amplify.com/m/1b34f722fcb06c62/original/ADM-G8-U1-04-SE-lesson-answer-key-CA.pdf#page=4))
* 4.05 ([Activity 1, Problem 5, page 351](https://learning.amplify.com/m/74df0a46ee212451/original/ADM-G8-U4-05-SE-lesson-answer-key-CA.pdf#page=2))

**Teacher Edition*** 7.06 ([Activity 1, Connect, paragraph that begins with “Invite students to share”, page 693](https://learning.amplify.com/m/42460de406232eb9/original/ADM-G8-U7-06-TE-CA.pdf#page=4))
* 5.02 ([Activity 2, Launch, MLR1: Stronger and Clearer Each Time, page 449](https://learning.amplify.com/m/7d49ed33aa2af917/original/ADM-G8-U5-02-TE-CA.pdf#page=6), and [Screen 9: Enter text into part a to view part b](https://teacher.desmos.com/activitybuilder/custom/68078c84907aef8d98d873e8?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/f0452b0b-f94a-4a42-95a8-14906adcd4d7))
 |  |  |  |
| MP.7 | Look for and make use of structure. | **Student Edition*** 4.04 ([Activity 1, Problems 2–4, page 345](https://learning.amplify.com/m/33541d35593636a0/original/ADM-G8-U4-04-SE-lesson-answer-key-CA.pdf#page=2))
* 7.04 ([Activity 1, Screen 2: click any expression to view second part](https://teacher.desmos.com/activitybuilder/custom/68078c88907aef8d98d9bd2b?collections=68078c75907aef8d98d40f0a%2C68078c88907aef8d98d9ac6c#preview/23c8586c-a78d-4155-9a07-b46e20b0da39) and [Screen 3](https://teacher.desmos.com/activitybuilder/custom/68078c88907aef8d98d9bd2b?collections=68078c75907aef8d98d40f0a%2C68078c88907aef8d98d9ac6c#preview/b7471a70-5b9d-4c5f-9a84-c86c9acec1fe))
* 6.01 ([Activity 1, Screen 5](https://teacher.desmos.com/activitybuilder/custom/68078c86907aef8d98d91de4?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/f03f29c3-56b4-49d4-bd40-37504c88d7d4))
* 2.05 ([Warm-Up, Screens 1–2](https://teacher.desmos.com/activitybuilder/custom/68078c7a907aef8d98d56774?collections=68078c75907aef8d98d40f0a%2C68078c79907aef8d98d537c7#preview/9f2c5ae5-a3f1-4850-9fca-6884096a6cf0))

**Teacher Edition*** 4.13 ([Activity 2, Connect, bulleted questions under “Consider Asking”, page 415](https://learning.amplify.com/m/1e5c9c2ebb422cb1/original/ADM-G8-U4-13-TE-CA.pdf#page=7) and [Screen 7](https://teacher.desmos.com/activitybuilder/custom/68078c82907aef8d98d801d4?collections=68078c75907aef8d98d40f0a%2C68078c81907aef8d98d7a058#preview/666d6008-a12c-4d5b-bdac-a547cba769c2))
* 2.05 ([Warm-Up, entire Connect section, and Image of Student Edition, Problems 1–2, page 146](https://learning.amplify.com/m/2a8cc1d8cd2dd208/original/ADM-G8-U2-05-TE-CA.pdf#page=3))
* 1.10 ([Activity 3, Monitor, paragraph that begins with “Look and listen for” and Image of Student Screen 7, page 80)](https://learning.amplify.com/m/65e7bf2e43609e4d/original/ADM-G8-U1-10-TE-CA.pdf#page=6)
 |  |  |  |
| MP.8 | Look for and express regularity in repeated reasoning. | **Student Edition*** 8.12 ([Activity 2, Problems 5–8, pages 857–858](https://learning.amplify.com/m/74dce9469d3eae77/original/ADM-G8-U8-12-SE-lesson-answer-key-CA.pdf#page=3))
* 8.03 ([Activity 3, Screen 6](https://teacher.desmos.com/activitybuilder/custom/68078c8a907aef8d98da5030?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/d18eee63-a970-4318-a4d3-adc3e3905119))
* 7.06 ([Activity 1, Problems 2–3, page 693](https://learning.amplify.com/m/7a6098c79c057061/original/ADM-G8-U7-06-SE-lesson-answer-key-CA.pdf#page=2))

**Teacher Edition*** 7.06 ([Activity 1, Monitor, Differentiation table, rows beginning with “Use expanding” and “Write rules”, page 693](https://learning.amplify.com/m/42460de406232eb9/original/ADM-G8-U7-06-TE-CA.pdf#page=4))
* 1.05 ([Activity 1, entire Connect section, page 39](https://learning.amplify.com/m/3dad0bab5f58a7cf/original/ADM-G8-U1-05-TE-CA.pdf#page=5) and [Screens 2–7](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d43e97?collections=68078c75907aef8d98d40f0a%2C68078c75907aef8d98d413a0#preview/d9761ff4-c9a3-4dfe-a8d9-6415d397298d))
* 3.11 ([Activity 1, Monitor, paragraphs that begins with “Consider asking” and “Note”, page 285](https://learning.amplify.com/m/4450eae24563d0ca/original/ADM-G8-U3-11-TE-CA.pdf#page=4) and [Screens 3–5](https://teacher.desmos.com/activitybuilder/custom/68078c7f907aef8d98d6ddc6?collections=68078c75907aef8d98d40f0a%2C68078c7d907aef8d98d63aa2#preview/d046d862-c73b-40c4-8fab-800772afc3e7))
 |  |  |  |

### Grade-level Content Standards

### Domain: The Number System

##### Cluster: Know that there are numbers that are not rational, and approximate them by rational numbers.

How does the program address this aspect of the domain?

Amplify Desmos Math California addresses this aspect of the domain in **Unit 8**. Students express fractions as decimals, recognizing when the decimal form of a fraction will terminate in 0s or eventually repeat. They describe characteristics of numbers that are not rational and determine whether given numbers are rational or irrational. Using the structure of squares, circles, and cubes, students use rational approximations to make sense and estimate the value of rational number expressions. They plot their approximate locations on number lines.

| **Standard** | **Cluster/Standard Language** | **Publisher/Developer Citations** | **Met Yes** | **Met No** | **Reviewer Notes** |
| --- | --- | --- | --- | --- | --- |
| 8.NS.1 | Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number. | *Know that numbers that are not rational are called irrational.***Student Edition*** 8.02 ([Activity 1, Screen 4](https://teacher.desmos.com/activitybuilder/custom/68078c8a907aef8d98da4b5d?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/b1802d96-f3a9-4cfe-801a-739ccde3ab5b))
* 8.14 ([Activity 2, Screens 4–7 and click on the Sample Responses tabs](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da863b?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/b0fb597d-599d-496a-8fb2-206d3217a628))

**Teacher Edition*** 8.02 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 780](https://learning.amplify.com/m/1a0c6046ba12a9a6/original/ADM-G8-U8-02-TE-CA.pdf#page=7))
* 8.14 ([Synthesis, Lesson Takeaway, page 873](https://learning.amplify.com/m/4dc87da2a9835064/original/ADM-G8-U8-14-TE-CA.pdf#page=7))

*Understand informally that every number has a decimal expansion.* **Student Edition*** 8.12 ([Synthesis and entire Summary section, page 859](https://learning.amplify.com/m/4cafb85b0068f077/original/ADM-G8-U8-12-SE-practice-answer-key-CA.pdf))

**Teacher Edition*** 8.12 ([Synthesis, Lesson Takeaway, page 859](https://learning.amplify.com/m/92180fa0e3f8649/original/ADM-G8-U8-12-TE-CA.pdf#page=7))

*For rational numbers show that the decimal expansion repeats eventually.***Student Edition*** 8.02 ([Summary, paragraph that begins with "Repeating and terminating decimals are also rational numbers”, Screen 13](https://teacher.desmos.com/activitybuilder/custom/68078c8a907aef8d98da4b5d?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/704a7f2f-6852-4124-ac90-89c854888fa7))
* 8.12 ([Activity 1, Problems 2–4, page 856](https://learning.amplify.com/m/74dce9469d3eae77/original/ADM-G8-U8-12-SE-lesson-answer-key-CA.pdf#page=2))

**Teacher Edition*** 8.12 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 859](https://learning.amplify.com/m/92180fa0e3f8649/original/ADM-G8-U8-12-TE-CA.pdf#page=7))

*Convert a decimal expansion which repeats eventually into a rational number.***Student Edition*** 8.13 ([Activity 2, Screens 8–9](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da7f56?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/20c70570-9252-43e8-8f36-09f8cc17dd6b))
* 8.13 ([entire Summary section, Screen 14](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da7f56?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/5ad2e2e0-d772-4835-b112-35e19cd35418))
 |  |  |  |
| 8.NS.2 | Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions.  | *Use rational approximations of irrational numbers to compare the size of irrational numbers.***Student Edition*** 8.14 ([Warm-Up, Screen 1 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da863b?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/5689e872-b80f-4fa0-bf0d-b2fd842eaddd))
* 8.04 ([Activity 1, Screens 5–6](https://teacher.desmos.com/activitybuilder/custom/68078c8a907aef8d98da52c0?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/90cd210d-e198-46f3-b1d5-a59d13e7ed55))

**Teacher Edition*** 8.14 ([Warm-Up, entire Launch section, page 869](https://learning.amplify.com/m/4dc87da2a9835064/original/ADM-G8-U8-14-TE-CA.pdf#page=3) and [Screen 1](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da863b?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/5689e872-b80f-4fa0-bf0d-b2fd842eaddd))

*Use rational approximations of irrational numbers to locate them approximately on a number line diagram.***Student Edition*** 8.04 ([Activity 1, Screen 6 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c8a907aef8d98da52c0?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/3acd8854-08bb-471a-aa38-6c208bc807e7))
* 8.05 ([Activity 2, Screens 8–11 and click on the Sample Responses tabs](https://teacher.desmos.com/activitybuilder/custom/68078c8a907aef8d98da581e?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/a8cd4844-f5b1-443c-8a3a-3352036e1c53))
* Unit 8 ([Practice Day 2, Problem 5, page 877](https://learning.amplify.com/m/362129ce0e0907e1/original/ADM-G8-U8-SE-practice-day-2-answer-key-CA.pdf#page=2))

*Use rational approximations of irrational numbers to estimate the value of expressions.***Student Edition*** 8.03 ([Activities 2–3, Screens 4–8 and click on the Sample Responses tabs](https://teacher.desmos.com/activitybuilder/custom/68078c8a907aef8d98da5030?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/4535502c-aebc-40f8-a458-21aa0cb29d29))
* 8.14 ([Activity 1, Screen 3](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da863b?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/25fe79bc-5c56-4f41-a895-455e6e6b9bac))
 |  |  |  |

### Domain: Expressions and Equations

##### Cluster: Work with radicals and integer exponents.

How does the program address this aspect of the domain?

Amplify Desmos Math California addresses this aspect of the domain in Units 7 and 8.

* In **Unit 7**, students use structure and patterns to generalize properties of integer exponents (products of powers, powers of powers, quotients of powers, negative exponents, and exponents of zero) and use them to generate equivalent expressions. Using the context of visualizing very large or very small objects placed on scales, students discover how to express large and small numbers using integer powers of 10. Students use scientific notation and select appropriate units to represent very large and very small quantities. Through contexts such as weights and scales, the electricity needs of a city, and the net worth of celebrities, students perform operations with numbers expressed in scientific notation and decimal notation.
* In **Unit 8**, students use squares and cubes to represent solutions to equations of the form *x*2 = *p* and *x*3 = *p*, where *p* is a positive rational number. They solve equations of these forms to evaluate square roots of perfect squares and cube roots of perfect cubes. They determine whether numbers are rational or irrational.

| **Standard** | **Cluster/Standard Language** | **Publisher/Developer Citations** | **Met Yes** | **Met No** | **Reviewer Notes** |
| --- | --- | --- | --- | --- | --- |
| 8.EE.1 | Know and apply the properties of integer exponents to generate equivalent numerical expressions.  | **Student Edition*** 7.06 ([Activities 1–2, Problems 2–5, pages 693–694](https://learning.amplify.com/m/7a6098c79c057061/original/ADM-G8-U7-06-SE-lesson-answer-key-CA.pdf#page=2))
* 7.06 ([entire Summary section, page 695](https://learning.amplify.com/m/38b526ead10ae900/original/ADM-G8-U7-06-SE-practice-answer-key-CA.pdf))
* 7.03 ([Warm-Up, Problems 1–2, page 671](https://learning.amplify.com/m/493523208c2b4ac4/original/ADM-G8-U7-03-SE-lesson-answer-key-CA.pdf))
* 7.04 ([Activity 1, Screens 3–4](https://teacher.desmos.com/activitybuilder/custom/68078c88907aef8d98d9bd2b?collections=68078c75907aef8d98d40f0a%2C68078c88907aef8d98d9ac6c#preview/b7471a70-5b9d-4c5f-9a84-c86c9acec1fe))

**Teacher Edition*** 7.05 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 689](https://learning.amplify.com/m/3be1e6cddb8602c3/original/ADM-G8-U7-05-TE-CA.pdf#page=8))
 |  |  |  |
| 8.EE.2 | Use square root and cube root symbols to represent solutions to equations of the form *x*2 = *p* and *x*3 = *p*, where *p* is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that √2 is irrational. | *Use square root and cube root symbols to represent solutions to equations of the form x2 = p and x3 = p, where p is a positive rational number.* **Student Edition*** 8.04 ([Activity 1, Screen 3](https://teacher.desmos.com/activitybuilder/custom/68078c8a907aef8d98da52c0?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/eb005efe-8aa9-4ec0-a8cb-95a5298ef96e))
* 8.04 ([Summary, first paragraph, Screen 11](https://teacher.desmos.com/activitybuilder/custom/68078c8a907aef8d98da52c0?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/1a8b26dd-2d24-4cbe-b4da-281b913da2b1))
* 8.05 ([Practice, Screen 4, Problems 7–10](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98daa132?collections=68078c8a907aef8d98da428a%2C68078c8b907aef8d98da955f#preview/4c5a9174-4b06-47b9-8fb5-aefce1c26663))
* 8.05 ([Summary, first paragraph, Screen 16](https://teacher.desmos.com/activitybuilder/custom/68078c8a907aef8d98da581e?collections=68078c8a907aef8d98da428a#preview/4b3a1727-f850-48c1-a6d2-9d48c49bac93))
* 8.05 ([Activity 2, Screen 10 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c8a907aef8d98da581e?collections=68078c8a907aef8d98da428a#preview/28be68b4-2422-487f-9603-f37fbc70b7ef))

**Teacher Edition*** 8.04 ([Activity 1, Connect, first bulleted question under “To Surface the Key Takeaway” and Key Takeaway, page 792](https://learning.amplify.com/m/319fbdff152e2e07/original/ADM-G8-U8-04-TE-CA.pdf#page=5))
* 8.05 ([Activity 1, Connect, Key Takeaway, page 799](https://learning.amplify.com/m/354371aecf51f915/original/ADM-G8-U8-05-TE-CA.pdf#page=5))

*Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that √2 is irrational.***Student Edition*** 8.04 ([Warm-Up, Screens 1–2](https://teacher.desmos.com/activitybuilder/custom/68078c8a907aef8d98da52c0?collections=68078c8a907aef8d98da428a#preview/b5d760f9-6278-495b-9f05-d531957800b9))
* 8.05 ([Activity 2, Screen 8](https://teacher.desmos.com/activitybuilder/custom/68078c8a907aef8d98da581e?collections=68078c8a907aef8d98da428a#preview/a8cd4844-f5b1-443c-8a3a-3352036e1c53))
* 8.05 ([Practice, Screen 3, Problems 3–6](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98daa132?collections=68078c8a907aef8d98da428a%2C68078c8b907aef8d98da955f#preview/2ce58a87-8ad4-4465-bc57-631e523299b9))
* 8.02 ([Summary, paragraph that begins with “Irrational numbers include decimals that never repeat or terminate”, Screen 13](https://teacher.desmos.com/activitybuilder/custom/68078c8a907aef8d98da4b5d?collections=68078c8a907aef8d98da428a#preview/704a7f2f-6852-4124-ac90-89c854888fa7))
* 8.14 ([Activity 2, Screens 6 and 8](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da863b?collections=68078c8a907aef8d98da428a#preview/4a1cc7f2-7aaa-4aba-bd7f-e2631d02cdff))

**Teacher Edition*** 8.04 ([Warm-Up, entire Launch section, page 790](https://learning.amplify.com/m/319fbdff152e2e07/original/ADM-G8-U8-04-TE-CA.pdf#page=3))
 |  |  |  |
| 8.EE.3 | Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.  | *Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large quantities.***Student Edition*** 7.07 ([Activities 1–2, Screens 4–8 and click on the Sample Responses tabs](https://teacher.desmos.com/activitybuilder/custom/68078c88907aef8d98d9cd75?collections=68078c75907aef8d98d40f0a%2C68078c88907aef8d98d9ac6c#preview/de67fcca-1427-46bb-a410-4879d741831e))
* 7.07 ([Show What You Know, Screen 11](https://teacher.desmos.com/activitybuilder/custom/68078c88907aef8d98d9cd75?collections=68078c75907aef8d98d40f0a%2C68078c88907aef8d98d9ac6c#preview/40a795a4-edd3-4abf-93b5-40cac3a0fb83))

**Teacher Edition*** 7.07 ([Activity 1, Monitor, paragraph that says “Look for and celebrate”, page 702](https://learning.amplify.com/m/670b57341d8a6f6c/original/ADM-G8-U7-07-TE-CA.pdf#page=4))

*Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very small quantities.***Student Edition*** 7.08 ([Activity 1, Screens 4–5 and click on the Sample Responses tabs](https://teacher.desmos.com/activitybuilder/custom/68078c88907aef8d98d9d0cf?collections=68078c75907aef8d98d40f0a%2C68078c88907aef8d98d9ac6c#preview/a2fc0d5f-52ea-4e01-ad4a-e2617109ef06))
* 7.08 ([Synthesis, Screen 9](https://teacher.desmos.com/activitybuilder/custom/68078c88907aef8d98d9d0cf?collections=68078c75907aef8d98d40f0a%2C68078c88907aef8d98d9ac6c#preview/15a9e61b-9be9-4918-bf8a-60e411ea672b))

*Express how many times as much one is than the other.***Student Edition*** 7.11 ([Activity 1, Screen 4 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c89907aef8d98d9e07d?collections=68078c75907aef8d98d40f0a%2C68078c88907aef8d98d9ac6c#preview/0c5fc16c-d3b8-4eb7-9367-072b9c27d305))
* 7.11 ([Synthesis, Screen 9 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c89907aef8d98d9e07d?collections=68078c75907aef8d98d40f0a%2C68078c88907aef8d98d9ac6c#preview/9128a9c5-1f7e-4495-8911-93b0ee107b4d))

**Teacher Edition*** 7.11 ([entire Synthesis section, including Lesson Takeaway and Image of Synthesis and Summary Student Edition, page 734](https://learning.amplify.com/m/5cf83cb6c959c584/original/ADM-G8-U7-11-TE-CA.pdf#page=7))
 |  |  |  |
| 8.EE.4 | Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities. Interpret scientific notation that has been generated by technology. | *Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.***Student Edition*** 7.10 ([Activities 1–2, Problems 2–5, pages 724–725](https://learning.amplify.com/m/61977de92fe51c84/original/ADM-G8-U7-10-SE-lesson-answer-key-CA.pdf#page=2))
* 7.12 [(Activity 1, Problems 4–5, pages 738–739](https://learning.amplify.com/m/7c2ede37407351e7/original/ADM-G8-U7-12-SE-lesson-answer-key-CA.pdf#page=2))
* 7.13 ([Activity 1, Screen 4](https://teacher.desmos.com/activitybuilder/custom/68078c89907aef8d98d9e777?collections=68078c75907aef8d98d40f0a%2C68078c88907aef8d98d9ac6c#preview/5d112a3b-a37a-4e0a-950b-73526bd65310))

**Teacher Edition*** 7.10 ([entire Synthesis section, including Lesson Takeaway and Image of Synthesis and Summary Student Edition, page 727](https://learning.amplify.com/m/4d0488e280bd2b7c/original/ADM-G8-U7-10-TE-CA.pdf#page=7))
* 7.13 ([entire Synthesis section, including Lesson Takeaway and Image of Synthesis, and Summary Student Edition, page 748](https://learning.amplify.com/m/2bce8492ae4a9662/original/ADM-G8-U7-13-TE-CA.pdf#page=8))

*Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities.* **Student Edition*** 7.09 ([Activity 2, Screen 9](https://teacher.desmos.com/activitybuilder/custom/68078c89907aef8d98d9d97e?collections=68078c75907aef8d98d40f0a%2C68078c88907aef8d98d9ac6c#preview/c96a918c-5b9c-4200-959d-4effd5819705))
* 7.12 ([Activity 1, Problems 4–5, pages 738–739](https://learning.amplify.com/m/7c2ede37407351e7/original/ADM-G8-U7-12-SE-lesson-answer-key-CA.pdf#page=2))
* 7.14 ([Activity 1, Problems 7–8, page 752](https://learning.amplify.com/m/1e6e50834e612e8c/original/ADM-G8-U7-14-SE-lesson-answer-key-CA.pdf#page=2))

**Teacher Edition*** 7.09 ([Synthesis, Lesson Takeaway, page 720](https://learning.amplify.com/m/6ec1691614f08115/original/ADM-G8-U7-09-TE-CA.pdf#page=6))
* 7.09 ([Activity 2, Monitor, paragraph that begins with "Consider asking”, page 719](https://learning.amplify.com/m/6ec1691614f08115/original/ADM-G8-U7-09-TE-CA.pdf#page=5))

*Interpret scientific notation that has been generated by technology.***Student Edition*** 7.09 ([Activity 1, Screen 6](https://teacher.desmos.com/activitybuilder/custom/68078c89907aef8d98d9d97e?collections=68078c75907aef8d98d40f0a%2C68078c88907aef8d98d9ac6c#preview/3464367b-525e-4062-8850-3522aad9ade1))

**Teacher Edition*** 7.09 ([Activity 1, Monitor, paragraph that begins with “Invite students to use a calculator”, page 718](https://learning.amplify.com/m/6ec1691614f08115/original/ADM-G8-U7-09-TE-CA.pdf#page=4))
 |  |  |  |

#####

##### Cluster: Understand the connections between proportional relationships, lines, and linear equations.

How does the program address this aspect of the domain?

Amplify Desmos Math California addresses this aspect of the domain in Units 2, 3, and 6.

* In **Unit 2**, through the context of water slides, students apply their understanding of similar triangles to make sense of slope and why the slope is the same between any two points on a non-vertical line.
* In **Unit 3**, using contexts such as turtle races and water tanks, students recognize that the slope of a line representing a proportional relationship is the unit rate. They compare proportional relationships expressed in different forms (tables, graphs, equations). Students continue their understanding of slope from Unit 2 and proportional relationships from Grade 7 as they derive the equation *y* = *mx*, where *m* is the slope (unit rate), to represent proportional relationships. They then use translations of *y* = *mx* to derive the equation *y* = *mx* + *b*, where *b* represents the vertical intercept, recognizing that when *b* ≠ 0, the relationship is linear, but not proportional.
* In **Unit 6**, students compare toy cats with varying heights and bow-tie widths and use a proportional linear function of the form *y* = *mx* to model the data, using the slope to make predictions.

| **Standard** | **Standard Language** | **Publisher/Developer Citations** | **Met****Yes** | **Met No** | **Reviewer Notes** |
| --- | --- | --- | --- | --- | --- |
| 8.EE.5 | Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.  | *Graph proportional relationships, interpreting the unit rate as the slope of the graph.***Student Edition*** 3.02 ([Activity 1, Screen 4, and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c7d907aef8d98d654e9?collections=68078c75907aef8d98d40f0a%2C68078c7d907aef8d98d63aa2#preview/a8081f1f-f731-4adc-be68-45980ab718a0))
* 3.02 ([Activity 1, Screen 5, part b: Enter *V* = 7.5*t* into part a to view part b](https://teacher.desmos.com/activitybuilder/custom/68078c7d907aef8d98d654e9?collections=68078c75907aef8d98d40f0a%2C68078c7d907aef8d98d63aa2#preview/b88406f5-8b68-4edb-aa25-28813c5f9d20))
* 3.01 ([Activity 1, Screen 7, part b: Enter a response into part a to view part b](https://teacher.desmos.com/activitybuilder/custom/68078c7d907aef8d98d649c2?collections=68078c75907aef8d98d40f0a%2C68078c7d907aef8d98d63aa2#preview/9cc0938b-b75f-40b5-9000-2e24f04c08c7))

**Teacher Edition*** 3.01 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 213](https://learning.amplify.com/m/678e50b5b418f676/original/ADM-G8-U3-01-TE-CA.pdf#page=7))
* 3.02 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 219](https://learning.amplify.com/m/28eec3ee95bee8e8/original/ADM-G8-U3-02-TE-CA.pdf#page=6))

*Compare two different proportional relationships represented in different ways.***Student Edition*** 3.03 ([Warm-Up, Problem 1, page 222](https://learning.amplify.com/m/6c36a78d3e027bbe/original/ADM-G8-U3-03-SE-lesson-answer-key-CA.pdf))
* 3.03 ([Activity 1, Problems 2–5, page 223](https://learning.amplify.com/m/6c36a78d3e027bbe/original/ADM-G8-U3-03-SE-lesson-answer-key-CA.pdf#page=2) and [Activity 1 Sheet](https://learning.amplify.com/m/7f7363ae8af646a/original/ADM-G8-U3-03-sheet-CA.pdf))
* 3.03 ([Practice, Problems 2–4, page 226](https://learning.amplify.com/m/2c21e29c64d8f4b5/original/ADM-G8-U3-03-SE-practice-answer-key-CA.pdf#page=2))
* 3.03 ([Synthesis, page 225](https://learning.amplify.com/m/2c21e29c64d8f4b5/original/ADM-G8-U3-03-SE-practice-answer-key-CA.pdf))

**Teacher Edition*** 3.03 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 225](https://learning.amplify.com/m/a06d64b367f58f0/original/ADM-G8-U3-03-TE-CA.pdf#page=6))
 |  |  |  |
| 8.EE.6 | Use similar triangles to explain why the slope *m* is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation *y = mx* for a line through the origin and the equation *y = mx + b* for a line intercepting the vertical axis at *b*. | *Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane.***Student Edition*** 2.09 ([Activity 2, Screen 6 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c7a907aef8d98d5910e?collections=68078c75907aef8d98d40f0a%2C68078c79907aef8d98d537c7#preview/999b3388-4d9a-400e-8aed-8d3507542a10))
* 2.09 ([Activity 3, Screens 10–12 and click on the Sample Responses tabs](https://teacher.desmos.com/activitybuilder/custom/68078c7a907aef8d98d5910e?collections=68078c75907aef8d98d40f0a%2C68078c79907aef8d98d537c7#preview/9836de52-a898-41d3-8c67-dd6ea250178e))
* 2.10 ([Activity 1, Screen 2](https://teacher.desmos.com/activitybuilder/custom/68078c7b907aef8d98d59c35?collections=68078c75907aef8d98d40f0a%2C68078c79907aef8d98d537c7#preview/fb1b631e-1d59-4abf-94df-dac995f64d41))
* 2.10 ([entire Summary section, Screen 10](https://teacher.desmos.com/activitybuilder/custom/68078c7b907aef8d98d59c35?collections=68078c75907aef8d98d40f0a%2C68078c79907aef8d98d537c7#preview/41aba19d-ee38-4354-b8dc-6aa7a95b4616))

**Teacher Edition*** 2.09 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 186](https://learning.amplify.com/m/38722f772a24fb0/original/ADM-G8-U2-09-TE-CA.pdf#page=8))

*Derive the equation y = mx for a line through the origin.***Student Edition*** 3.02 ([Activity 1, Screens 4–5, For Screen 5 part b: Enter *V* = 7.5*t* into part a to view part b](https://teacher.desmos.com/activitybuilder/custom/68078c7d907aef8d98d654e9?collections=68078c75907aef8d98d40f0a%2C68078c7d907aef8d98d63aa2#preview/a8081f1f-f731-4adc-be68-45980ab718a0))
* 3.02 ([Synthesis, Screen 8](https://teacher.desmos.com/activitybuilder/custom/68078c7d907aef8d98d654e9?collections=68078c75907aef8d98d40f0a%2C68078c7d907aef8d98d63aa2#preview/15d5d9ba-4e61-4362-bdda-670a5597efa6))

**Teacher Edition*** 3.02 ([entire Synthesis section, including Lesson Takeaway and Image of Synthesis and Summary Student Edition, page 219](https://learning.amplify.com/m/28eec3ee95bee8e8/original/ADM-G8-U3-02-TE-CA.pdf#page=6))

*Derive the equation y = mx + b for a line intercepting the vertical axis at b.***Student Edition*** 3.08 ([Activity 1, Screens 4–5](https://teacher.desmos.com/activitybuilder/custom/68078c7e907aef8d98d6af5f?collections=68078c75907aef8d98d40f0a%2C68078c7d907aef8d98d63aa2#preview/8f5e4649-0a3b-42fa-9a8f-e44c78d3667d))
* 3.08 ([entire Summary section, Screen 13](https://teacher.desmos.com/activitybuilder/custom/68078c7e907aef8d98d6af5f?collections=68078c75907aef8d98d40f0a%2C68078c7d907aef8d98d63aa2#preview/3dc9e057-8f48-4cb7-8ae7-b3651948f7bc))
* 3.06 ([Activity 1, Problem 3–6, page 246](https://learning.amplify.com/m/2c94758a7954b0c4/original/ADM-G8-U3-06-SE-lesson-answer-key-CA.pdf#page=2))
* 3.06 ([entire Summary section, page 249](https://learning.amplify.com/m/97ae7a4ae7d99f8/original/ADM-G8-U3-06-SE-practice-answer-key-CA.pdf))

**Teacher Edition*** 3.06 ([Activity 2, Connect, Key Takeaway, page 248](https://learning.amplify.com/m/32bdd85d065551e1/original/ADM-G8-U3-06-TE-CA.pdf#page=6))
* 3.08 ([Activity 1, entire Connect section, including Key Takeaway, page 261](https://learning.amplify.com/m/4bbabf6a2b12781a/original/ADM-G8-U3-08-TE-CA.pdf#page=4))
 |  |  |  |

##### Cluster: Analyze and solve linear equations and pairs of simultaneous linear equations.

How does the program address this aspect of the domain?

Amplify Desmos Math California addresses this aspect of the domain in **Unit 4**. Students solve linear equations in one variable that involve calculating with rational numbers, using the distributive property, and collecting like terms. Through verbal descriptions, tables, graphs, and equations, students explore pairs of simultaneous linear relationships. They recognize that the point(s) of intersection of their graphs represent the solution(s) to the system. Students use a variety of strategies to solve systems of linear equations, including determining exact solutions by substitution and elimination, estimating solutions by graphing, and determining exact solutions by inspecting the structure of the equations. They use systems of linear equations to solve problems, such as determining combinations of coins that have a total value of $2, choosing a cell phone plan, and balancing pairs of hanger diagrams.

| **Standard** | **Standard Language** | **Publisher/Developer Citations** | **Met****Yes** | **Met No** | **Reviewer Notes** |
| --- | --- | --- | --- | --- | --- |
| 8.EE.7a | Solve linear equations in one variable. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form *x = a*, *a = a*, or *a = b* results (where *a* and *b* are different numbers). | *Solve linear equations in one variable.***Student Edition*** 4.04 ([Activity 1, Problems 2–4, page 345](https://learning.amplify.com/m/33541d35593636a0/original/ADM-G8-U4-04-SE-lesson-answer-key-CA.pdf#page=2))
* 4.04 ([Activity 2, Problem 5, page 346](https://learning.amplify.com/m/33541d35593636a0/original/ADM-G8-U4-04-SE-lesson-answer-key-CA.pdf#page=3))

**Teacher Edition*** 4.04 ([entire Synthesis section, including Lesson Takeaway and Image of Synthesis and Summary Student Edition, page 347](https://learning.amplify.com/m/3c807965a7e1d67f/original/ADM-G8-U4-04-TE-CA.pdf#page=6))

*Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).***Student Edition*** 4.06 ([Activity 2, Screens 8–11 and click on the Sample Responses tabs](https://teacher.desmos.com/activitybuilder/custom/68078c82907aef8d98d7cfac?collections=68078c75907aef8d98d40f0a%2C68078c81907aef8d98d7a058#preview/98d0d758-6a9b-469f-946a-367e2c8211c4))
* 4.07 ([entire Summary section, page 368](https://learning.amplify.com/m/b08e2afaa0410c/original/ADM-G8-U4-07-SE-practice-answer-key-CA.pdf))
* 4.06 ([entire Summary section, Screen 15](https://teacher.desmos.com/activitybuilder/custom/68078c82907aef8d98d7cfac?collections=68078c75907aef8d98d40f0a%2C68078c81907aef8d98d7a058#preview/a704a0af-9968-4a3d-9407-48d83c1a8fb3))

**Teacher Edition*** 4.06 ([Activity 2, Monitor, paragraph that begins with “Look and Listen for”, page 359](https://learning.amplify.com/m/1ad671d64b452166/original/ADM-G8-U4-06-TE-CA.pdf#page=6))
 |  |  |  |
| 8.EE.7b | Solve linear equations in one variable. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. | **Student Edition*** 4.04 ([Activity 1, Problems 2–4, page 345](https://learning.amplify.com/m/33541d35593636a0/original/ADM-G8-U4-04-SE-lesson-answer-key-CA.pdf#page=2))
* 4.04 ([Activity 2, Problem 5, page 346](https://learning.amplify.com/m/33541d35593636a0/original/ADM-G8-U4-04-SE-lesson-answer-key-CA.pdf#page=3))

**Teacher Edition*** 4.04 ([entire Synthesis section, including Lesson Takeaway and Image of Synthesis and Summary Student Edition, page 347](https://learning.amplify.com/m/3c807965a7e1d67f/original/ADM-G8-U4-04-TE-CA.pdf#page=6))
 |  |  |  |
| 8.EE.8a | Analyze and solve pairs of simultaneous linear equations. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.  | *Analyze and solve pairs of simultaneous linear equations.***Student Edition*** 4.10 ([Activity 1, Problems 3–4, page 391](https://learning.amplify.com/m/d6fd2de345290e7/original/ADM-G8-U4-10-SE-lesson-answer-key-CA.pdf#page=2))
* 4.12 ([entire Summary section, Screen 12](https://teacher.desmos.com/activitybuilder/custom/68078c82907aef8d98d7f4d4?collections=68078c75907aef8d98d40f0a%2C68078c81907aef8d98d7a058#preview/69cc9af5-dace-4b8a-bf2f-dc6bd13d794d))
* 4.14 ([Activity 2, Problems 6–8, pages 421–422](https://learning.amplify.com/m/2d6909ff2d1a8bed/original/ADM-G8-U4-14-SE-lesson-answer-key-CA.pdf#page=3))

**Teacher Edition*** 4.14 ([Synthesis, paragraph that begins with “Have students share” and Image of Synthesis Student Edition, page 423](https://learning.amplify.com/m/2998d1a34f819ef1/original/ADM-G8-U4-14-TE-CA.pdf#page=7))

*Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.***Student Edition*** 4.11 ([Activities 1–2, Screens 5–9 and click on the Sample Responses tabs](https://teacher.desmos.com/activitybuilder/custom/68078c82907aef8d98d7efdf?collections=68078c75907aef8d98d40f0a%2C68078c81907aef8d98d7a058#preview/feb8fb6d-c6cf-4ef3-bcd2-545fc514048f))
* 4.11 ([Synthesis, Screen 11 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c82907aef8d98d7efdf?collections=68078c75907aef8d98d40f0a%2C68078c81907aef8d98d7a058#preview/bb09b22c-0b41-4610-9259-e334e211b927))

**Teacher Edition*** 4.11 ([Synthesis Lesson Takeaway and Image of Summary Student Edition, page 401](https://learning.amplify.com/m/23209637b36b1744/original/ADM-G8-U4-11-TE-CA.pdf#page=8))
* 4.09 ([Activity 1, Connect, bulleted questions under “To Surface the Key Takeaway”, page 385](https://learning.amplify.com/m/39729a982433d447/original/ADM-G8-U4-09-TE-CA.pdf#page=5))
 |  |  |  |
| 8.EE.8b | Analyze and solve pairs of simultaneous linear equations. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection.  | *Analyze and solve pairs of simultaneous linear equations.***Student Edition*** 4.10 ([Activity 1, Problems 3–4, page 391](https://learning.amplify.com/m/d6fd2de345290e7/original/ADM-G8-U4-10-SE-lesson-answer-key-CA.pdf#page=2))
* 4.12 ([entire Summary section, Screen 12](https://teacher.desmos.com/activitybuilder/custom/68078c82907aef8d98d7f4d4?collections=68078c75907aef8d98d40f0a%2C68078c81907aef8d98d7a058#preview/69cc9af5-dace-4b8a-bf2f-dc6bd13d794d))
* 4.14 ([Activity 2, Problems 6–8, pages 421–422](https://learning.amplify.com/m/2d6909ff2d1a8bed/original/ADM-G8-U4-14-SE-lesson-answer-key-CA.pdf#page=3))

**Teacher Edition*** 4.14 ([Synthesis, paragraph that begins with “Have students share” and Image of Synthesis Student Edition, page 423](https://learning.amplify.com/m/2998d1a34f819ef1/original/ADM-G8-U4-14-TE-CA.pdf#page=7))

*Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations.* **Student Edition*** 4.12 ([Activities 1–2, Screens 3–4](https://teacher.desmos.com/activitybuilder/custom/68078c82907aef8d98d7f4d4?collections=68078c75907aef8d98d40f0a%2C68078c81907aef8d98d7a058#preview/b1a6e293-ab9b-44c9-bf3d-1a47e25058e3))
* 4.10 ([Activity 1, Problem 3, page 391](https://learning.amplify.com/m/d6fd2de345290e7/original/ADM-G8-U4-10-SE-lesson-answer-key-CA.pdf#page=2))
* 4.14 ([Activity 2, Problem 8, page 422](https://learning.amplify.com/m/2d6909ff2d1a8bed/original/ADM-G8-U4-14-SE-lesson-answer-key-CA.pdf#page=4))

**Teacher Edition*** 4.12 ([Activity 1, Connect, Key Takeaway, page 405](https://learning.amplify.com/m/2f3d0e92dd7d5350/original/ADM-G8-U4-12-TE-CA.pdf#page=4))
* 4.10 ([Synthesis, Lesson Takeaway, page 393](https://learning.amplify.com/m/7fe384711662ad18/original/ADM-G8-U4-10-TE-CA.pdf#page=6))

*Solve simple cases by inspection.***Student Edition*** 4.13 ([Activity 1, Screen 3 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c82907aef8d98d801d4?collections=68078c75907aef8d98d40f0a%2C68078c81907aef8d98d7a058#preview/63a9bbca-48b2-4c5e-b369-a2a64d909361))
* 4.13 ([Activity 1, Screen 5 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c82907aef8d98d801d4?collections=68078c75907aef8d98d40f0a%2C68078c81907aef8d98d7a058#preview/95f82d2b-390b-4402-98f8-a07e12c17db4))
* 4.13 ([entire Summary section, Screen 12](https://teacher.desmos.com/activitybuilder/custom/68078c82907aef8d98d801d4?collections=68078c75907aef8d98d40f0a%2C68078c81907aef8d98d7a058#preview/12490d5f-aa59-4101-a25d-f98314327fa8))

**Teacher Edition*** 4.13 ([Activity 1, Connect, bulleted list under “To surface the Key Takeaway” and Key Takeaway, page 413](https://learning.amplify.com/m/1e5c9c2ebb422cb1/original/ADM-G8-U4-13-TE-CA.pdf#page=5))
 |  |  |  |
| 8.EE.8c | Analyze and solve pairs of simultaneous linear equations. Solve real-world and mathematical problems leading to two linear equations in two variables.  | *Analyze and solve pairs of simultaneous linear equations.***Student Edition*** 4.10 ([Activity 1, Problems 3–4, page 391](https://learning.amplify.com/m/d6fd2de345290e7/original/ADM-G8-U4-10-SE-lesson-answer-key-CA.pdf#page=2))
* 4.12 ([entire Summary section, Screen 12](https://teacher.desmos.com/activitybuilder/custom/68078c82907aef8d98d7f4d4?collections=68078c75907aef8d98d40f0a%2C68078c81907aef8d98d7a058#preview/69cc9af5-dace-4b8a-bf2f-dc6bd13d794d))
* 4.14 ([Activity 2, Problems 6–8, pages 421–422](https://learning.amplify.com/m/2d6909ff2d1a8bed/original/ADM-G8-U4-14-SE-lesson-answer-key-CA.pdf#page=3))

**Teacher Edition*** 4.14 ([Synthesis, paragraph that begins with “Have students share” and Image of Synthesis Student Edition, page 423](https://learning.amplify.com/m/2998d1a34f819ef1/original/ADM-G8-U4-14-TE-CA.pdf#page=7))

*Solve real-world and mathematical problems leading to two linear equations in two variables.* **Student Edition*** 4.10 ([Activity 1, Problems 3–4, page 391](https://learning.amplify.com/m/d6fd2de345290e7/original/ADM-G8-U4-10-SE-lesson-answer-key-CA.pdf#page=2))

**Teacher Edition*** 4.10 ([Activity 1, entire Connect section, including Key Takeaway, page 391](https://learning.amplify.com/m/7fe384711662ad18/original/ADM-G8-U4-10-TE-CA.pdf#page=4))
* 4.10 ([Warm-Up, Connect, “Note” and paragraph that begins with “Consider asking”, page 390, and Image of Student Edition, Problems 1–2](https://learning.amplify.com/m/7fe384711662ad18/original/ADM-G8-U4-10-TE-CA.pdf#page=3))
 |  |  |  |

### Domain: Functions

##### Cluster: Define, evaluate, and compare functions.

How does the program address this aspect of the domain?

Amplify Desmos Math California addresses this aspect of the domain in Units 3, 5, and 6.

* In **Unit 3**, using contexts such as costs of public transportation and stacking cups, students explore relationships with constant rates of change, calling those relationships *linear*.They use the equation *y* = *mx* + *b* to represent linear relationships, recognizing their graphs are straight lines. Students notice that when the initial value is not 0, the graph does not pass through the origin.
* In **Unit 5**, students use function machines, graphs, and real-world contexts to explore the concept of a function, understanding a function as a rule that assigns to each input (independent variable) exactly one output (dependent variable). They interpret and compare rates of change and initial values of linear functions represented in different ways (verbal descriptions, tables, graphs, and equations). Students define a linear function as one that can be expressed using an equation of the form *y* = *mx* + *b*, where *m* is the constant rate of change and *b* is the initial value. They recognize linear functions have graphs that are straight lines. Students use volume formulas to identify examples of function relationships that are linear and examples that are not linear.
* In **Unit 6**, students draw lines to fit data and write functions of the form *y* = *mx* + *b* that represent the lines. They determine whether scatter plots show possible linear or non-linear associations.

| **Standard** | **Cluster/Standard Language** | **Publisher/Developer Citations** | **Met Yes** | **Met No** | **Reviewer Notes** |
| --- | --- | --- | --- | --- | --- |
| 8.F.1 | Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.[[2]](#footnote-1) | *Understand that a function is a rule that assigns to each input exactly one output.***Student Edition*** 5.02 ([Activity 2, Screen 9 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c84907aef8d98d873e8?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/f0452b0b-f94a-4a42-95a8-14906adcd4d7))
* 5.03 ([Activity 2, Screens 6–8 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c84907aef8d98d87bd7?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/bc665dfe-f301-4ff2-af33-37780d3e3b8d))

**Teacher Edition*** 5.02 ([Activity 2, Connect, Key Takeaway, page 449](https://learning.amplify.com/m/7d49ed33aa2af917/original/ADM-G8-U5-02-TE-CA.pdf#page=6))

*The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.***Student Edition*** 5.03 ([Activity 1, Screen 4 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c84907aef8d98d87bd7?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/c33d23bb-8bab-48cb-801c-5570ccffaba9))
* 5.03 ([Activity 2, Screen 7 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c84907aef8d98d87bd7?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/6848ca2b-515c-4ea0-a1b3-b7dcdd3daaef))

**Teacher Edition*** 5.03 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 458](https://learning.amplify.com/m/5b000ede6946db9/original/ADM-G8-U5-03-TE-CA.pdf#page=8))
 |  |  |  |
| 8.F.2 | Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).  | **Student Edition*** 5.07 ([Activities 1–2, Problems 4–8, pages 485–486](https://learning.amplify.com/m/4bc852180bd0a021/original/ADM-G8-U5-07-SE-lesson-answer-key-CA.pdf#page=2))
* 5.07 ([entire Summary section, page 488](https://learning.amplify.com/m/70b4219a0fdbf2cb/original/ADM-G8-U5-07-SE-practice-answer-key-CA.pdf))

**Teacher Edition*** 5.07 ([Activity 1, Monitor, Differentiation table, page 485](https://learning.amplify.com/m/3f4151081e07552f/original/ADM-G8-U5-07-TE-CA.pdf#page=4))
 |  |  |  |
| 8.F.3  | Interpret the equation *y* = *mx* + *b* as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.  | *Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line.***Student Edition*** 3.04 ([Activity 3, Screen 7](https://teacher.desmos.com/activitybuilder/custom/68078c7e907aef8d98d67254?collections=68078c75907aef8d98d40f0a%2C68078c7d907aef8d98d63aa2#preview/f9f84d31-b9b8-463b-96a0-4d21d3478779))
* 3.06 ([entire Summary section, page 249](https://learning.amplify.com/m/97ae7a4ae7d99f8/original/ADM-G8-U3-06-SE-practice-answer-key-CA.pdf))
* 5.07 ([Activity 2, Problems 8–10, page 486–487](https://learning.amplify.com/m/4bc852180bd0a021/original/ADM-G8-U5-07-SE-lesson-answer-key-CA.pdf#page=3))
* 3.04 ([entire Summary section, Screen 14](https://teacher.desmos.com/activitybuilder/custom/68078c7e907aef8d98d67254?collections=68078c75907aef8d98d40f0a%2C68078c7d907aef8d98d63aa2#preview/83435974-5fdd-48fa-a4f9-486e89012ba9))

**Teacher Edition*** 5.07 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 488](https://learning.amplify.com/m/3f4151081e07552f/original/ADM-G8-U5-07-TE-CA.pdf#page=7))

*Give examples of functions that are not linear.***Student Edition*** 5.12 ([Activity 2, Screens 7 and 9 and click on the Sample Responses tabs](https://teacher.desmos.com/activitybuilder/custom/68078c84907aef8d98d8a91b?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/b02a07e1-eb2e-447a-b931-87d037c3a4f0))
* 5.12 ([Summary, third paragraph, Screen 13](https://teacher.desmos.com/activitybuilder/custom/68078c84907aef8d98d8a91b?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/927c566a-15af-4c36-a9c3-4c1347760104))
* Unit 5 Practice Day 2 ([Task Cards: Task A, Problem 2](https://learning.amplify.com/m/425a9e7bcdf09454/original/ADM-8-5-practice-day-2-sheet-CA.pdf))

**Teacher Edition*** 5.12 ([Activity 2, Connect, Key Takeaway, page 527](https://learning.amplify.com/m/4637c0d17a348025/original/ADM-G8-U5-12-TE-CA.pdf#page=6))
 |  |  |  |

#####

##### Cluster: Use functions to model relationships between quantities.

How does the program address this aspect of the domain?

Amplify Desmos Math California addresses this aspect of the domain in Units 3, 5, and 6.

* In **Unit 3**, students use tables, graphs, and equations of the form *y* = *mx* + *b* to model linear relationships between two quantities, such as all possible combinations of pennies and quarters that are worth a fixed amount. They determine and interpret the rate of change and initial value from these representations.
* In **Unit 5**, students construct functions to model real-world linear relationships, such as bank account balances and phone batteries. They use tables, graphs, and equations to determine and interpret the rates of change and initial values of the functions they construct. Students sketch graphs of functions based on short videos and verbal descriptions of real-world situations and describe their qualitative features, such as whether the functions are increasing, decreasing, linear, or nonlinear.
* In **Unit 6**, through various real-world contexts, students construct linear functions to model possible linear associations in sets of bivariate data, interpreting the slope and intercept within the context of the data. They create possible scatter plots that match qualitative descriptions, including associations that are positive, negative, linear, or non-linear and data that includes or does not include clusters or outliers.

| **Standard** | **Standard Language** | **Publisher/Developer Citations** | **Met****Yes** | **Met No** | **Reviewer Notes** |
| --- | --- | --- | --- | --- | --- |
| 8.F.4 | Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (*x*, *y*) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. | *Construct a function to model a linear relationship between two quantities.***Student Edition*** 5.08 ([Activity 1, Problems 5–6, page 492](https://learning.amplify.com/m/70f19ee9d03df008/original/ADM-G8-U5-08-SE-lesson-answer-key-CA.pdf#page=2))
* 6.09 ([Activity 2, Screen 6](https://teacher.desmos.com/activitybuilder/custom/68078c87907aef8d98d942cd?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/6e90b85e-586c-4309-abb7-49be50004e68))
* 6.07 ([Activities 1–2, Screens 4 and 7](https://teacher.desmos.com/activitybuilder/custom/68078c86907aef8d98d93a4b?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/80579beb-871e-48cd-916c-d5d3cc7ce128))

**Teacher Edition*** 5.08 ([Synthesis, first bullet under “Have students share” and Lesson Takeaway, page 494](https://learning.amplify.com/m/21367576bef5ff12/original/ADM-G8-U5-08-TE-CA.pdf#page=6))

*Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.***Student Edition*** 5.07 ([Activities 1–2, Problems 4–10, pages 485–487](https://learning.amplify.com/m/4bc852180bd0a021/original/ADM-G8-U5-07-SE-lesson-answer-key-CA.pdf#page=2))
* 5.07 ([entire Summary section, page 488](https://learning.amplify.com/m/70b4219a0fdbf2cb/original/ADM-G8-U5-07-SE-practice-answer-key-CA.pdf))
* 3.06 ([Activities 1–2, Problems 3–8, pages 246–248](https://learning.amplify.com/m/2c94758a7954b0c4/original/ADM-G8-U3-06-SE-lesson-answer-key-CA.pdf#page=2))
* 3.11 ([Activity 1, Screens 4–5](https://teacher.desmos.com/activitybuilder/custom/68078c7f907aef8d98d6ddc6?collections=68078c75907aef8d98d40f0a%2C68078c7d907aef8d98d63aa2#preview/21896829-067c-4dc3-b2c4-5ca8280a8cda))
* 6.09 ([Activity 2, Screen 7](https://teacher.desmos.com/activitybuilder/custom/68078c87907aef8d98d942cd?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/11686040-b357-4018-847b-8af948e17e21))

**Teacher Edition*** 3.06 ([Activity 2, entire Connect section, including Key Takeaway, page 248](https://learning.amplify.com/m/32bdd85d065551e1/original/ADM-G8-U3-06-TE-CA.pdf#page=6))
* 3.11 ([Activity 1, Connect, Key Takeaway, page 286](https://learning.amplify.com/m/4450eae24563d0ca/original/ADM-G8-U3-11-TE-CA.pdf#page=5))
 |  |  |  |
| 8.F.5 | Describe qualitatively the functional relationship between two quantities by analyzing a graph. Sketch a graph that exhibits the qualitative features of a function that has been described verbally. | *Describe qualitatively the functional relationship between two quantities by analyzing a graph.***Student Edition*** 5.06 ([Activity 3, Screen 8](https://teacher.desmos.com/activitybuilder/custom/68078c84907aef8d98d887fe?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/177918b7-a4bd-4e01-b486-b3f205afcac2))
* 5.06 ([entire Summary section, Screen 12](https://teacher.desmos.com/activitybuilder/custom/68078c84907aef8d98d887fe?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/06652d66-499e-491e-9f7d-debd18fe268e))

**Teacher Edition*** 5.06 ([entire Synthesis section, including Lesson Takeaway and Image of Synthesis and Summary Student Edition, page 481](https://learning.amplify.com/m/61df54dc2b9db1cc/original/ADM-G8-U5-06-TE-CA.pdf#page=7))
* 5.06 ([Activity 3, Monitor, Differentiation table, page 480](https://learning.amplify.com/m/61df54dc2b9db1cc/original/ADM-G8-U5-06-TE-CA.pdf#page=6))

*Sketch a graph that exhibits the qualitative features of a function that has been described verbally.***Student Edition*** 5.05 ([Activity 2, Screen 6 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c84907aef8d98d88530?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/39d851a5-2337-461e-b023-dd9b92b02636))
* Unit 5 Practice Day 1 ([Task Cards: Task D](https://learning.amplify.com/m/6f46d33bf20e5e0a/original/ADM-8-5-practice-day-1-sheet-CA.pdf#page=4))

**Teacher Edition*** 5.06 ([Activity 1, Monitor, Differentiation table, page 478](https://learning.amplify.com/m/61df54dc2b9db1cc/original/ADM-G8-U5-06-TE-CA.pdf#page=4) and [Screen 3](https://teacher.desmos.com/activitybuilder/custom/68078c84907aef8d98d887fe?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/5d88e9e2-cb05-42ca-9346-9328129d09e2))
 |  |  |  |

### Domain: Geometry

##### Cluster: Understand congruence and similarity using physical models, transparencies, or geometry software.

How does the program address this aspect of the domain?

Amplify Desmos Math California addresses this aspect of the domain in Units 1, 2, and 3.

* In **Unit 1**, students use tools, including tracing paper and rulers, to verify that lines and lengths of line segments are preserved during translations, rotations, or reflections. They use tools, including tracing paper and protractors, to verify that angle measurements are preserved during translations, rotations, or reflections. Students use tools, including dynamic geometry software, to verify that parallel lines are preserved during translations, rotations, or reflections. They explore what it means for figures to be the “same” and learn the term *congruent*. Students discover that two figures are congruent if there is a sequence of rigid transformations that maps one onto the other. They apply their knowledge of rigid transformations and congruent figures to analyze tessellations found in art and architecture around the world and create their own tessellations. Students use dynamic geometry software to describe the effect of rigid transformations on two-dimensional figures using coordinates. They use rigid transformations to explain angle relationships that are formed when parallel lines are cut by a transversal. They observe that the sum of the interior angle measures in a triangle is 180 degrees and use angle relationships to determine the measures of exterior angles of triangles.
* In **Unit 2**, students use tools, such as tracing paper, straightedges, and dynamic geometry software to verify the effects of sequences of transformations that include both rigid transformations and dilations. They apply their knowledge of rigid transformations and dilations to justify whether two given figures are similar, congruent, or neither. Students perform dilations to describe their effect on two-dimensional figures using coordinates. They explore properties of similar figures and discover that two figures are similar if there is a sequence of translations, reflections, rotations, and dilations that maps one onto the other. Students apply similar triangles to solve real-world problems involving shadow lengths of objects. They use dynamic geometry software to discover that if the angle measures for two corresponding angles of two triangles are congruent, then the triangles are similar (angle-angle criterion).
* In **Unit 3**, students translate lines of proportional relationships of the form *y* = *mx* to understand that linear relationships that are not proportional can be represented by the equation *y* = *mx* + *b*.

| **Standard** | **Cluster/Standard Language** | **Publisher/Developer Citations** | **Met Yes** | **Met No** | **Reviewer Notes** |
| --- | --- | --- | --- | --- | --- |
| 8.G.1a | Verify experimentally the properties of rotations, reflections, and translations: Lines are taken to lines, and line segments to line segments of the same length. | *Verify experimentally the properties of rotations, reflections, and translations.***Student Edition*** 1.03 ([Activity 1, Screens 2–3](https://teacher.desmos.com/activitybuilder/custom/68078c75907aef8d98d43163?collections=68078c75907aef8d98d40f0a%2C68078c75907aef8d98d413a0#preview/9ee0a66f-92f9-4e52-ac9b-9f83d6d31553))
* 1.04 ([Synthesis and entire Summary section, page 34](https://learning.amplify.com/m/666ffdf264286271/original/ADM-G8-U1-04-SE-practice-answer-key-CA.pdf))
* 1.07 ([entire Summary section, page 58](https://learning.amplify.com/m/6521ab157b6f0d19/original/ADM-G8-U1-07-SE-practice-answer-key-CA.pdf))

**Teacher Edition*** 1.02 ([Synthesis, Lesson Takeaway, page 20](https://learning.amplify.com/m/a701e82d3f9b54f/original/ADM-G8-U1-02-TE-CA.pdf#page=7))
* 1.04 ([Activity 1, entire Connect section, including Key Takeaway, page 32](https://learning.amplify.com/m/4611c0780208fa06/original/ADM-G8-U1-04-TE-CA.pdf#page=5))

*Lines are taken to lines, and line segments to line segments of the same length.***Student Edition*** 1.10 ([Warm-Up, Screens 1–2 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d4771d?collections=68078c75907aef8d98d40f0a%2C68078c75907aef8d98d413a0#preview/794f783b-7055-445c-86b0-3f50acec985c))
* 3.08 ([Activity 1, Screens 3–4](https://teacher.desmos.com/activitybuilder/custom/68078c7e907aef8d98d6af5f?collections=68078c75907aef8d98d40f0a%2C68078c7d907aef8d98d63aa2#preview/6261fd92-9404-4cfc-9c6f-f9b4114550a9))
* 1.07 ([Activity 1, Problem 2, page 56](https://learning.amplify.com/m/20808808cfa676ea/original/ADM-G8-U1-07-SE-lesson-answer-key-CA.pdf#page=2))
* 1.07 ([Practice, Problems 7 and 10, page 60](https://learning.amplify.com/m/6521ab157b6f0d19/original/ADM-G8-U1-07-SE-practice-answer-key-CA.pdf#page=3))
* Unit 1 ([Practice Day 2, Problem 4, page 108](https://learning.amplify.com/m/5504bfa65d752fbf/original/ADM-G8-U1-SE-practice-day-2-answer-key-CA.pdf#page=2))

**Teacher Edition*** 1.10 ([Warm-Up, entire Launch and Connect sections, including Key Takeaway, page 77](https://learning.amplify.com/m/65e7bf2e43609e4d/original/ADM-G8-U1-10-TE-CA.pdf#page=3))
* 1.07 ([Activity 1, entire Connect section, including Key Takeaway, page 56](https://learning.amplify.com/m/5e38f5823452d2c5/original/ADM-G8-U1-07-TE-CA.pdf#page=4))
* 1.07 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 58](https://learning.amplify.com/m/5e38f5823452d2c5/original/ADM-G8-U1-07-TE-CA.pdf#page=6))
 |  |  |  |
| 8.G.1b | Verify experimentally the properties of rotations, reflections, and translations: Angles are taken to angles of the same measure. | *Verify experimentally the properties of rotations, reflections, and translations.***Student Edition*** 1.03 ([Activity 1, Screens 2–3](https://teacher.desmos.com/activitybuilder/custom/68078c75907aef8d98d43163?collections=68078c75907aef8d98d40f0a%2C68078c75907aef8d98d413a0#preview/9ee0a66f-92f9-4e52-ac9b-9f83d6d31553))
* 1.04 ([Synthesis and entire Summary section, page 34](https://learning.amplify.com/m/666ffdf264286271/original/ADM-G8-U1-04-SE-practice-answer-key-CA.pdf))
* 1.07 ([entire Summary section, page 58](https://learning.amplify.com/m/6521ab157b6f0d19/original/ADM-G8-U1-07-SE-practice-answer-key-CA.pdf))

**Teacher Edition*** 1.02 ([Synthesis, Lesson Takeaway, page 20](https://learning.amplify.com/m/a701e82d3f9b54f/original/ADM-G8-U1-02-TE-CA.pdf#page=7))
* 1.04 ([Activity 1, entire Connect section, including Key Takeaway, page 32](https://learning.amplify.com/m/4611c0780208fa06/original/ADM-G8-U1-04-TE-CA.pdf#page=5))

*Angles are taken to angles of the same measure.***Student Edition*** 1.07 ([Activity 1, Problem 2, page 56](https://learning.amplify.com/m/20808808cfa676ea/original/ADM-G8-U1-07-SE-lesson-answer-key-CA.pdf#page=2))
* 1.07 ([Practice, Problems 8–9, page 60](https://learning.amplify.com/m/6521ab157b6f0d19/original/ADM-G8-U1-07-SE-practice-answer-key-CA.pdf#page=3))

**Teacher Edition*** 1.07 ([Activity 1, entire Connect section, including Key Takeaway, page 56](https://learning.amplify.com/m/5e38f5823452d2c5/original/ADM-G8-U1-07-TE-CA.pdf#page=4))
* 1.07 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 58](https://learning.amplify.com/m/5e38f5823452d2c5/original/ADM-G8-U1-07-TE-CA.pdf#page=6))
 |  |  |  |
| 8.G.1c | Verify experimentally the properties of rotations, reflections, and translations: Parallel lines are taken to parallel lines. | *Verify experimentally the properties of rotations, reflections, and translations.***Student Edition*** 1.03 ([Activity 1, Screens 2–3](https://teacher.desmos.com/activitybuilder/custom/68078c75907aef8d98d43163?collections=68078c75907aef8d98d40f0a%2C68078c75907aef8d98d413a0#preview/9ee0a66f-92f9-4e52-ac9b-9f83d6d31553))
* 1.04 ([Synthesis and entire Summary section, page 34](https://learning.amplify.com/m/666ffdf264286271/original/ADM-G8-U1-04-SE-practice-answer-key-CA.pdf))
* 1.07 ([entire Summary section, page 58](https://learning.amplify.com/m/6521ab157b6f0d19/original/ADM-G8-U1-07-SE-practice-answer-key-CA.pdf))

**Teacher Edition*** 1.02 ([Synthesis, Lesson Takeaway, page 20](https://learning.amplify.com/m/a701e82d3f9b54f/original/ADM-G8-U1-02-TE-CA.pdf#page=7))
* 1.04 ([Activity 1, entire Connect section, including Key Takeaway, page 32](https://learning.amplify.com/m/4611c0780208fa06/original/ADM-G8-U1-04-TE-CA.pdf#page=5))

*Parallel lines are taken to parallel lines.***Student Edition*** 1.10 ([Warm-Up, Screen 2 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d4771d?collections=68078c75907aef8d98d40f0a%2C68078c75907aef8d98d413a0#preview/59dc8c33-f351-469c-bcc8-6fbd75e927a3))

**Teacher Edition*** 1.10 ([Warm-Up, Connect, Key Takeaway, page 77](https://learning.amplify.com/m/65e7bf2e43609e4d/original/ADM-G8-U1-10-TE-CA.pdf#page=3))
 |  |  |  |
| 8.G.2 | Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them. | *Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations.***Student Edition*** 1.08 ([Activity 1, Screens 3–6](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d46622?collections=68078c75907aef8d98d40f0a%2C68078c75907aef8d98d413a0#preview/45f9934f-d4a9-4554-8199-dd9f59d36571))
* 1.08 ([Practice, Screens 6–7, Problems 7–8](https://teacher.desmos.com/activitybuilder/custom/68078c78907aef8d98d4eb45?collections=68078c75907aef8d98d413a0%2C68078c78907aef8d98d4c42d#preview/761647bc-accc-49c7-8bcf-fd27312f5f67))
* 1.09 ([Activity 1, Screens 2–5 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d46da3?collections=68078c75907aef8d98d413a0#preview/c60cc8d2-a725-4bb2-9f33-254eaf6acdb2))

**Teacher Edition*** 1.08 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 66](https://learning.amplify.com/m/36352c1029782994/original/ADM-G8-U1-08-TE-CA.pdf#page=8))

*Given two congruent figures, describe a sequence that exhibits the congruence between them.***Student Edition*** 1.08 ([Activity 1, Screen 4 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d46622?collections=68078c75907aef8d98d413a0#preview/943ce1f1-e75e-49ba-9429-44496196ac72))
* 1.09 ([Activity 1, Screen 5 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d46da3?collections=68078c75907aef8d98d413a0#preview/69e69bf7-2b81-4784-962a-c19aa8f3b35f))

**Teacher Edition*** 1.08 ([Synthesis, Lesson Takeaway, page 66](https://learning.amplify.com/m/36352c1029782994/original/ADM-G8-U1-08-TE-CA.pdf#page=8))
 |  |  |  |
| 8.G.3 | Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. | *Describe the effect of dilations on two-dimensional figures using coordinates.***Student Edition*** 2.05 ([Activity 1, Problems 3–8, pages 147–148](https://learning.amplify.com/m/5635f37d3b9c3563/original/ADM-G8-U2-05-SE-lesson-answer-key-CA.pdf#page=2))
* 2.05 ([entire Summary section, page 151](https://learning.amplify.com/m/6e10b39c56c85bc1/original/ADM-G8-U2-05-SE-practice-answer-key-CA.pdf))

**Teacher Edition*** 2.05 ([Activity 1, Monitor, Differentiation table, row that begins with “Want to explore”, page 148](https://learning.amplify.com/m/2a8cc1d8cd2dd208/original/ADM-G8-U2-05-TE-CA.pdf#page=5))

*Describe the effect of translations on two-dimensional figures using coordinates.***Student Edition*** 1.05 ([Activity 2, Screens 9–10](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d43e97?collections=68078c75907aef8d98d413a0#preview/55acde17-0d17-403c-955a-6940195bdf95))
* 1.05 ([Synthesis, Screen 11](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d43e97?collections=68078c75907aef8d98d413a0#preview/2f4d4b2e-7f09-4234-83ce-f3986c921d13))
* 1.05 ([Summary, left column, Screen 14](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d43e97?collections=68078c75907aef8d98d413a0#preview/8bf9874a-f316-40a6-949b-df2756b3466a))

**Teacher Edition*** 1.05 ([Activity 2, Connect, Key Takeaway, page 40](https://learning.amplify.com/m/3dad0bab5f58a7cf/original/ADM-G8-U1-05-TE-CA.pdf#page=6))

*Describe the effect of rotations on two-dimensional figures using coordinates.***Student Edition*** 1.06 ([Activity 1, Screens 3–6](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d44b7a?collections=68078c75907aef8d98d413a0#preview/2339a66a-c55d-449d-8926-76c3b9a7866b))
* 1.06 ([Synthesis, Screen 9](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d44b7a?collections=68078c75907aef8d98d413a0#preview/12cb7e2c-70cf-4e1e-a851-1d9ad5786682))

**Teacher Edition*** 1.06 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 48](https://learning.amplify.com/m/535ecba7773bcfa3/original/ADM-G8-U1-06-TE-CA.pdf#page=7))

*Describe the effect of reflections on two-dimensional figures using coordinates.***Student Edition*** 1.05 ([Activity 1, Screens 2–7](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d43e97?collections=68078c75907aef8d98d413a0#preview/d9761ff4-c9a3-4dfe-a8d9-6415d397298d))
* 1.05 ([Synthesis, Screen 11](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d43e97?collections=68078c75907aef8d98d413a0#preview/2f4d4b2e-7f09-4234-83ce-f3986c921d13))
* 1.05 ([Summary, right column, Screen 14](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d43e97?collections=68078c75907aef8d98d413a0#preview/8bf9874a-f316-40a6-949b-df2756b3466a))

**Teacher Edition*** 1.05 ([Activity 1, entire Connect section, including Key Takeaway, page 39](https://learning.amplify.com/m/3dad0bab5f58a7cf/original/ADM-G8-U1-05-TE-CA.pdf#page=5))
 |  |  |  |
| 8.G.4 | Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them. | *Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations.***Student Edition*** 2.06 ([Activity 1, Problems 2–3, page 160](https://learning.amplify.com/m/784635a88325b2f7/original/ADM-G8-U2-06-SE-lesson-answer-key-CA.pdf#page=2))
* 2.06 ([Synthesis, page 163](https://learning.amplify.com/m/1fb9575c18051fa7/original/ADM-G8-U2-06-SE-practice-answer-key-CA.pdf))
* 2.06 ([Summary, first paragraph, page 163](https://learning.amplify.com/m/1fb9575c18051fa7/original/ADM-G8-U2-06-SE-practice-answer-key-CA.pdf))

**Teacher Edition*** 2.06 ([Synthesis, Lesson Takeaway, page 163](https://learning.amplify.com/m/2a2094f34e6dc2aa/original/ADM-G8-U2-06-TE-CA.pdf#page=7))

*Given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.***Student Edition*** 2.06 ([Activity 1, Problem 3, page 160](https://learning.amplify.com/m/784635a88325b2f7/original/ADM-G8-U2-06-SE-lesson-answer-key-CA.pdf#page=2))
* 2.06 ([Practice, Problems 2–3, page 164](https://learning.amplify.com/m/1fb9575c18051fa7/original/ADM-G8-U2-06-SE-practice-answer-key-CA.pdf#page=2))
* Unit 2 ([Practice Day 2, Set A, Problem 2, page 196](https://learning.amplify.com/m/37447c1805c32ec2/original/ADM-G8-U2-SE-practice-day-2-answer-key-CA.pdf))
 |  |  |  |
| 8.G.5 | Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.  | *Use informal arguments to establish facts about the angle sum and exterior angle of triangles.***Student Edition*** 1.11 ([Activity 2, Problems 5–9, page 87](https://learning.amplify.com/m/39e1372f46ca461a/original/ADM-G8-U1-11-SE-lesson-answer-key-CA.pdf#page=3))
* 1.11 ([Synthesis, page 88](https://learning.amplify.com/m/475c937afefa8214/original/ADM-G8-U1-11-SE-practice-answer-key-CA.pdf))
* 1.11 ([Practice, Problem 7, page 90](https://learning.amplify.com/m/475c937afefa8214/original/ADM-G8-U1-11-SE-practice-answer-key-CA.pdf#page=3))
* 1.12 ([Activity 1, Screens 4–7](https://teacher.desmos.com/activitybuilder/custom/68078c77907aef8d98d4897e?collections=68078c75907aef8d98d413a0#preview/52cb171b-47c0-4ec6-89f6-c72f7bb075e8))
* 1.12 ([Practice, Screens 1–2, Problems 1–4](https://teacher.desmos.com/activitybuilder/custom/68078c78907aef8d98d4fefb?collections=68078c75907aef8d98d413a0%2C68078c78907aef8d98d4c42d#preview/c9ee8949-0f9c-4193-8c2d-66aad3d3a186))

**Teacher Edition*** 1.11 ([entire Synthesis section, including Lesson Takeaway and Image of Synthesis and Summary Student Edition, page 88](https://learning.amplify.com/m/78337f290b25b9b5/original/ADM-G8-U1-11-TE-CA.pdf#page=6))
* 1.12 ([Activity 1, bulleted text under “To Surface the Key Takeaway” and Key Takeaway, page 93](https://learning.amplify.com/m/7c15063bb354df27/original/ADM-G8-U1-12-TE-CA.pdf#page=5))

*Use informal arguments to establish facts about the angles created when parallel lines are cut by a transversal.***Student Edition*** 1.10 ([Activities 2–3, Screens 5–7](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d4771d?collections=68078c75907aef8d98d413a0#preview/a4e8a316-5fca-4dcb-a237-729576410802))
* 1.10 ([Show What You Know, Screen 12](https://teacher.desmos.com/activitybuilder/custom/68078c76907aef8d98d4771d?collections=68078c75907aef8d98d413a0#preview/59c51e1b-18a9-4e97-97b5-12651a1a9950))

**Teacher Edition*** 1.10 ([Activity 3, entire Monitor section and Image of Student Screens 7–8, page 80](https://learning.amplify.com/m/65e7bf2e43609e4d/original/ADM-G8-U1-10-TE-CA.pdf#page=6))
* 1.10 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 82](https://learning.amplify.com/m/65e7bf2e43609e4d/original/ADM-G8-U1-10-TE-CA.pdf#page=8))

*Use informal arguments to establish facts about the angle-angle criterion for similarity of triangles.***Student Edition*** 2.07 ([Activity 1, Screens 3–7; For Screens 4 and 6: click “Try It” to view parts a–b.](https://teacher.desmos.com/activitybuilder/custom/68078c7a907aef8d98d57b75?collections=68078c75907aef8d98d40f0a%2C68078c79907aef8d98d537c7#preview/a9e9e8f1-0855-4a94-833d-d12db9962005))
* 2.07 ([Synthesis, Screen 10 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c7a907aef8d98d57b75?collections=68078c75907aef8d98d40f0a%2C68078c79907aef8d98d537c7#preview/ba6bb971-c664-4b63-8bd0-88b428be9231))

**Teacher Edition*** 2.07 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 170](https://learning.amplify.com/m/479c4571cdc211cb/original/ADM-G8-U2-07-TE-CA.pdf#page=7))
 |  |  |  |

#####

##### Cluster: Understand and apply the Pythagorean Theorem.

How does the program address this aspect of the domain?

Amplify Desmos Math California addresses this aspect of the domain in **Unit 8**. Students use gridded right triangles and area models to make generalizations that establish a proof of the Pythagorean theorem and use triangles and rigid transformations to establish its converse. They apply the Pythagorean theorem to solve problems in a variety of contexts by determining unknown side lengths in right triangles. Students repeatedly apply the Pythagorean theorem to determine unknown diagonal lengths in a rectangular prism. They calculate the distance a frog needs to hop between lily pads plotted on a coordinate system to apply the Pythagorean theorem.

| **Standard** | **Standard Language** | **Publisher/Developer Citations** | **Met****Yes** | **Met No** | **Reviewer Notes** |
| --- | --- | --- | --- | --- | --- |
| 8.G.6 | Explain a proof of the Pythagorean Theorem and its converse. | **Student Edition*** 8.07 ([Activities 1–2, Screens 4–7](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da64a5?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/f6a649b9-f201-44c2-94ff-a6482b118007))
* 8.07 ([entire Summary section, Screen 14](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da64a5?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/3a34d220-1729-40e0-b61b-9ac7460959f1))
* 8.06 ([Activity 1, Problems 2–3, page 812](https://learning.amplify.com/m/5e85ae0c00011ee0/original/ADM-G8-U8-06-SE-lesson-answer-key-CA.pdf#page=2))
* 8.09 ([Activity 1, Screens 2–7](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da6f32?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/a44742ce-062f-4e88-a6d6-07f870f9e170))
* 8.09 ([entire Summary section, Screen 15](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da6f32?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/7abe053c-f083-4d56-b7f1-701f4fba1e3a))
* 8.06 ([Synthesis, page 814](https://learning.amplify.com/m/788f4aacc6f33627/original/ADM-G8-U8-06-SE-practice-answer-key-CA.pdf))

**Teacher Edition*** 8.07 ([Activity 2, entire Connect section, including Key Takeaway, page 819](https://learning.amplify.com/m/9ec549bdcbd8667/original/ADM-G8-U8-07-TE-CA.pdf#page=5))
* 8.09 ([Activity 1, Connect, Key Takeaway, page 834](https://learning.amplify.com/m/a031cdfb4f83ac2/original/ADM-G8-U8-09-TE-CA.pdf#page=5))
 |  |  |  |
| 8.G.7 | Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. | **Student Edition*** 8.08 ([Activity 2, Screens 4–6](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da6806?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/a97a05af-ee73-4507-819b-e5683664e1e8))
* 8.08 ([Activity 3, Screens 8–9](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da6806?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/9a627c1f-7644-4e0b-a803-b4755586a824))
* 8.08 ([Synthesis, Screen 10](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da6806?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/878db629-a962-46ec-9331-355f8eb91da8))
* 8.10 ([Warm-Up, Screen 1](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da7270?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/754db5a0-683e-46f2-a56d-de19f5cc2a51))
* 8.10 ([Activity 2, Screen 5](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da7270?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/32f5ef3c-d522-461f-9384-53b09d9aeac3))

**Teacher Edition*** 8.08 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 829](https://learning.amplify.com/m/dec38c9acd4fd93/original/ADM-G8-U8-08-TE-CA.pdf#page=8))
* 8.08 ([Activity 3, Connect, Key Takeaway, page 828](https://learning.amplify.com/m/dec38c9acd4fd93/original/ADM-G8-U8-08-TE-CA.pdf#page=7))
* 8.10 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 844](https://learning.amplify.com/m/589a5d8fc13e075f/original/ADM-G8-U8-10-TE-CA.pdf#page=7))
 |  |  |  |
| 8.G.8 | Apply the Pythagorean Theorem to find the distance between two points in a coordinate system. | **Student Edition*** 8.11 ([Activity 1, Screens 2–4](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da79f5?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/bc531751-940e-4af6-9e58-90a87f6937b4))
* 8.11 ([Synthesis, Screen 7](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da79f5?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/d1d55b83-b882-479c-bb26-11f67678de7d))
* 8.11 ([entire Summary section, Screen 10](https://teacher.desmos.com/activitybuilder/custom/68078c8b907aef8d98da79f5?collections=68078c75907aef8d98d40f0a%2C68078c8a907aef8d98da428a#preview/72ee3c83-41d1-440d-b027-85e2f64f12c6))

**Teacher Edition*** 8.11 ([Activity 1, Connect, Key Takeaway, page 849](https://learning.amplify.com/m/285b4bf2ed5dbb1f/original/ADM-G8-U8-11-TE-CA.pdf#page=5))
 |  |  |  |

#####

##### Cluster: Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

How does the program address this aspect of the domain?

Amplify Desmos Math California addresses this aspect of the domain in **Unit 5**. Students connect the formula *V* = *Bh* for the volume of a prism to determine the volume of a cylinder, and use repeated stacked cylinders to develop the formula for the volume of a cone. They use relationships between cylinders, cones, and hemispheres to develop the formula for the volume of a sphere. Students use these formulas to solve problems, such as comparing different shapes of containers of popcorn.

| **Standard** | **Standard Language** | **Publisher/Developer Citations** | **Met****Yes** | **Met No** | **Reviewer Notes** |
| --- | --- | --- | --- | --- | --- |
| 8.G.9 | Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. | *Know the formulas for the volumes of cones and use them to solve real-world and mathematical problems.***Student Edition*** 5.13 ([Activities 1–2, Screens 6–7 and click on the Sample Responses tabs](https://teacher.desmos.com/activitybuilder/custom/68078c85907aef8d98d8af85?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/0f775310-8504-4d37-878f-6a15e496e77e))
* 5.14 ([Activity 3, Problem 6, page 541](https://learning.amplify.com/m/a6a6c264115a41c/original/ADM-G8-U5-14-SE-lesson-answer-key-CA.pdf#page=4))

**Teacher Edition*** 5.13 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 535](https://learning.amplify.com/m/5a0c492db7ab0a95/original/ADM-G8-U5-13-TE-CA.pdf#page=7))

*Know the formulas for the volumes of cylinders and use them to solve real-world and mathematical problems.***Student Edition*** 5.11 ([Activities 1–2, Screens 7–10 and click on the Sample Responses tabs](https://teacher.desmos.com/activitybuilder/custom/68078c84907aef8d98d8a5a7?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/79532b86-1d0d-4417-9885-6a1bbf5f03b6))
* 5.14 ([Activity 3, Problem 6, page 541](https://learning.amplify.com/m/a6a6c264115a41c/original/ADM-G8-U5-14-SE-lesson-answer-key-CA.pdf#page=4))

**Teacher Edition*** 5.11 ([entire Synthesis section, including Lesson Takeaway and Image of Synthesis and Summary Student Edition, page 521](https://learning.amplify.com/m/223c1f7ddbe80ee7/original/ADM-G8-U5-11-TE-CA.pdf#page=8))

*Know the formulas for the volumes of spheres and use them to solve real-world and mathematical problems.***Student Edition*** 5.15 ([Activity 2, Screens 5–6 and click on the Sample Responses tabs](https://teacher.desmos.com/activitybuilder/custom/68078c85907aef8d98d8b9e0?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/0c68d268-984f-43a6-b1e1-5ceedc0b47e6))
* 5.15 ([Activity 3, Screens 9–10 and click on the Sample Responses tabs](https://teacher.desmos.com/activitybuilder/custom/68078c85907aef8d98d8b9e0?collections=68078c75907aef8d98d40f0a%2C68078c84907aef8d98d86805#preview/2b17ba83-226f-4b43-841a-a52855e053fc))

**Teacher Edition*** 5.15 ([Synthesis, Lesson Takeaway, page 550](https://learning.amplify.com/m/c1448420475aa7b/original/ADM-G8-U5-15-TE-CA.pdf#page=8))

**Intervention, Extension, and Investigation Resources*** Investigation 1 ([Packing Spheres, student pages 276–277](https://learning.amplify.com/m/201fa42c82027273/original/ADM-8-Investigations-student-CA.pdf#page=3))
 |  |  |  |

###

### Domain: Statistics and Probability

##### Cluster: Investigate patterns of association in bivariate data.

How does the program address this aspect of the domain?

Amplify Desmos Math California addresses this aspect of the domain in **Unit 6**. Students explore real-world bivariate data and construct and interpret scatter plots to represent the data. They determine possible associations (positive, negative, linear, nonlinear) and identify any clusters or outliers. Using contexts such as toy cats, bike prices, dog weights and heights, fuel economy, and the weights of animal brains, students draw lines to fit data represented in scatter plots and informally evaluate how well a line fits the data. Students use equations of linear models to make predictions and solve problems about bivariate data. They interpret the slope and vertical intercept within context. Students explore the tastiness of different kinds of fruit to connect scatter plots to two-way tables as a way to represent bivariate categorical data. They analyze patterns in frequencies and relative frequencies to determine and describe possible associations.

| **Standard** | **Cluster/Standard Language** | **Publisher/Developer Citations** | **Met Yes** | **Met No** | **Reviewer Notes** |
| --- | --- | --- | --- | --- | --- |
| 8.SP.1 | Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. | *Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities.***Student Edition*** 6.02 ([Activity 1, Screens 5–6 and click on the Sample Responses tabs](https://teacher.desmos.com/activitybuilder/custom/68078c86907aef8d98d91f54?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/c135b2fd-62e7-4fd0-8aab-0c3cec4db6ad))
* 6.09 ([Activity 1, Screens 3 and 5 and click on the Sample Responses tab](https://teacher.desmos.com/activitybuilder/custom/68078c87907aef8d98d942cd?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/ca164b42-a165-4712-b93e-863224803d89))

**Teacher Edition*** 6.02 ([Activity 1, Monitor, Differentiation table, row that begins with “Notice that”, page 573](https://learning.amplify.com/m/6b9bfd75c8202943/original/ADM-G8-U6-02-TE-CA.pdf#page=5))

**Intervention, Extension, and Investigation Resources*** Investigation 2 ([The Ozone Layer Over Time, student page 286](https://learning.amplify.com/m/201fa42c82027273/original/ADM-8-Investigations-student-CA.pdf#page=9), and [Data Set and Recording Sheet, page 290](https://learning.amplify.com/m/201fa42c82027273/original/ADM-8-Investigations-student-CA.pdf#page=13))

*Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.***Student Edition*** 6.08 (Activities 1–2, and Summary, [Screens 2](https://teacher.desmos.com/activitybuilder/custom/68078c87907aef8d98d93d05?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/ce2a3c1b-4bd7-4d04-b59c-47ceba10a9ca), [6](https://teacher.desmos.com/activitybuilder/custom/68078c87907aef8d98d93d05?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/6341002e-7337-4184-aa2d-d41c2834cf26), and [10](https://teacher.desmos.com/activitybuilder/custom/68078c87907aef8d98d93d05?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/8ad26f2a-013c-43a7-935b-6bdf628a86f4) and click on the Sample Responses tabs)
* 6.04 ([Activity 1, Screen 7](https://teacher.desmos.com/activitybuilder/custom/68078c86907aef8d98d92820?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/d4fb809f-0bdd-4819-8dc0-043e2cb6023f))
* 6.05 ([Warm-Up, Problem 1, page 592](https://learning.amplify.com/m/4707629543e67508/original/ADM-G8-U6-05-SE-lesson-answer-key-CA.pdf))
* 6.07 (Activities 1–2, and Summary, [Screens 5](https://teacher.desmos.com/activitybuilder/custom/68078c86907aef8d98d93a4b?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/a4aebbd3-3908-4d3b-887d-b44bb2432d55), [7](https://teacher.desmos.com/activitybuilder/custom/68078c86907aef8d98d93a4b?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/1630ace0-c296-4203-8538-de7e1ecf2054), and [14](https://teacher.desmos.com/activitybuilder/custom/68078c86907aef8d98d93a4b?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/4140ab7e-fe12-4957-a686-838a35d5550e) and click on the Sample Responses tab)

**Teacher Edition*** 6.04 ([Synthesis, Lesson Takeaway, page 589](https://learning.amplify.com/m/3109e5c4c1750df6/original/ADM-G8-U6-04-TE-CA.pdf#page=7))
* 6.07 ([Activity 1, entire Connect section, including Key Takeaway, page 608](https://learning.amplify.com/m/35473c1038088f1d/original/ADM-G8-U6-07-TE-CA.pdf#page=5))
* 6.08 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 617](https://learning.amplify.com/m/350cc68bb48ec668/original/ADM-G8-U6-08-TE-CA.pdf#page=6))
 |  |  |  |
| 8.SP.2 | Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line. | *Know that straight lines are widely used to model relationships between two quantitative variables.***Student Edition*** 6.04 ([Activity 2, Screen 8](https://teacher.desmos.com/activitybuilder/custom/68078c86907aef8d98d92820?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/0e278a70-fd67-4ce9-99c9-ba202c08bdf4))
* 6.04 ([Synthesis, Screen 13](https://teacher.desmos.com/activitybuilder/custom/68078c86907aef8d98d92820?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/75d2e0f4-9e2b-45e6-aa0e-8be56177e0f9))

*For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.***Student Edition*** 6.06 ([Activities 1–2, Screens 4–5](https://teacher.desmos.com/activitybuilder/custom/68078c86907aef8d98d933d7?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/37503672-d595-44be-8fcc-4b7c11e13ec5))
* 6.09 ([Activity 2, Screen 6](https://teacher.desmos.com/activitybuilder/custom/68078c87907aef8d98d942cd?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/6e90b85e-586c-4309-abb7-49be50004e68))

**Teacher Edition*** 6.06 ([entire Synthesis section, including Lesson Takeaway, page 603](https://learning.amplify.com/m/45d0b272d2100f4c/original/ADM-G8-U6-06-TE-CA.pdf#page=8))
 |  |  |  |
| 8.SP.3 | Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.  | **Student Edition*** 6.07 ([Activity 2, Screens 8–9](https://teacher.desmos.com/activitybuilder/custom/68078c86907aef8d98d93a4b?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/3672d968-42f7-4424-ae35-c58cd433b581))
* 6.09 ([Activity 2, Screen 7](https://teacher.desmos.com/activitybuilder/custom/68078c87907aef8d98d942cd?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/11686040-b357-4018-847b-8af948e17e21))
* 6.04 ([Activity 2, Screens 8 and 10](https://teacher.desmos.com/activitybuilder/custom/68078c86907aef8d98d92820?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/0e278a70-fd67-4ce9-99c9-ba202c08bdf4))

**Teacher Edition*** 6.07 ([Activity 2, entire Connect section, including Key Takeaway, page 610](https://learning.amplify.com/m/35473c1038088f1d/original/ADM-G8-U6-07-TE-CA.pdf#page=7))
* 6.09 ([Activity 2, Monitor, paragraphs that begin with “Listen for language” and “Encourage students to discuss”, page 622](https://learning.amplify.com/m/7d6aa66c3dfaaa4f/original/ADM-G8-U6-09-TE-CA.pdf#page=5))
 |  |  |  |
| 8.SP.4 | Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables.  | *Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects.* **Student Edition*** 6.10 ([Activity 1, Screen 4](https://teacher.desmos.com/activitybuilder/custom/68078c87907aef8d98d94edc?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/0ea4370e-24c4-4b3d-ac86-3fcd260f0cb6))
* 6.10 ([Activity 2, Screens 7–9](https://teacher.desmos.com/activitybuilder/custom/68078c87907aef8d98d94edc?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/1d65a390-d15f-4ef6-bd12-bfb210059f17))
* 6.11 ([Activity 1, Screen 3](https://teacher.desmos.com/activitybuilder/custom/68078c87907aef8d98d95146?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/844aef23-dc95-4eb4-acc8-a0332f5d4563))

**Teacher Edition*** 6.10 ([Activity 1, Connect, Key Takeaway, page 634](https://learning.amplify.com/m/321ee17836a41be3/original/ADM-G8-U6-10-TE-CA.pdf#page=4))
* 6.10 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 636](https://learning.amplify.com/m/321ee17836a41be3/original/ADM-G8-U6-10-TE-CA.pdf#page=6))

*Understand that patterns of association can also be seen in bivariate categorical data by displaying relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables.***Student Edition*** 6.11 ([Activity 1, Screens 4–5](https://teacher.desmos.com/activitybuilder/custom/68078c87907aef8d98d95146?collections=68078c75907aef8d98d40f0a%2C68078c86907aef8d98d915ae#preview/3cee7f46-9f9e-4662-8fe8-0b4cb223f0b0))
* 6.11 ([Practice, Screens 2–3, Problems 3–4](https://teacher.desmos.com/activitybuilder/custom/68078c87907aef8d98d9854e?collections=68078c86907aef8d98d915ae%2C68078c87907aef8d98d966cc#preview/12044a18-2de4-4a48-8d28-76cf51b50e56))

**Teacher Edition*** 6.11 ([Activity 1, Connect, Key Takeaway, page 640](https://learning.amplify.com/m/3931bc1f5c4bd3fe/original/ADM-G8-U6-11-TE-CA.pdf#page=4))
* 6.11 ([Synthesis, Lesson Takeaway and Image of Summary Student Edition, page 643](https://learning.amplify.com/m/3931bc1f5c4bd3fe/original/ADM-G8-U6-11-TE-CA.pdf#page=7))
 |  |  |  |

**Appendix:** (*Publisher/Developer, please enter any additional notes regarding the standards below.)*

California Department of Education, November 2023

1. The California Common Core State Standards: Mathematics were adopted by the State Board of Education on August 2, 2010, (and modified pursuant to Senate Bill 1200 on January 16, 2013). This standards map is organized by Big Idea and Content Connections in alignment with the *Mathematics Framework for California Public Schools: Kindergarten Through Grade Twelve*, approved by the State Board of Education on July 12, 2023. [↑](#footnote-ref-0)
2. Function notation is not required in grade 8. [↑](#footnote-ref-1)