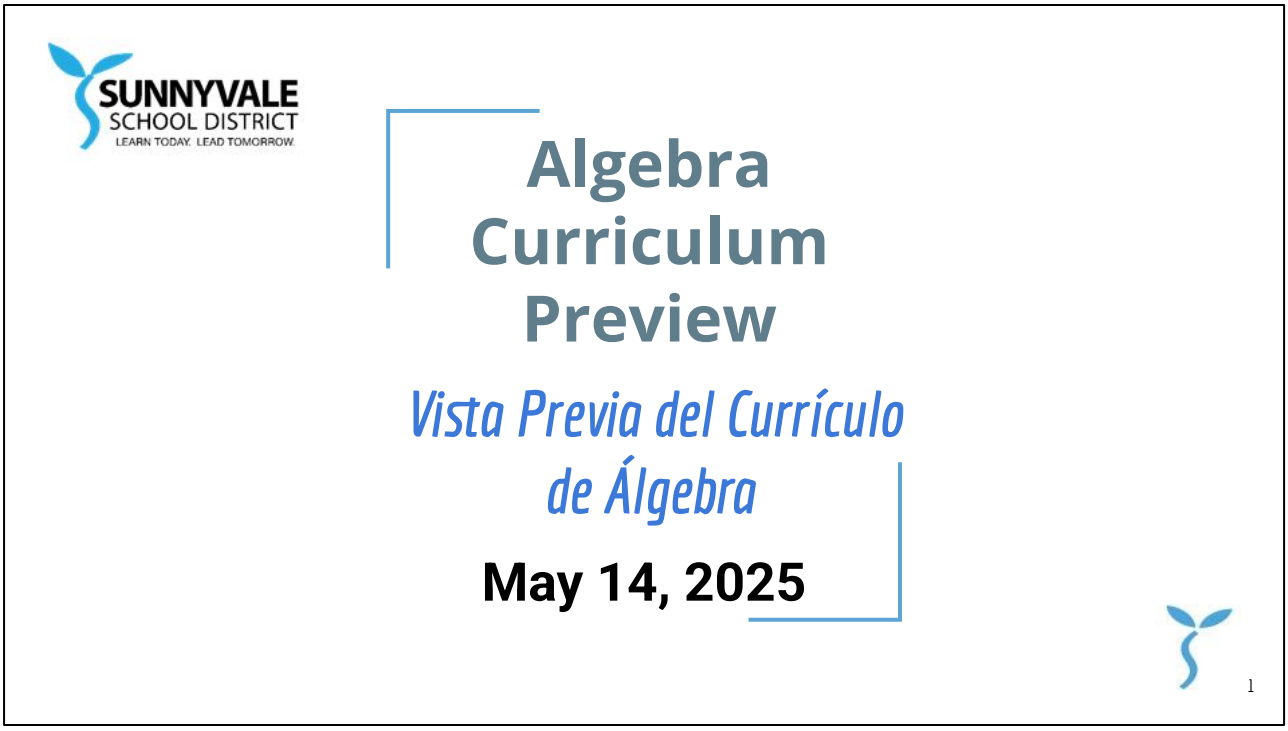
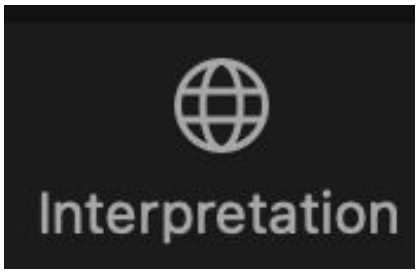


1. Welcome to our Algebra Curriculum Preview Night.

Spanish Translation

Para acceder a la traducción al español, haga clic en



1. We have Spanish translation for this evening's session.
2. When I enable the translation, you'll see a World button.
3. Please click on this and choose Spanish so that you can hear the presentation in Spanish simultaneously.

Welcome & Introductions

Bienvenida y Presentaciones

1. To begin this evening, we'll go over some introductions of who is presenting tonight and our agenda topics for this evening.

Tonight's Presenters

Los presentadores de esta noche

Jane Chen

Sunnyvale School District
Program Manager
Curriculum, Instruction, & Assessment

Catalina Morera Valbuena

Santa Clara County Office of Education
Spanish Interpreter

Tonight's Agenda

1. Welcome & Introductions
   - To set the context for tonight's meeting.
2. Shifts in Math Education
   - To understand the shifts in math education from CA Math Framework.
3. SESD's New Math Pathways
   - To understand where Algebra lies in the new math pathways.
4. Navigating the Curriculum Teacher Guide
   - To understand how to navigate the teacher guide.
5. Questions & Answers
   - To answer questions caregivers have about the curriculum.

Cronograma de esta noche

1. Bienvenida y presentaciones
   - Establecer el contexto para la reunión de esta noche.
2. Evolución en la Educación Matemática
   - Para comprender los cambios en la educación matemática a partir del Marco de Matemáticas de California.
3. Los Nuevos Itinerarios de Matemáticas de SESD
   - Para comprender dónde se ubica Álgebra en los nuevos itinerarios de matemáticas.
4. Guiando la Guía del Maestro del Currículo
   - Para comprender cómo navegar la guía del maestro.
5. Preguntas y respuestas
   - Responder las preguntas que los padres/tutores hacen.

5

1. Tonight, we'll be talking about :
   a. The Shifts in Math Education based on what the new CA Math Framework has set for us.
   b. We'll briefly go over our district's new Math Pathways so that you understand where Algebra lies in this pathway and what is taught in Algebra.
   c. I'll then briefly go over the philosophy of the CPM, the curriculum structure and how to navigate the Teacher Guide,
   d. We'll then end with some time for Questions and Answers.

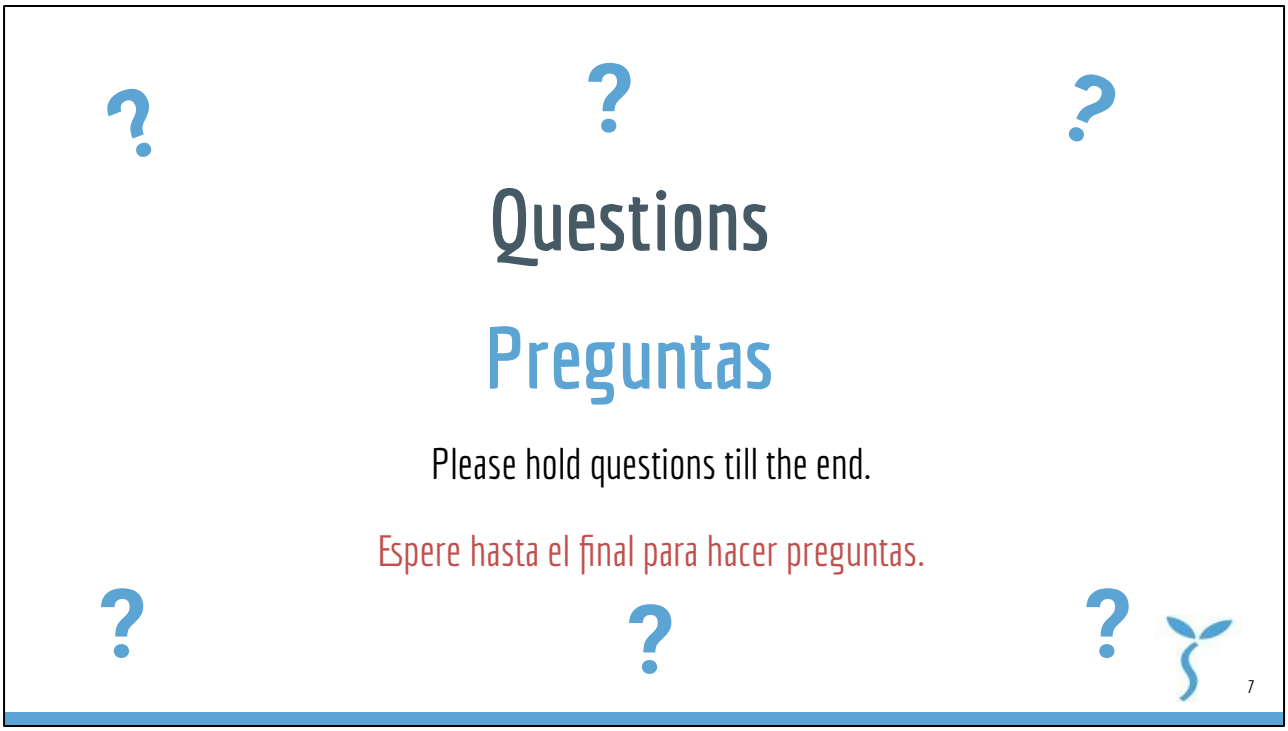
Tonight's presentation will be located on Sunnyvale School District's website at

La presentación de esta noche se publicará en el sitio web del Distrito Escolar de Sunnyvale en

www.sesd.org/Page/5872

Scroll past the Math Pathways document.

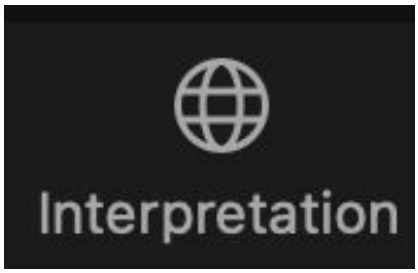
Desplácese más allá del documento de Itinerarios de Matemáticas



1. For time and efficiency's sake, I ask that you hold youre questions until the end.
2. This is because I may answer your questions throughout the presentation.
3. If you are worried you may forget the question, you may write it in the Q&A. However, I will not be answering questions until the end of the presentation.

Spanish Translation

Para acceder a la traducción al español, haga clic en



1. Again, we have Spanish translation for this evening's session.
2. Please click on this and choose Spanish so that you can hear the presentation in Spanish simultaneously.

Why Update the Algebra Curriculum?

¿Por qué actualizar el currículo de Álgebra?

1. To begin, I always like to start with the Why. In this case, Why are we updating the Algebra curriculum?
2. The reasons we are updating the Algebra curriculum is because we want to be aligned with Sunnyvale School District's new Strategic Plan.

1. Follow District Promise

Cumpla la Promesa del Distrito

- Every student is known by **name**, **strength,** and **need**, ready to excel in high school and beyond, and to lead a **life of joy** and **purpose**.
- A cada estudiante se le conoce por **su nombre**, **sus fortalezas** y **sus necesidades**, listo para sobresalir en la escuela preparatoria y más allá y llevar una **vida con alegría** y **propósito**.

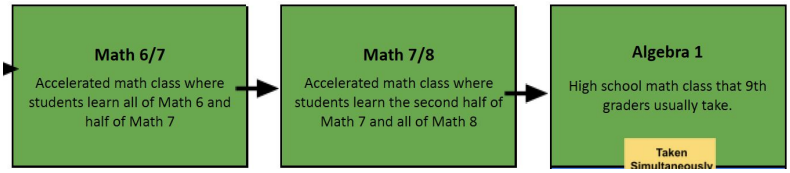
SUNNYVALE SCHOOL DISTRICT
LEARN TODAY. LEAD TOMORROW.

10

1. In the Strategic Plan, we have a promise to all of our students.
2. This promise states that "*Every student is known by **name**, **strength**, and **need**, ready to excel in high school and beyond, and to lead a life **of joy** and **purpose**.*"
3. A key part of this promise is to help students excel in high school and beyond and lead a life of joy and purpose.
4. When students understand mathematics deeply and see its relevance, it can lead to greater confidence and a sense of agency in their learning.
5. An updated Algebra 1 curriculum, by promoting understanding over memorization, can contribute to a more positive and joyful learning experience.

2. Increase participation and success in Algebra for all students, particularly those from underserved populations.

Aumentar la participación y el éxito en Álgebra para todos los estudiantes, particularmente aquellos de poblaciones desatendidas.



1. The second reason why we are updating our Algebra 1 curriculum is because we believe that every student with the potential should have the opportunity to excel in mathematics.
2. We're committed to increasing participation and success in Algebra for ***all*** students, particularly those from historically underserved populations.
3. Our proposed Algebra curriculum will be a tool to help our teachers be able to better understand individual student needs through varied instructional approaches, differentiated tasks, and opportunities for students to demonstrate their understanding in multiple ways.

Shifts in Math Education

Transformaciones en la Educación Matemática

1. Before we dive into the proposed Algebra curriculum, College Preparatory Mathematics (CPM), I want to first provide some background information about the changes in math education with the adoption of Common Core Math and the new CA Mathematics Framework.
2. This is important for all of us to know because ***all*** math courses now expect more from students than before.
3. The new California Math Framework is all about making math more meaningful, engaging, and equitable for all our students.
4. It shifts the focus from just memorizing rules to understanding the big ideas in math and how they connect to the real world.
5. We want our students to not only be able to solve problems but also to think like mathematicians, to explore, reason, and truly understand the "why" behind the math they're learning.
6. Ultimately, these shifts in math education aim to equip all students with the strong mathematical foundation they need for future success in whatever they choose to pursue.

The Shifts

1. Equity and Engagement
2. Connecting the Why, How, & What
3. Balanced Approach to Learning
4. Focus on Inquiry and Exploration
5. Emphasis on Big Ideas & Connections
6. Real-World Relevance & Applications

Los Cambios

1. Equidad y Participación
2. Conectando el Porqué, el Cómo y el Qué
3. Enfoque Equilibrado para el Aprendizaje
4. Énfasis en la Indagación y la Exploración
5. Énfasis en las Grandes Ideas y las Conexiones
6. Relevancia y Aplicaciones en el Mundo Real

1. The main shifts in math education that our newly adopted CA Mathematics Framework asks our teachers and curriculums to do are:
    a. Prioritize equitable access and engagement for all students.
    b. Connect the Why, How and What of Mathematics
    c. Incorporate a balance of conceptual understanding, procedural fluency, and application.
    d. Encourage students to explore mathematical ideas, ask questions, and develop their own understanding through investigations.
    e. Emphasize big ideas and connections between math concepts.
    f. Connect math to real-world contexts and applications.

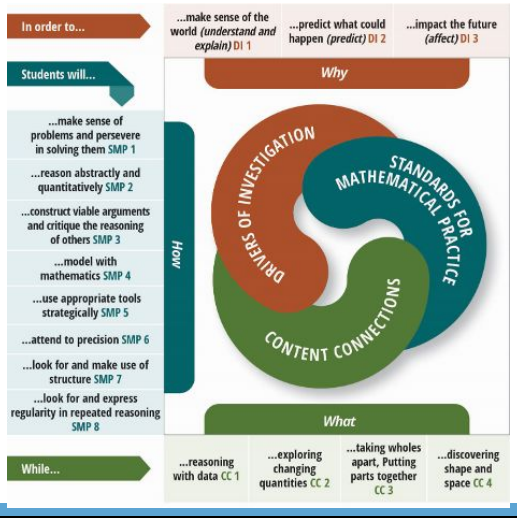
Equity and Engagement

Equidad y Participación

1. **Equity and engagement** is a central tenet of the new framework.
2. It emphasizes the importance of creating learning environments where all students, regardless of their background or prior experiences, have equitable access to high-quality mathematics instruction.
3. This involves recognizing and addressing potential biases, using culturally responsive teaching practices, and providing differentiated support to meet the diverse needs of learners.
4. Strategies might include providing multiple entry points to a problem, offering various ways for students to demonstrate their understanding, and fostering a classroom culture that values diverse perspectives.
5. CPM addresses equity and engagement through a problem-based learning approach, where students have to solve a real-world problem or scenarios in collaborative teams. Where each student builds upon their prior mathematical knowledge to explore different strategies, make conjectures, and develop their own understanding of the underlying mathematical principle, rather than passively receiving the information.

Connect the Why, How, and What

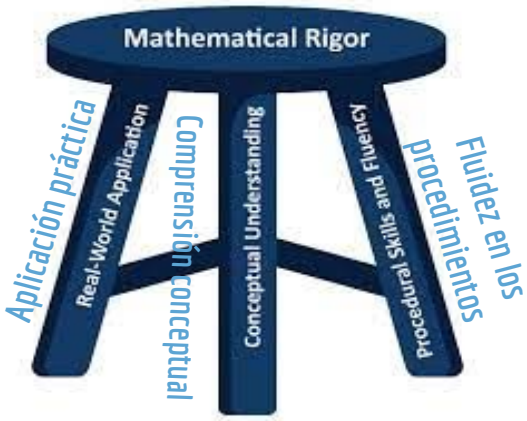
Conectando el Porqué, el Cómo y el Qué



1. The framework also stresses the **integration of the "Why, How, and What of Mathematics"** when learning math.
2. This diagram is meant to illustrate how the "Why we learn math" can propel the ideas and actions framed in "How we learn math" and "What we learn in math."
3. For example. To make sense of the world (the why- DI1), students engage in classroom discussions in which they construct viable arguments and critique the reasoning of others (the How- SMP3) while exploring changing quantities (the What).
4. The purpose is to leverage students' innate wonder about the world, in order to motivate productive inclinations (the SMPs) that foster deeper understandings of fundamental ideas (the CCs and the standards), and to develop the perspective that mathematics is a lively, flexible endeavor by which we can appreciate and understand much about the inner workings of the world.
5. CPM connects the why, how and what by students work in collaborative teams to investigate these problems, encouraging them to explore different strategies, make conjectures, and develop their own understanding of the underlying mathematical principles. This hands-on approach helps solidify the "big ideas" rather than just passively receiving information.

Balanced Approach to Learning

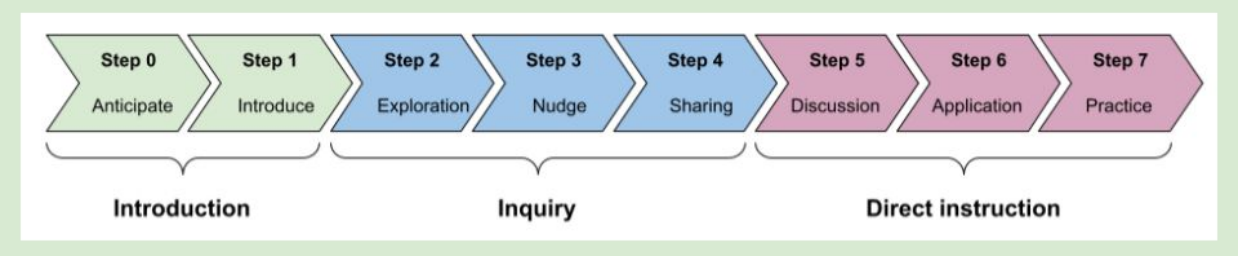
Enfoque Equilibrado para el Aprendizaje



1. The framework also promotes a **balanced approach to learning**, recognizing that conceptual understanding, procedural fluency, and the ability to apply mathematics are all important.
2. In Common Core Math, this means Mathematical Rigor.
3. Where procedural fluency should be built upon a strong foundation of conceptual understanding, rather than rote memorization.
4. Students should understand *why* a procedure works, not just *how* to execute it.
5. Application involves using mathematical knowledge and skills to solve problems in various contexts.
6. CPM's Core Connections Algebra 1 teaches to the math concepts by immersing students in problem-solving, encouraging them to explore concepts through multiple representations, explicitly connecting different areas of algebra, integrating the mathematical practices, and providing ongoing reinforcement.

Focus on Inquiry & Exploration

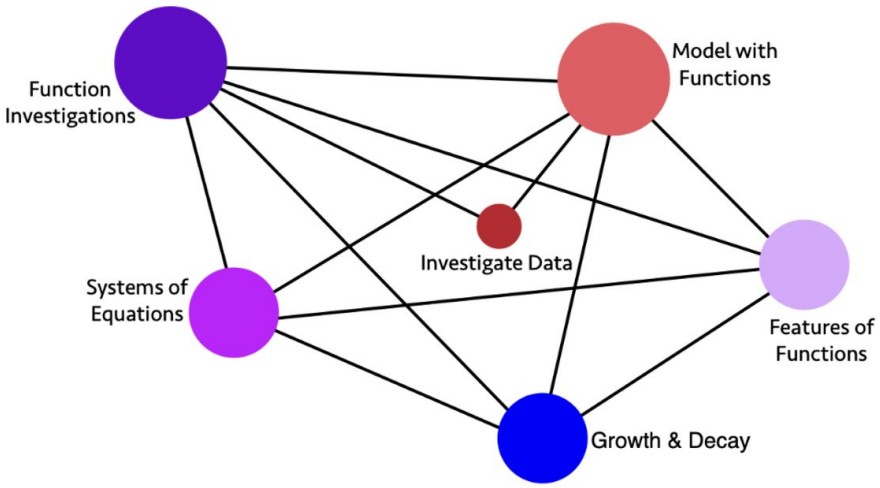
Énfasis en la Indagación y la Exploración



1. **Inquiry and exploration** are highlighted as crucial pedagogical approaches.
2. The framework encourages teachers to create opportunities for students to actively explore mathematical ideas, formulate their own questions, and develop their understanding through investigation and discovery.
3. This is manifests in CPM through their unit and lesson design.
    a. **The "Launch":** Each lesson typically begins with an engaging problem or scenario designed to pique student interest and introduce the core mathematical idea of the lesson in a context. This "launch" sets the stage for exploration.
    b. **The "Explore":** The majority of the lesson time is dedicated to students working collaboratively on the initial problem and related tasks. These activities are structured to guide students to discover mathematical concepts and develop problem-solving strategies. The teacher circulates, asking probing questions, observing student thinking, and offering hints or suggestions to push their understanding.
    c. **The "Closure":** Each lesson concludes with a "closure" activity where the teacher helps students synthesize the mathematical ideas they explored and formalize their understanding. This might involve a whole-class discussion, student presentations, or

a. the introduction of key vocabulary and concepts.
b. **Homework as Reinforcement and Extension:** Homework assignments provide mixed practice, revisiting concepts learned in the lesson and in previous topics. Some problems extend the ideas explored in class or introduce new related challenges.

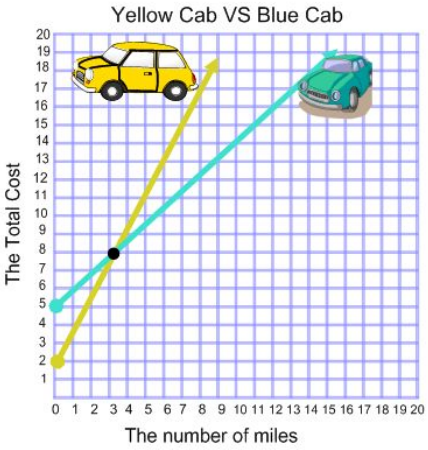
Big Ideas & Connections
Las Grandes Ideas y las Conexiones



1. At its core, the CA Math framework advocates for a move away from a purely procedural focus towards a deeper understanding of **big ideas** that connect various mathematical concepts.
2. Instead of teaching isolated skills and topics, educators are encouraged to highlight the interconnectedness of mathematics, allowing students to see the underlying structure and coherence.
3. This proposed Algebra 1 curriculum, CPM does this by weaving together different algebraic concepts rather than treating them as isolated units. For example, the course starts with Building Foundational Concepts (understanding patterns and relationships between quantities, functions, and different ways to represent them) in Chapter 1.
4. Then in chapters 2 - 6 they explore linear relationships in depth.
5. And finally in chapters 7 - 10, students expand their understanding of relationships to non-linear relationships, particularly functions (exponential and quadratic). In these chapters, students make connections between data sets and functions and polynomial expressions.

Real World Relevance & Application

Relevancia y Aplicaciones en el Mundo Real



1. Connecting mathematics to **real-world relevance and applications** is another key emphasis.
2. The framework argues that students are more likely to be engaged and motivated when they see how math is used in everyday life and in various careers.
3. This could involve using real-world scenarios in problem-solving tasks, exploring mathematical modeling, and discussing the role of mathematics in different fields.
4. For example, a lesson on systems of equations could involve analyzing real-world data like the cost of getting a ride from Lyft and Uber and which is a “better buy.”

Changes in Student's Role

Transformaciones en el Rol del Estudiante

A Shift From (Un cambio de)

- Passive recipient of knowledge (Aprendiz pasivo)
- Recall of facts (Recordar hechos)
- Learning in Isolation (Aprendizaje en aislamiento)

To (a)

- Active Participant in Learning (Aprendiz activo)
- Producer of Knowledge (Elaborador de conocimiento)
- Learning in collaboration (Aprendizaje conjunto)
- Flexible Thinker and Problem Solver (Pensador flexible y persona que resuelve problemas)

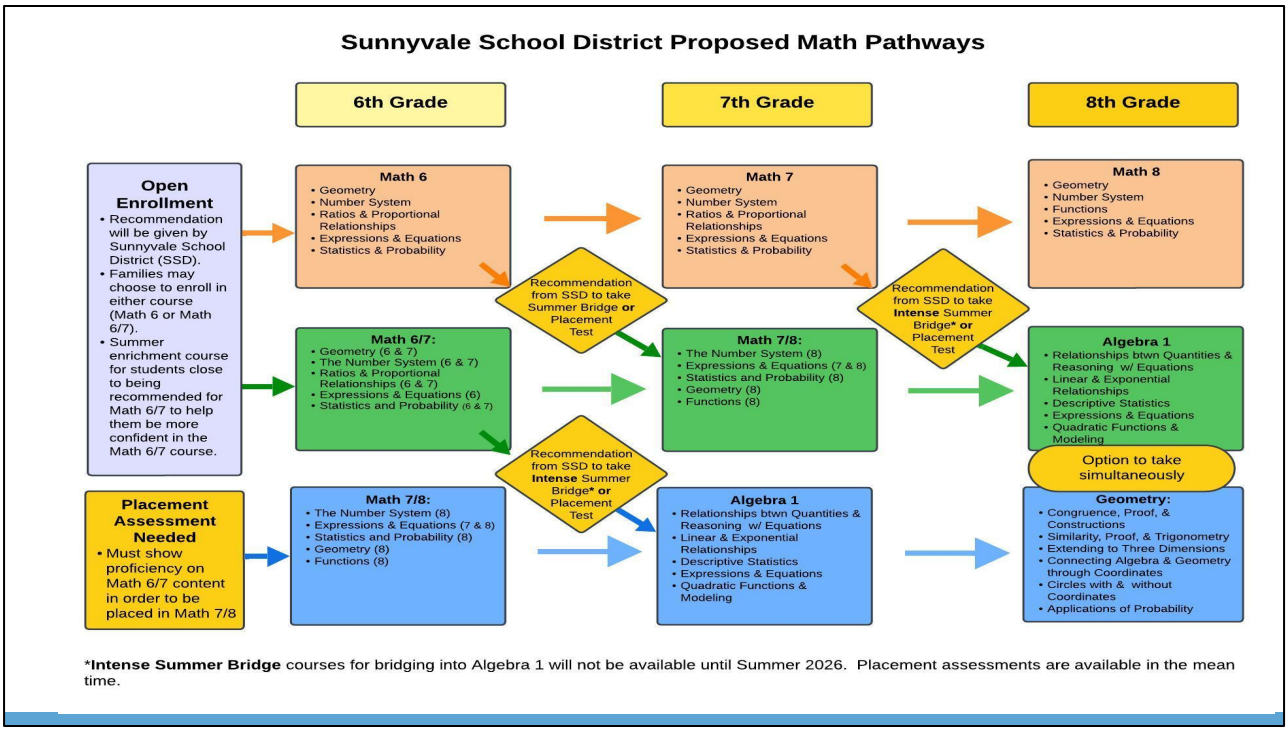
20

1. With these shifts in CA Math Framework, comes the shifts in our expectations of how students learn math.
2. In the past, students were often times seen as recipients of knowledge, expected to recall facts, and learn on their own, and learn concepts in isolation (no connection to other concepts).
3. Students were expected to sit and listen to the teacher. Thinking was not required.
4. Now, we want students to actively participate in the learning, be a producer of knowledge, learn with others, and be flexible thinkers and problem-solvers.
5. We want them to use their brain to think. Be able to apply what they know to new situations.

Overview of New Math Pathways

Presentación de las trayectorias de matemáticas

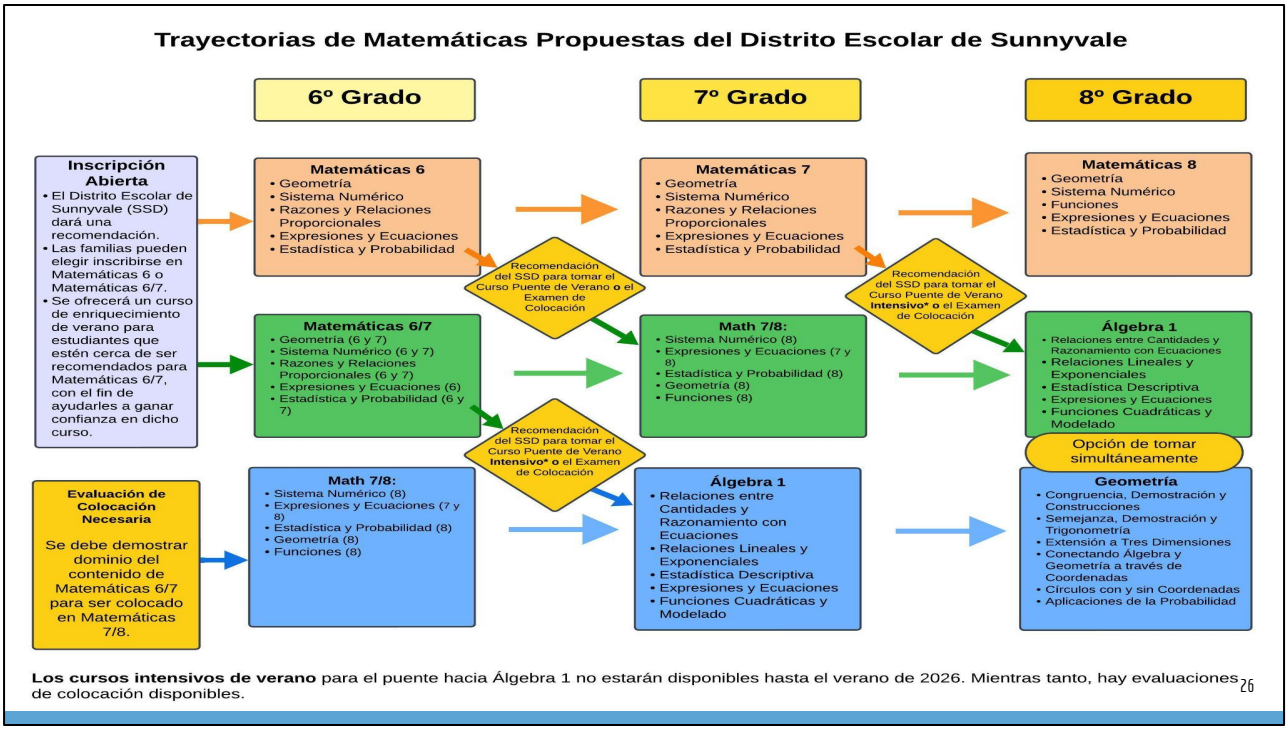
1. Now that we have a common understanding of the shifts in math education based on the new CA Math Framework, we can briefly go over our new Math Middle School Math Pathways and understand where Algebra 1 fits into the pathway.
2. In this new middle school math pathway, ***all*** math courses follow the instructional shifts stated previously.
3. All of the courses in our Middle School Math Pathways are either on grade level or above grade level.
4. All of our pathways lead to students meeting the A-G requirements to graduate high school and the requirements to apply for 4 year colleges.



1. You can look at this flowchart vertically by grade level or horizontally by pathway.
2. Today, I'll be looking at horizontally, by pathway.
3. The Orange Pathway is the recommended pathway for middle school students per the Common Core.
    a. In 6th grade a students starts in Math 6, then progresses to Math 7, and then end in 8th grade in Math 8.
    b. Note that the concepts taught in Math 8 are what used to be taught in pre Common Core Algebra 1.
4. The Green Pathway is the Accelerated Math pathway outlined in the CA Math Framework and Common Core Math.
    a. In this pathway, students start in Math 6/7 as a 6th grader. This course is accelerated because it teaches 1.5 courses in 1 year. It teaches all of Math 6 and 1/2 of Math 7.
    b. In Math 7/8, students learn the rest of Math 7 and all of Math 8. As noted before, the concepts taught in Math 8 are what used to be taught in Algebra 1 before we switched to Common Core Math.
    c. A student then takes Algebra 1 as an 8th grader. Current Algebra 1 delves deeper into linear equations and functions (introduced in Math 8) and introduces quadratics.
        i. The key difference between Common Core and

        i. pre-Common Core Algebra 1 lies in the depth of understanding required of students in these concepts to be able to explain why and the relationships of these concepts.
        ii. Previously, students primarily focused on manipulating expressions, solving simple linear equations and inequalities, graphing basic linear functions, and memorizing formulas and procedures.
    b. Note that the current Algebra 1 is a high school level math course so students have accelerated 1 year of the high school math course.
2. The Blue Pathway allows students to accelerate two years in middle school and end in Geometry in 8th grade, which according to the Common Core, should be a 10th grade math course.
    a. In this pathway, students start in Math 7/8 in 6th grade.
    b. They then progress to Algebra 1 in 7th grade
    c. And end in Geometry in 8th grade.
3. There are also some bridge options for students to take during the summer to bridge from one path to another path.
    a. The first bridge option happens the summer between 5th and 6th grade.
        i. In this bridge, we work with students who have been identified as being close to being recommended for Math 6/7 by strengthening their 5th grade math concepts and building their confidence in math.
    b. The second bridge option happens the summer between 6th and 7th grade.
        i. Here, students in Math 6 have the opportunity to bridge into Math 7/8 through either a 45 hour Summer Bridge course or Placement Assessment. In this course, students will learn the 7th grade math concepts taught in Math 6/7 so that they can take Math 7/8 in the fall and not miss any concepts.
        ii. During this summer, students in Math 6/7 have the opportunity to bridge into Algebra 1 through either a 150 hour Summer Bridge course or a Placement Assessment. The reason this is 150 hours is because students have to learn 1.25 years of content in a summer.
    c. The third bridge opportunity comes during the summer between 7th and 8th grade.
        i. Here students in Math 7 have the opportunity to bridge into Algebra 1 by either taking a 150 hour Summer Bridge course or a Placement Assessment. The reason this is

        i. 150 hours is because students have to learn all of Math 8 content in a summer.
    b. There is no bridge into Geometry because Algebra 1 is a foundational math course and we can't justify teaching it in a summer and truly have students set up for success in all other math courses if we had students learn it that quickly.
2. If students really do want to take Geometry in 8th grade and have not taken Algebra 1, they do still have the option to take it simultaneously with Algebra but we don't recommend that.
3. As you can see, the Algebra 1 course can be taken either in 7th grade or 8th grade after students have learned the concepts taught in Math 8.



1. You can look at this flowchart vertically by grade level or horizontally by pathway.
2. Today, I'll be looking at horizontally, by pathway.
3. The Orange Pathway is the recommended pathway for middle school students per the Common Core.
    a. In 6th grade a students starts in Math 6, then progresses to Math 7, and then end in 8th grade in Math 8.
    b. Note that the concepts taught in Math 8 are what used to be taught in pre Common Core Algebra 1.
4. The Green Pathway is the Accelerated Math pathway outlined in the CA Math Framework and Common Core Math.
    a. In this pathway, students start in Math 6/7 as a 6th grader. This course is accelerated because it teaches 1.5 courses in 1 year. It teaches all of Math 6 and 1/2 of Math 7.
    b. In Math 7/8, students learn the rest of Math 7 and all of Math 8. As noted before, the concepts taught in Math 8 are what used to be taught in Algebra 1 before we switched to Common Core Math.
    c. A student then takes Algebra 1 as an 8th grader. Current Algebra 1 delves deeper into linear equations and functions (introduced in Math 8) and introduces quadratics.
        i. The key difference between Common Core and

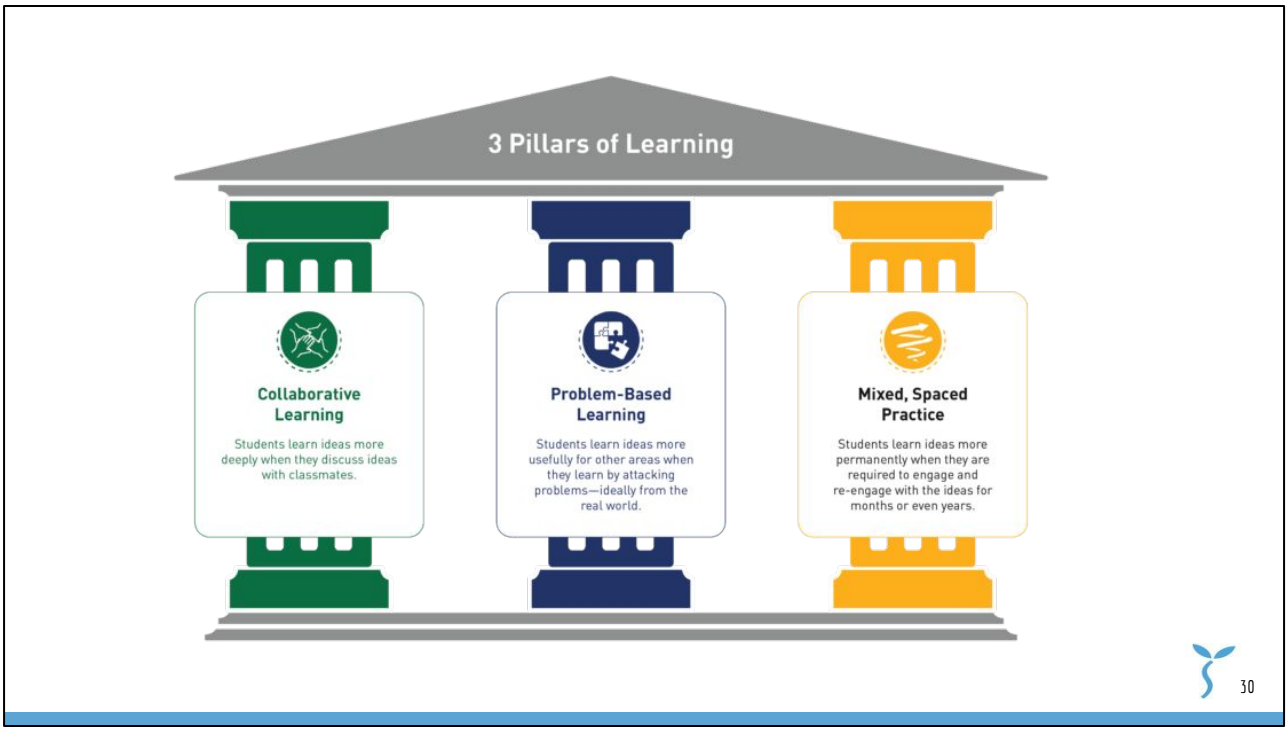
        i. pre-Common Core Algebra 1 lies in the depth of understanding required of students in these concepts to be able to explain why and the relationships of these concepts.
        ii. Previously, students primarily focused on manipulating expressions, solving simple linear equations and inequalities, graphing basic linear functions, and memorizing formulas and procedures.
    b. Note that the current Algebra 1 is a high school level math course so students have accelerated 1 year of the high school math course.
2. The Blue Pathway allows students to accelerate two years in middle school and end in Geometry in 8th grade, which according to the Common Core, should be a 10th grade math course.
    a. In this pathway, students start in Math 7/8 in 6th grade.
    b. They then progress to Algebra 1 in 7th grade
    c. And end in Geometry in 8th grade.
3. There are also some bridge options for students to take during the summer to bridge from one path to another path.
    a. The first bridge option happens the summer between 5th and 6th grade.
        i. In this bridge, we work with students who have been identified as being close to being recommended for Math 6/7 by strengthening their 5th grade math concepts and building their confidence in math.
    b. The second bridge option happens the summer between 6th and 7th grade.
        i. Here, students in Math 6 have the opportunity to bridge into Math 7/8 through either a 45 hour Summer Bridge course or Placement Assessment. In this course, students will learn the 7th grade math concepts taught in Math 6/7 so that they can take Math 7/8 in the fall and not miss any concepts.
        ii. During this summer, students in Math 6/7 have the opportunity to bridge into Algebra 1 through either a 150 hour Summer Bridge course or a Placement Assessment. The reason this is 150 hours is because students have to learn 1.25 years of content in a summer.
    c. The third bridge opportunity comes during the summer between 7th and 8th grade.
        i. Here students in Math 7 have the opportunity to bridge into Algebra 1 by either taking a 150 hour Summer Bridge course or a Placement Assessment. The reason this is

        i. 150 hours is because students have to learn all of Math 8 content in a summer.
    b. There is no bridge into Geometry because Algebra 1 is a foundational math course and we can't justify teaching it in a summer and truly have students set up for success in all other math courses if we had students learn it that quickly.
2. If students really do want to take Geometry in 8th grade and have not taken Algebra 1, they do still have the option to take it simultaneously with Algebra but we don't recommend that.
3. As you can see, the Algebra 1 course can be taken either in 7th grade or 8th grade after students have learned the concepts taught in Math 8.

Overview of College Preparatory Mathematics (CPM) curriculum

Descripción general del currículo de College Preparatory Mathematics (CPM)

1. Now let's briefly go over the philosophy of CPM and the basic structure of a lesson so that you have some understanding of the curriculum and why we are recommending it be adopted by our Board of Trustees for Algebra 1.



1. To begin, CPM has 3 main pillars/beliefs they build the curriculum on. They are:
    a. **Collaborative Learning**
        i. The belief is that students learn concepts more deeply when they discuss ideas with classmates.
        ii. In a lesson, the teacher structures and supports learning while guiding students toward the mathematical objectives of the lessons.
        iii. The classwork challenges *all* students so that they must problem-solve together. Each student has a defined role in the solution process. The assignment of specific team roles eliminates having one student solve the problems and then "tell" the other students how to complete them.
    b. **Problem-Based Learning**
        i. In a problem-based learning approach, we believe that all students have knowledge about math and that they are able to do math. Here, students construct knowledge by making connections to form big mathematical ideas.
        ii. CPM does this by:
            1. Using tasks that cannot be solved by a simple algorithm and that are often embedded in complex

1. real-world contexts.
2. Has students work collaboratively to construct knowledge through productive discourse practices.
3. And, the mathematical authority is shared with students. The teacher is not seen as the only one with math knowledge.

b. **Mixed, Spaced Practice**
   i. Students learn ideas more permanently when they are required to engage and re-engage with the ideas days, weeks, and months after they have learned it.

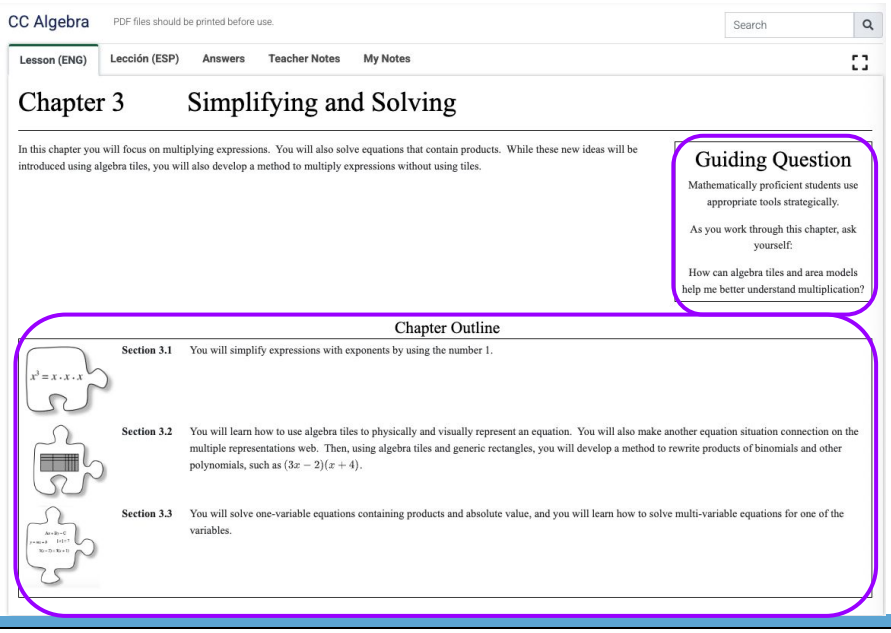
Curriculum Organization / Organización del Currículo

- Chapter 1- Functions
- Chapter 2- Linear Relationships
- Chapter 3- Simplifying and Solving
- Chapter 4- Systems of Equations
- Chapter 5- Sequences (arithmtic & geometric)
- Chapter 6- Modeling Two-Variable Data
- Chapter 7- Exponential Functions
- Chapter 8- Quadratic Functions
- Chapter 9- Solving Quadtratics and Inequalities
- Chapter 10- Solving Compled Equations
- Chapter 11- Functions and Data

- Capítulo 1- Funciones
- Capítulo 2- Relaciones lineales
- Capítulo 3- Simplificar y resolver
- Capítulo 4- Sistemas de ecuaciones
- Capítulo 5- Profresiones
- Capítulo 6- Modelos de datos con dos variables
- Capítulo 7- Funciones exponenciales
- Capítulo 8- Funciones cuadráticas
- Capítulo 9- Resolución de ecuaciones cuadráticas y desigualdades
- Capítulo 10- Resolución de ecuaciones complejas
- Capítulo 11- Funciones y datos

1. So now, let's briefly go over how the curriculum is organized.
2. First, the curriculum is divided into 11 chapters.
3. The chapters are:
    a. Chapter 1- Functions
    b. Chapter 2- Linear Relationships
    c. Chapter 3- Simplifying and Solving (Expressions & Equations)
    d. Chapter 4- Systems of Equations
    e. Chapter 5- Sequences (arithmtic & geometric)
    f. Chapter 6- Modeling Two-Variable Data
    g. Chapter 7- Exponential Functions
    h. Chapter 8- Quadratic Functions
    i. Chapter 9- Solving Quadtratics and Inequalities
    j. Chapter 10- Solving Compled Equations
    k. Chapter 11- Functions and Data

Chapter Organization / Organización del Capítulo


CC Algebra PDF files should be printed before use. Search

Lesson (ENG) Lección (ESP) Answers Teacher Notes My Notes

Chapter 3 Simplifying and Solving

In this chapter you will focus on multiplying expressions. You will also solve equations that contain products. While these new ideas will be introduced using algebra tiles, you will also develop a method to multiply expressions without using tiles.

Guiding Question

Mathematically proficient students use appropriate tools strategically.

As you work through this chapter, ask yourself:

How can algebra tiles and area models help me better understand multiplication?

Chapter Outline

Section 3.1 You will simplify expressions with exponents by using the number 1.

Section 3.2 You will learn how to use algebra tiles to physically and visually represent an equation. You will also make another equation situation connection on the multiple representations web. Then, using algebra tiles and generic rectangles, you will develop a method to rewrite products of binomials and other polynomials, such as $(3x-2)(x+4)$.

Section 3.3 You will solve one-variable equations containing products and absolute value, and you will learn how to solve multi-variable equations for one of the variables.

1. Each chapter is framed with Guiding Question designed to create interest in the lesson and to remind students to look for connections and to understand the meaning behind the mathematical concepts in the lesson.
2. Chapters are then divided into sections.
3. Each section contains several lessons that develop a mathematical topic and is designated by a section number and a puzzle piece icon.
4. The section numbers are sequential for each chapter and are designated by the chapter number followed by the section number.
    a. For example, Section 3.2 is the second section of Chapter 3. Lesson numbers use a *chapter.section.lesson* format. Thus Lesson 3.2.1 is the first lesson of the second section in Chapter 3.

Lesson Structure / Estructura de la Lección

2.3.2 What is the equation of the line?

Finding the Equation of a Line Through Two Points

In past lessons, you learned facts about m and b by graphing lines from equations. In today's lesson, you will reverse the process used in Lesson 2.1.4 so that you can find the equation of a line when you know its graph.

2-87. In this problem, you will find the equation of the line that goes through the points in the table below. Use the questions below to help you organize your work.

IN (x)	29	18	−8	14	−27
OUT (y)	97	64	−14	52	−71

a. What is the slope of the line?

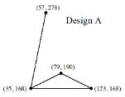
b. Does it matter which points you used to find the slope of your line? Find the slope with two other points to verify your answer.

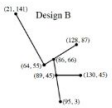
c. How can you use a point to find the equation? Find the equation of the line.

d. Once you have the slope, does it matter which point you use to find your equation? Why or why not?

e. How can you verify that your equation is correct?

2-88. The Line Factory needs a new logo for its pamphlet. After much work, the stylish logos below were proposed. The design department knows the coordinates of the special points in each logo. However, programmers need to have the equations of the lines to program their pamphlet-production software. Explore your ideas using the *Line Factory Logo Student eTool*.





a. Work in pairs today. Choose one logo for each pair in your team to work on. What are the equations of the four line segments that make up this logo?

b. What are the domain and range of each of the line segments in the logo?

c. Trade equations with the other pair of students in your team. Sketch each of their equations on graph paper. How did each sketch compare with the original logos? Discuss any equation modifications needed with your team.

2-89. In your Learning Log, describe the process you used to find the equation of a line through two points. Include an example. Title this entry "Finding the Equation of a Line Through Two Points" and include today's date.

Review & Preview

28

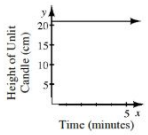
1. The basic structure of every lesson in the text includes the core mathematical content followed by a Review and Preview homework section.

Review & Preview / Repaso y Anticipo

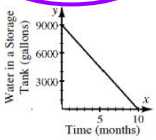
Review & Preview

2-90. Explain what the slope of each line below represents. Then find the slope and give its units. Homework Help

a.



b.



2-91. Find the equation of the line that goes through the points $(-15, 70)$ and $(5, 10)$. *2-91 HW eTool* Homework Help

2-92. This problem is the checkpoint for evaluating expressions and the Order of Operations. It will be referred to as Checkpoint 2

Evaluate each expression if $x = -2$, $y = -3$, and $z = 5$. Homework Help

a. $2x + 3y + z$

b. $x - y$

c. $2\left(\frac{x+y}{z}\right)$

d. $3x^2 - 2x + 1$

e. $3y(x + x^2 - y)$

f. $\frac{-x^2(1-2x)}{y-x}$

Check your answers by referring to the Checkpoint 2 materials located at the back of your book.

Ideally, at this point you are comfortable working with these types of problems and can solve them correctly. If you feel that you need more confidence when solving these types of problems, then review the Checkpoint 2 materials and try the practice problems provided. From this point on, you will be expected to do

1. The Review and Preview is where students practice math concepts they have learned in previous lessons
2. This is because research has shown that in order for students to solidify a concept they need to grapple with a for a few days before they are released to practice on their own.
3. So you'll see that many of the problems are from previous lessons and possibly previous chapters.
4. One of the features of the Review and Preview is the "Homework Help." This feature provides students with some hints to help them understand how to solve the problem.

Additional Elements in a Lesson

Elementos Adicionales en una Lección

1. Lessons may include some additional elements such as:

Discussion Points / Puntos de Discusión

2.2.1 What is the equation of the line?

Slope as Motion

Today you will start to look at slope as a measurement of rate. Today's activity ties together the equation of a line and motion. Look for ways to connect what you know about m and b as you create motion graphs to match equations.

2-46. SLOPE WALK

Congratulations! The president of the Line Factory has presented your class with a special challenge. She now wants a way to find the equation of a line generated when a customer walks in front of a motion detector. That way, a customer can simply "walk a line" to order it from the factory.

Your Task: Once a motion detector has been set up with the correct software, have a volunteer walk *away* from the motion detector at a *constant* rate. In other words, he or she should walk the same speed the entire time. Then, once a graph is generated, use the graphing technology provided by your teacher to find the equation of the line. Also find the equation of a line formed when a different volunteer walks *toward* the motion detector at a constant rate.

Discussion Points

What do you expect the first graph to look like? Why?

What will be different about the two graphs?

What would happen if the volunteer did not walk at a constant rate?

How does the volunteer's speed affect the graph?

1. Discussion Points
   a. These are questions that student teams should use to guide their discussions, investigations, and problem-solving processes.

Further Guidance / *Guía adicional*

Which representation (graph or table) will give more accurate results? Why?

Further Guidance

2-76. USING A GRAPH

Use the information in problem 2-75 to answer these questions.

a. What is the baby chick's rate of growth? That is, how fast does the baby chick grow each day? How does this rate relate to the equation of the line?

b. Before graphing, describe the line that represents the growth of the chick. Do you know any points on the line? Does the line point upward or downward? How steep is it?

c. Draw a graph for this situation. Let the horizontal axis represent the number of days since the chick hatched, and let the vertical axis represent the chick's weight. Label and scale your axes appropriately and title your graph "Growth of a Baby Chick."

d. What is the y-intercept of your graph? According to your graph, how much did Colleen's chick weigh the day it hatched?

e. When will the chick weigh 140 grams?

f. How is the minimum and the y-intercept related in this graph?

1. Further Guidance
   a. Some tasks are divided into two parts: the task statement and a Further Guidance section with additional support for students to follow.
   b. Some of the large investigations in this course will have this structure.
   c. This design allows the teacher either to have teams complete the problem using their own strategies and available tools, or to have students follow a more directed approach using the Further Guidance. The beginning and end of each Further Guidance section is clearly marked.

Stoplight Problems / Problema del Semáforo

2-71. Find the slope of the line passing through each pair of points below. Homework Help ✎

a. $(1, 2)$ and $(4, -1)$

b. $(7, 3)$ and $(5, 4)$

c. $(-6, 8)$ and $(-8, 5)$

d. $(55, 67)$ and $(50, 68)$

e. Azizah got 1 for the slope of the line through points $(1, 2)$ and $(4, -1)$. Explain to her the mistake she made and how to find the slope correctly.

33

1. Stoplight Problems
   a. Some problems are identified with the Stoplight icon.
   b. The Stoplight icon signifies that the problem contains an error, in reasoning or procedure, to be identified by the student.

No Calculator / Sin Calculadora

3-95. Evaluate the following rational expressions. Homework Help ✎

a. $-3\frac{2}{9} + 8\frac{7}{9}$

b. $-7\frac{2}{7} - 4\frac{1}{5}$

c. $1\frac{5}{7} \cdot 3\frac{6}{7}$

d. $-8\frac{1}{7} \div -5\frac{5}{9}$

1. Calculator or No Calculator Problems
   a. Some problems in this course are identified with a Calculator or a No Calculator icon.
   b. The Calculator icon signifies that the problem is intended to be done with a calculator.
   c. Similarly, the No Calculator icon signifies that the problem should be completed without a calculator.

Learning Log / Registro de Aprendizaje

1-65. LEARNING LOGS

Throughout this course, you will be asked to reflect about your understanding of mathematical concepts in a Learning Log. Writing about your understanding will help you consolidate ideas, develop new ways to describe mathematical ideas, and recognize gaps in your understanding. It is important to write each entry of the Learning Log in your own words so that later you can use your Learning Log as a resource to refresh your memory. Your teacher will tell you where to write your Learning Log entries. Remember to label each entry with a title and a date so that it can be referred to later.

In this Learning Log entry, describe what it means for a relationship to be a function. Think of a type of machine that you use on a regular basis and describe how it also operates as a function. Title this entry "Functions" and include today's date.

1. Learning Log Entries
   a. Students will be asked routinely to consolidate their mathematical understanding at the end of a lesson in a Learning Log.
   b. The Learning Log prompts offer students a chance to reflect on their learning from the current lesson and to describe their understanding in their own words.
   c. Often, these reflections will provide closure to a lesson or clarification of a concept.

Math Notes / Apuntes de Matemáticas

METHODS AND MEANINGS

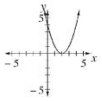
MATH NOTES

Functions

A relationship between inputs and outputs is a **function** if there is exactly one output for each input. We often write a function as $y =$ some expression involving x, where x is the input and y is the output. The following is an example of a function.

$$y = (x-2)^2$$

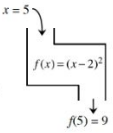
x	-2	-1	0	1	2	3	4	5
y	16	9	4	1	0	1	4	9



In the example above the value of y depends on x, so y is also called the **dependent variable** and x is called the **independent variable**.

Another way to write a function is with the notation "$f(x) =$" instead of "$y =$". The function named "f" has output $f(x)$. The input is x.

In the example at right, $f(5) = 9$. The input is 5 and the output is 9. You read this as, "f of 5 equals 9."

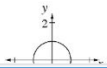


The set of all inputs for which there is an output is called the **domain**. The set of all possible outputs is called the **range**. In the example above, notice that you can input any x-value into the equation and get an output. The domain of this function is "all real numbers" because any number can be an input. But the outputs are all greater than or equal to zero. The range is $y \geq 0$.

$x^2 + y^2 = 1$ is not a function because there are two y-values (outputs) for some x-values, as shown below.

$$x^2 + y^2 = 1$$

x	-1	0	0	1



1. Math Notes
   a. The Math Notes consolidate core content ideas, provide definitions, explanations, examples, instructions about notation, formalizations of topics, and occasionally interesting extensions or applications of mathematical concepts.
   b. These boxes enable students to reference ideas that they missed or have forgotten.

Problem Numbering

Numeración de los Problemas

7-8. If two expressions are equivalent, they can form an equation that is considered to be **always true**. For example, since $3(x-5)$ is equivalent to $3x-15$, then the equation $3(x-5)=3x-15$ is always true, that is, true for any value of x.

If two expressions are equal only for certain values of the variable, they can form an equation that is considered to be **sometimes true**. For example, $x+2$ is equal to $3x-8$ only when $x=5$, so the equation $x+2=3x-8$ is said to be sometimes true.

If two expressions are not equal for any value of the variable, they can form an equation that is considered to be **never true**. For example, $x-5$ is not equal to $x+1$ for any value of x, so the equation $x-5=x+1$ is said to be never true.

Is the equation $(x+3)^2=x^2+9$ always, sometimes or never true? Justify your reasoning completely. Homework Help ✎

CL 6-126. Solve each equation for the indicated variable.

a. $2x+3y=6$ (for x) b. $FM-3=Q$ (for F) c. $\frac{r}{s}+a=2b$ (for r)

37

1. Problems within a lesson and homework are numbered by chapter and then by sequence within the chapter, with the two numbers separated by a hyphen (-).
2. For example, problem 7-8 is the eighth problem in Chapter 7.
3. Problems in the chapter closure sections are denoted similarly, but are preceded by the letters CL. Thus, CL 6-127 indicates the one hundred twenty-seventh problem in Chapter 6, which is in the closure section.

Navigating the Curriculum's Teacher Guide

Guiando la Guía del Maestro del Currículo

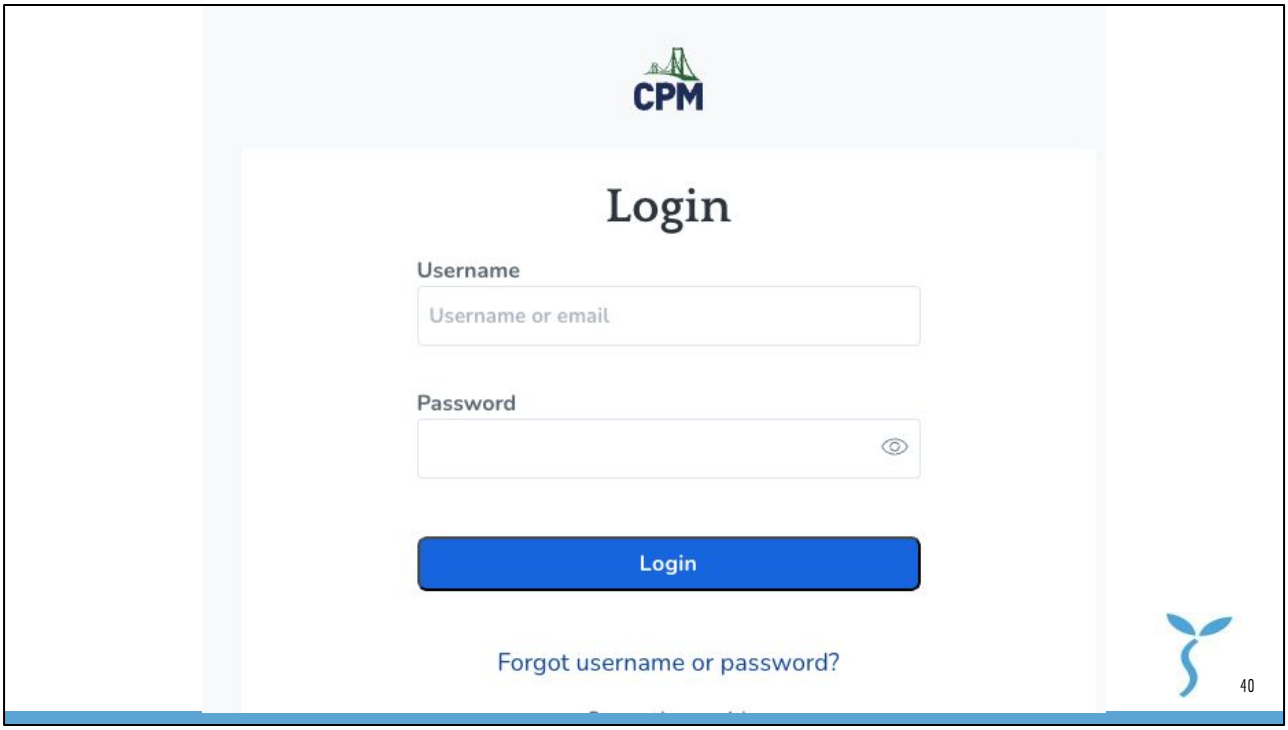
1. Now let me walk you through how to navigate the curriculum online.

Access to Curriculum / Acceso al Currículo

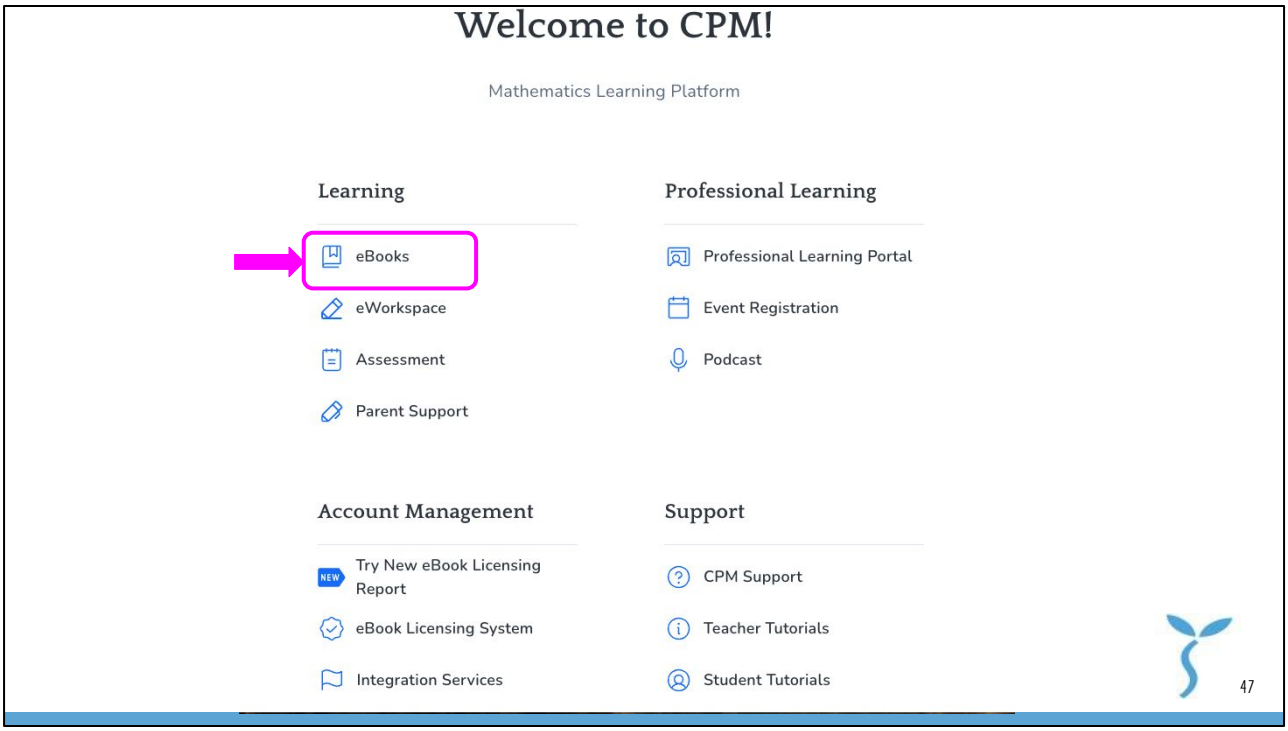
1. Email curriculumpreview@sesd.org.
2. In email include the following information:
   a. Caregiver's Name
   b. Student's Name
   c. Student's School
   d. Student's Grade level

1. Envíe un correo electrónico a curriculumpreview@sesd.org.
2. En el correo electrónico incluya la siguiente información:
   a. Nombre del Cuidador
   b. Nombre del Estudiante
   c. Escuela del Estudiante
   d. Nivel de Grado del Estudiante

1. If you haven't already emailed Curriculum Preview to receive login information so that you can explore the curriculum at your time and more thoroughly, please do so.
2. You need to make sure to include
   a. Your Name
   b. Your student's name
   c. Your student's school
   d. Your student's grade
3. Once you have done that, you'll get the username and password to log into the preview account.

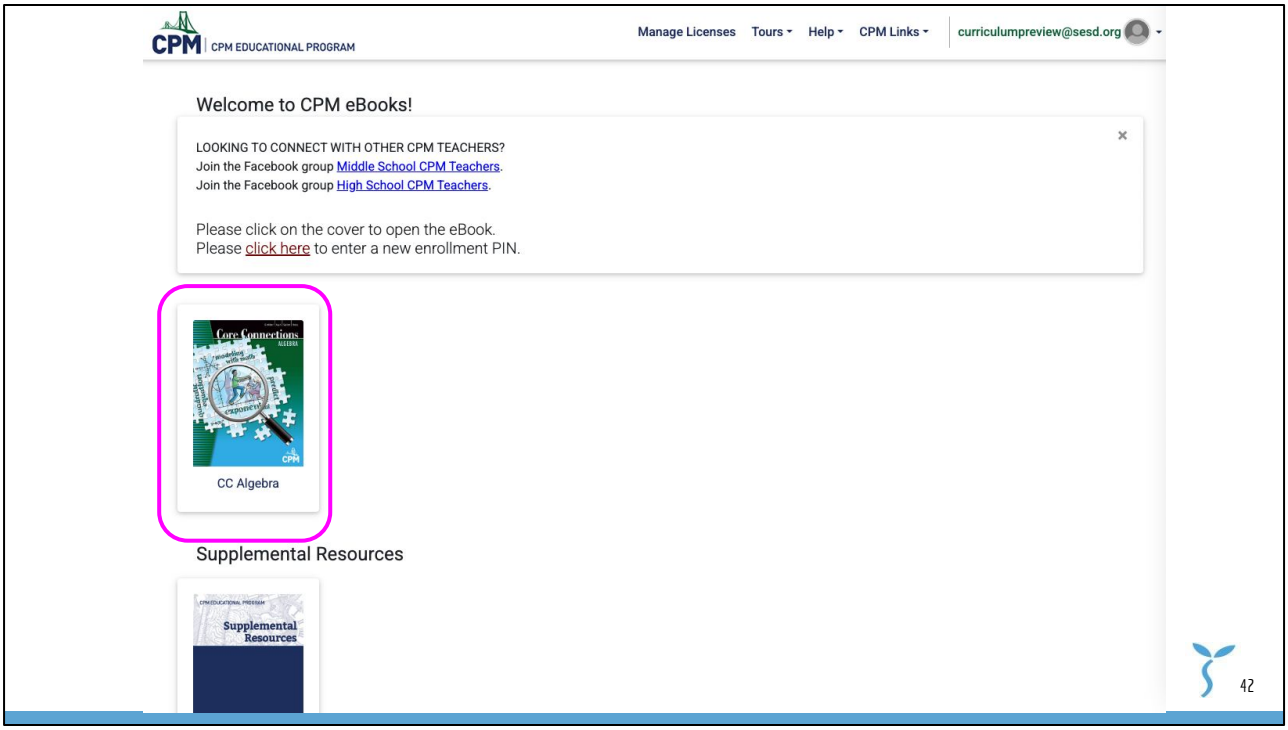


1. After you receive the login information, you'll be directed to this page.
2. Enter in the username and password

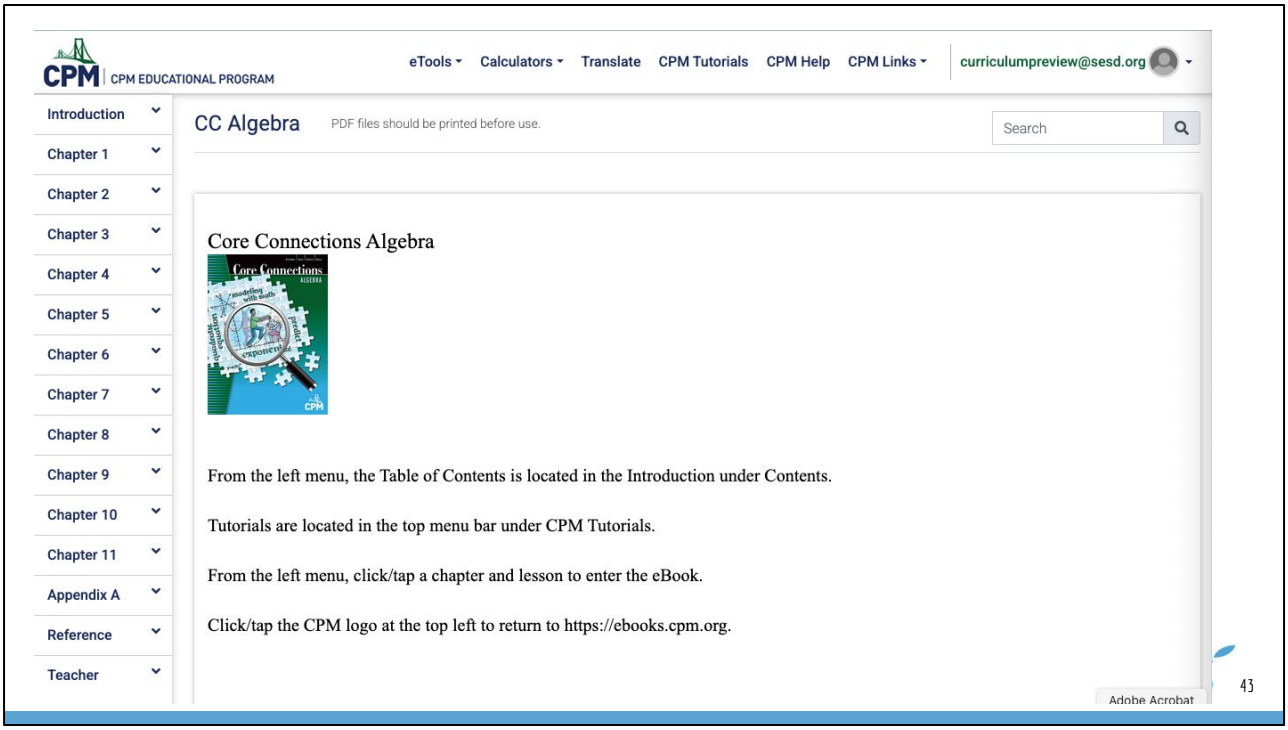


1. After you login, you will be directed to this page.
2. I'll briefly explain what each item is.
   a. **eBooks-** This is the electronic version of the textbook. We'll be diving deeper into this next.
   b. **eWorkspace-** This where a teacher can see the electronic assignments students did. Since this is a demo account, you won't see anything here b/c there are no students attached this account.
   c. **Assessment-** This is where the teacher goes to create an assessment for students to take from a bank of questions.
   d. **Parent Support-** This is where parent resources are located. I'll show you this briefly after we go over the eBook.
   e. **Account Management-** Everything in this section is for a teacher to assign eBooks to students and build their class roster for the eWorkspace. Again, you won't be able to see anything here b/c we don't have any students assigned to this account.
   f. **Professional Learning-** This is where teachers can sign up to attend different professional development opportunities. If you check out this section, please do not register for any sessions because that will take up space in the PD session and an actual teacher that is teaching CPM won't be able to attend because there may not be space.

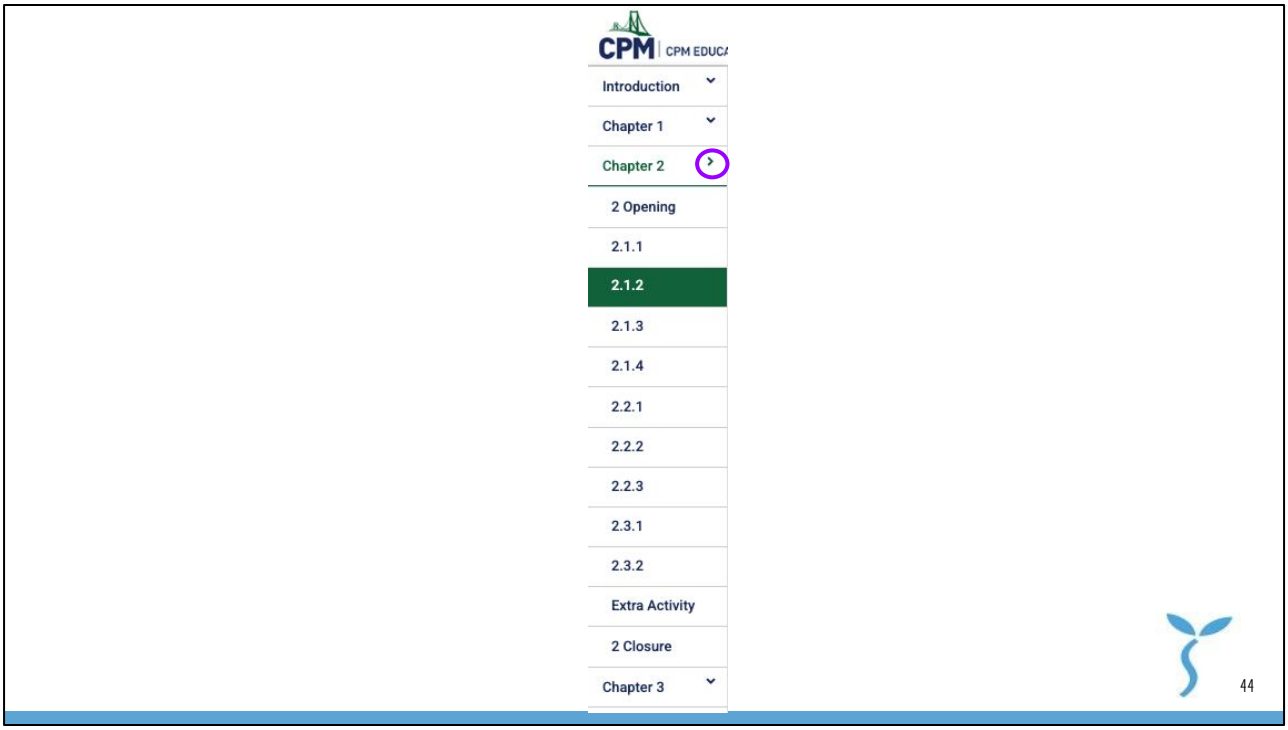
        i. You also won't be able to see anything because information is sent to the curriculumpreview email address.
    b. **Support-** This section provides different resources for the teacher and students.
2. For ur time tonight, we'll start with eBooks.



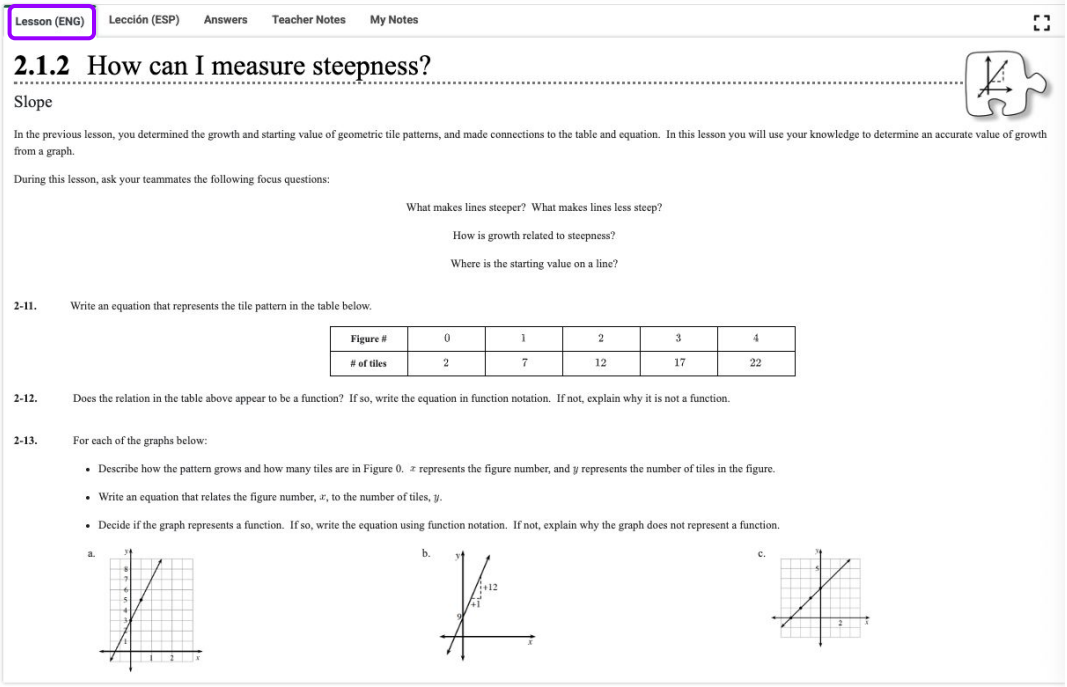
1. After you click on eBooks, you'll be taken to this page.
2. We'll be looking at the Core Connections Algebra book.
3. Click on this icon.



1. Once you've clicked on Core Connections Algebra, you'll be taken to this landing page.
2. From here, you can click on any chapter to look at each lesson.



1. If you click on the arrow, it will show you all the lessons in the chapter.
2. If you start with the “Opening” you’ll get an overview of the topics taught in this chapter.



1. Once you've clicked on a lesson, you'll automatically be taken to the "Lesson Tab"
2. This is what the students will see.

Lesson (ENG) | Lección (ESP) | Answers | Teacher Notes | My Notes

2.1.2 ¿Cómo se mide la inclinación?

Pendiente

En la lección anterior determinaste el crecimiento y el valor inicial de patrones geométricos de azulejos y estableciste conexiones con la tabla y la ecuación correspondientes. En esta lección, usarás lo que aprendiste para determinar un valor de crecimiento preciso basándote en un gráfico.

Durante esta lección, haz a tus compañeros de equipo las siguientes preguntas:

¿Qué hace que una recta sea más inclinada? ¿Qué hace que sea menos inclinada?

¿Cómo se relaciona el crecimiento con la inclinación?

¿Cuál es el valor inicial de una recta?

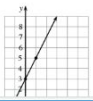
2-11. Escribe una ecuación que represente el patrón de azulejos de la siguiente tabla.

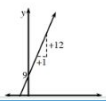
Nro. de figura	0	1	2	3	4
Cant. de azulejos	2	7	12	17	22

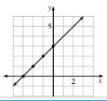
2-12. ¿La relación de la tabla anterior parece ser una función? De ser así, escribe la ecuación utilizando la notación de funciones. De no ser así, explica por qué no es una función.

2-13. Para cada uno de los gráficos incluidos más abajo:

- Describe cómo crece el patrón y cuántos azulejos hay en la Figura 0.
  x representa el número de figura e y representa la cantidad de azulejos en esa figura.
- Escribe una ecuación que relacione el número de figura, x, con la cantidad de azulejos, y.
- Decide si el gráfico representa una función. De ser así, escribe la ecuación usando la notación de funciones. De no ser así, explica por qué el gráfico no representa una función.

a. 

b. 

c. 

1. The second tab is the Leccion tab, this is the Spanish version of the lesson.

Lesson (ENG) | Lección (ESP) | **Answers** | Teacher Notes | My Notes

Lesson 2.1.2

2-11. $y = 5x + 2$

2-12. It is a function. $f(x) = 5x + 2$

2-13. a. $y = 4x + 3, f(x) = 4x + 3$ b. $y = 12x + 9, f(x) = 12x + 9$ c. $y = x + 3, f(x) = x + 3$

2-14. $27 \div 3 = 9$. See the "Suggested Lesson Activity" for a class discussion around this problem and unit growth rate.

2-15. a. 2

b. 4

c. $\frac{1}{2}$ or 0.5

d. divide Δy by Δx

e. $y = \frac{1}{2}x + 2$

2-16. a. $6 \div 4 = 3 \div 2 = 1.5$; Both give the same result.

b. 4.5; The ratio must be equal.

c. 1.5; This height is equal to the slope.

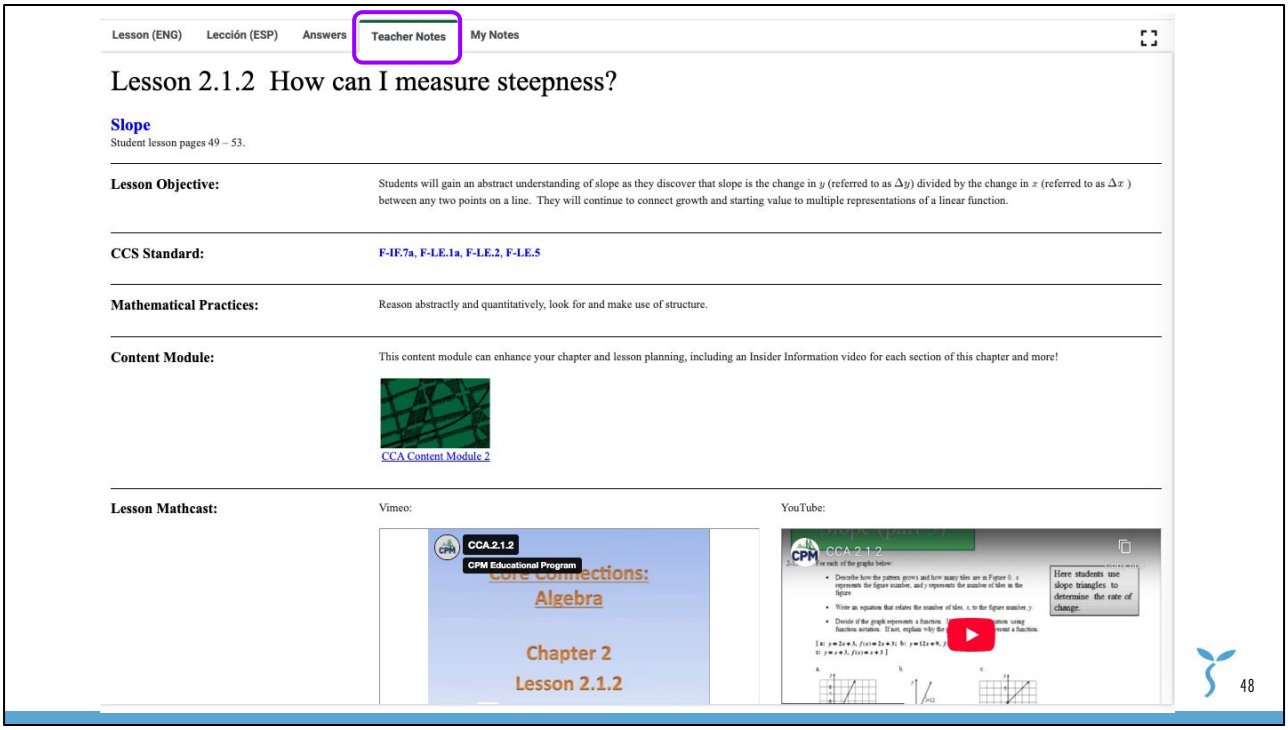
2-17. If $\Delta y = 0$, then the line is horizontal; if $\Delta x = 0$, then the line is vertical.

2-18. a. Essie is correct; $\Delta y = -3$ means that the vertical change is 3 and that the line is pointing downward.

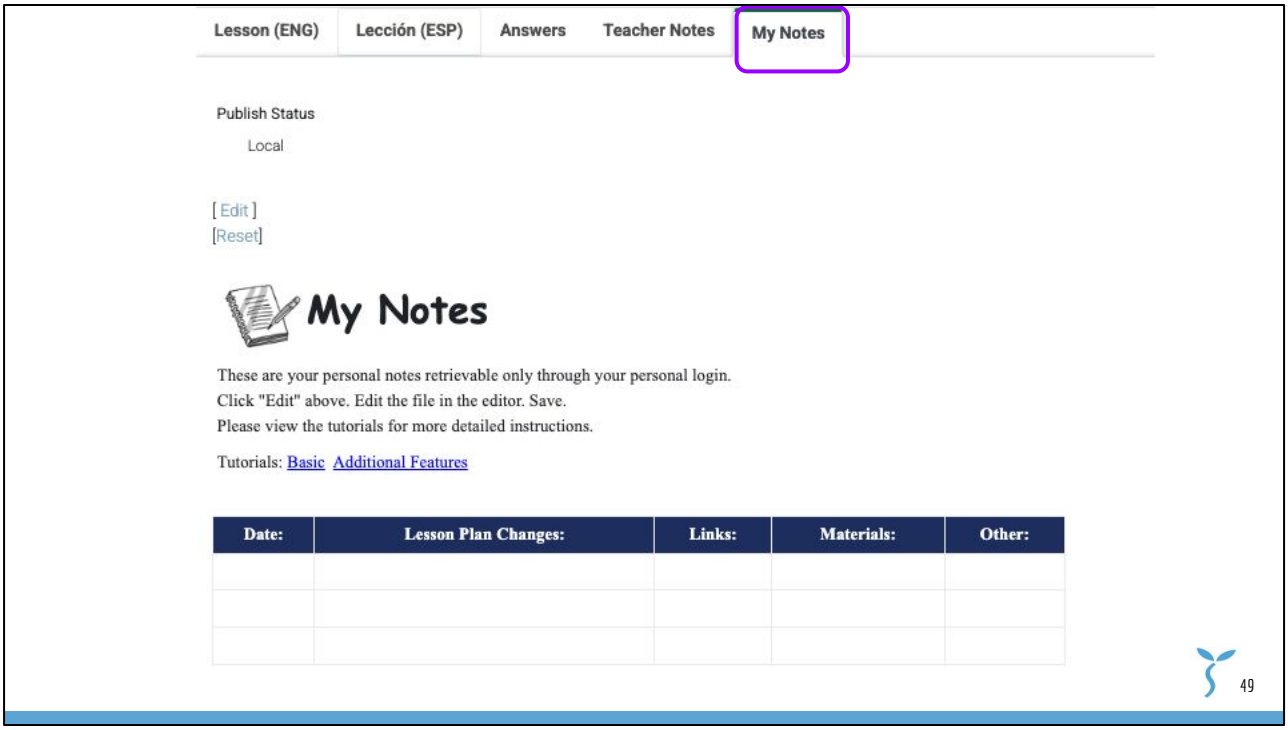
b. Yes; $\frac{-3}{4} = -\frac{3}{4}$

c. $y = -\frac{3}{4}x + 9$

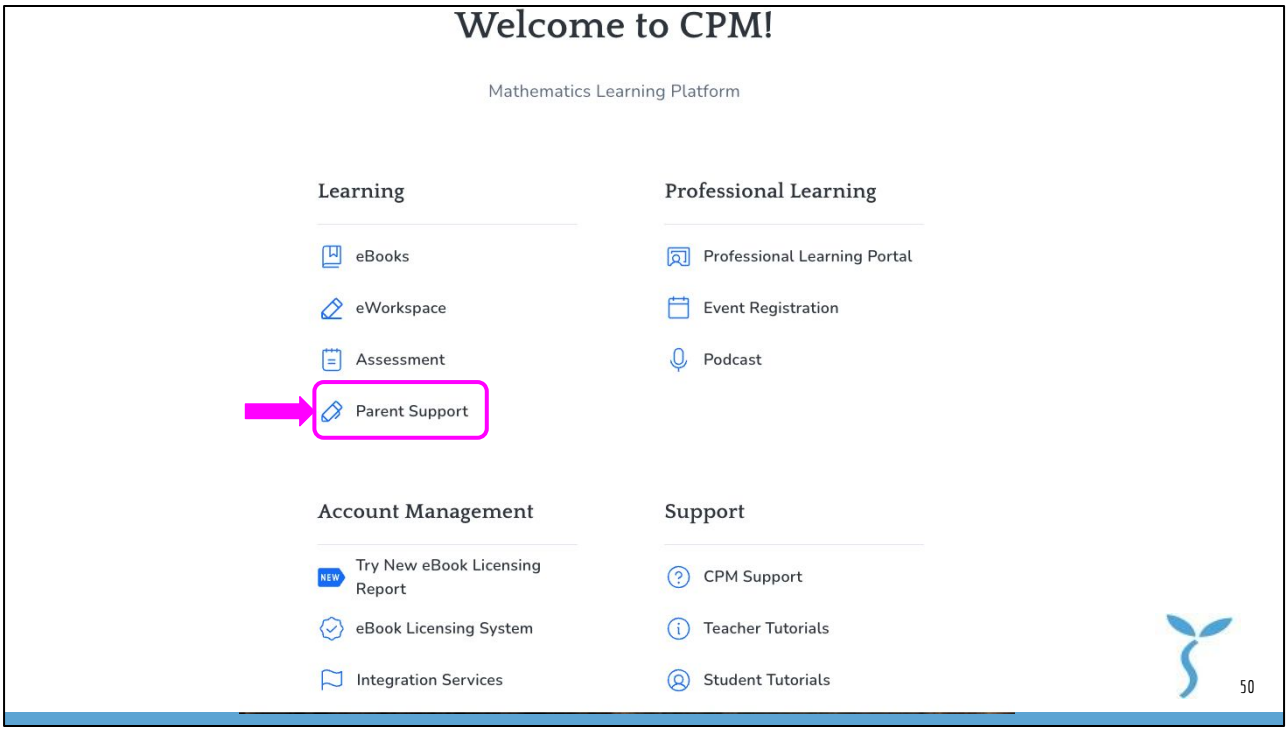
1. The "Answer" tab provides the answers for the teachers to each of the questions.



1. The next tab to the right is the “Teacher Notes” tab, this is the Teacher Guide.
2. Here, you’ll see resources to help teachers teach this chapter.
3. Some of the resources are videos explaining the chapter overview and tips for lesson planning.

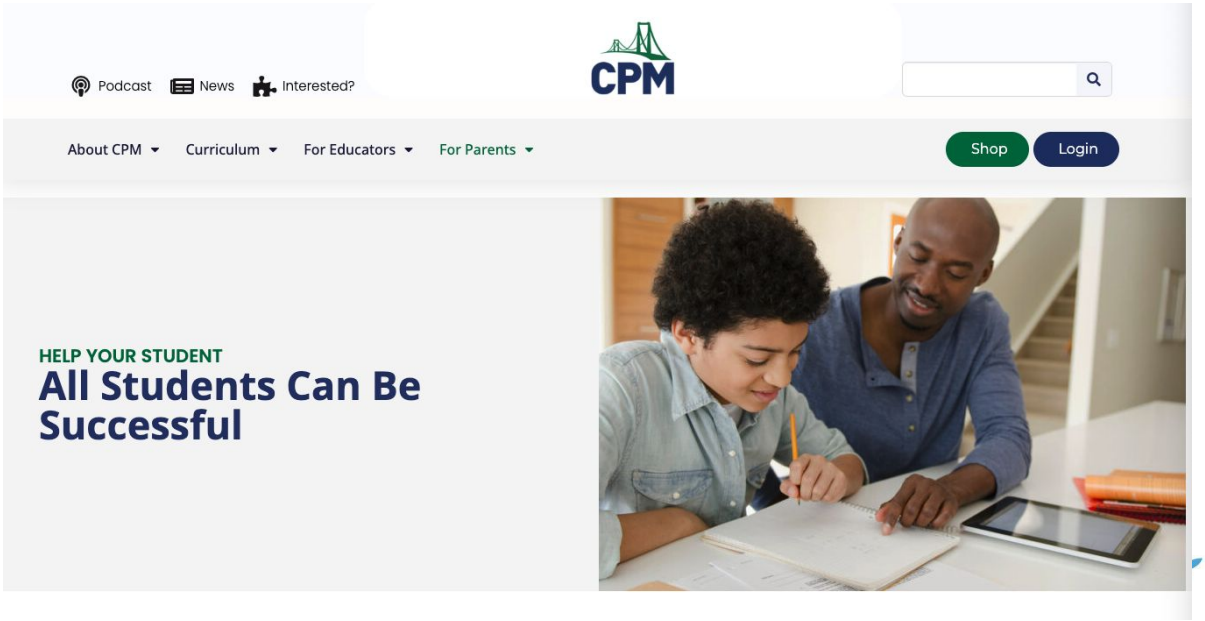


1. The last tab, “My Notes” is for the teacher to write notes for themselves as they plan for the lesson.
2. You won’t see anything here because we haven’t added any notes.
3. These 5 tabs will be present for all lessons in the curriculum.
4. When you explore the curriculum on your own, you can look through each tab more closely.



1. Now I'll briefly show you the Parent Support.

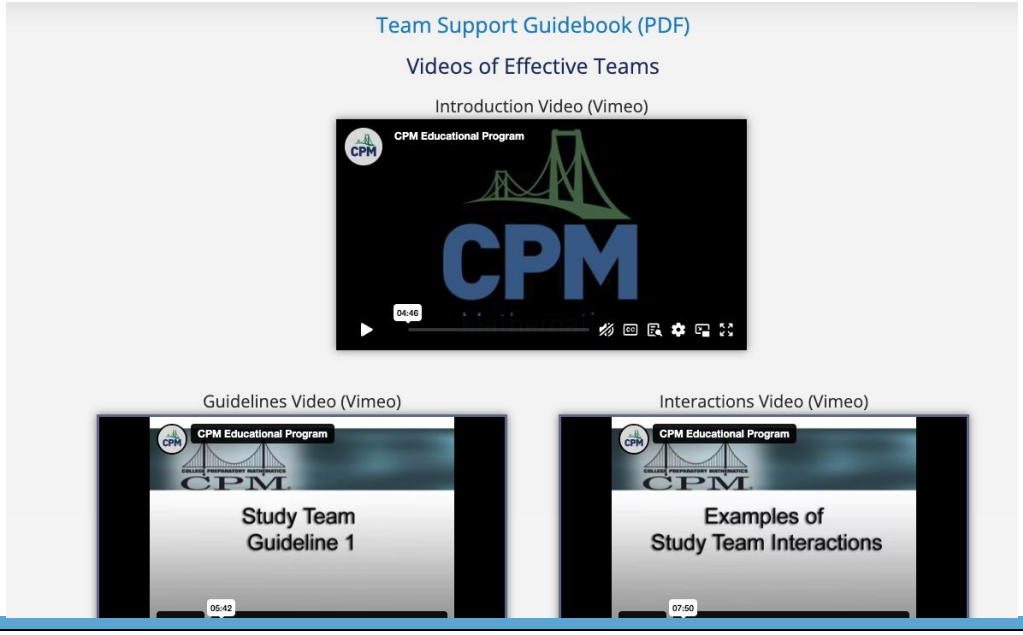
https://cpm.org/help-your-student



51

1. When you click on Parent Support, you'll be taken to this page.
2. This is accessible to families even if you don't have an account.
3. The web address is: cpm.org/help-your-student
4. Scroll through it to see if there is any informatn that would be helpful to you.
5. Some of the resources that might be helpful to you are:

https://cpm.org/help-your-student



1. Team support Guides with videos
2. These videos explain what study teams are. Study teams is how CPM has students working together.
3. And provide examples of what an ideal study team should look and sound like.

https://cpm.org/help-your-student

Helping Your Student by Asking Questions

Below are lists of additional questions to use when working with your student. These questions do not refer to any particular concept or topic. Some questions may or may not be appropriate for some problems. Click on each topic to view the questions.

- Questions to use when working with your student.
- Questions to use when your student has made a start at a problem.
- Questions to use when you and your students feel stuck.

1. How to use questions to help your student might be a helpful tool for you.
2. This helps caregivers know how to use questions to further students' thinking and teach them how to solve the problem on their own.

https://cpm.org/help-your-student

Tips for Assisting a CPM Student

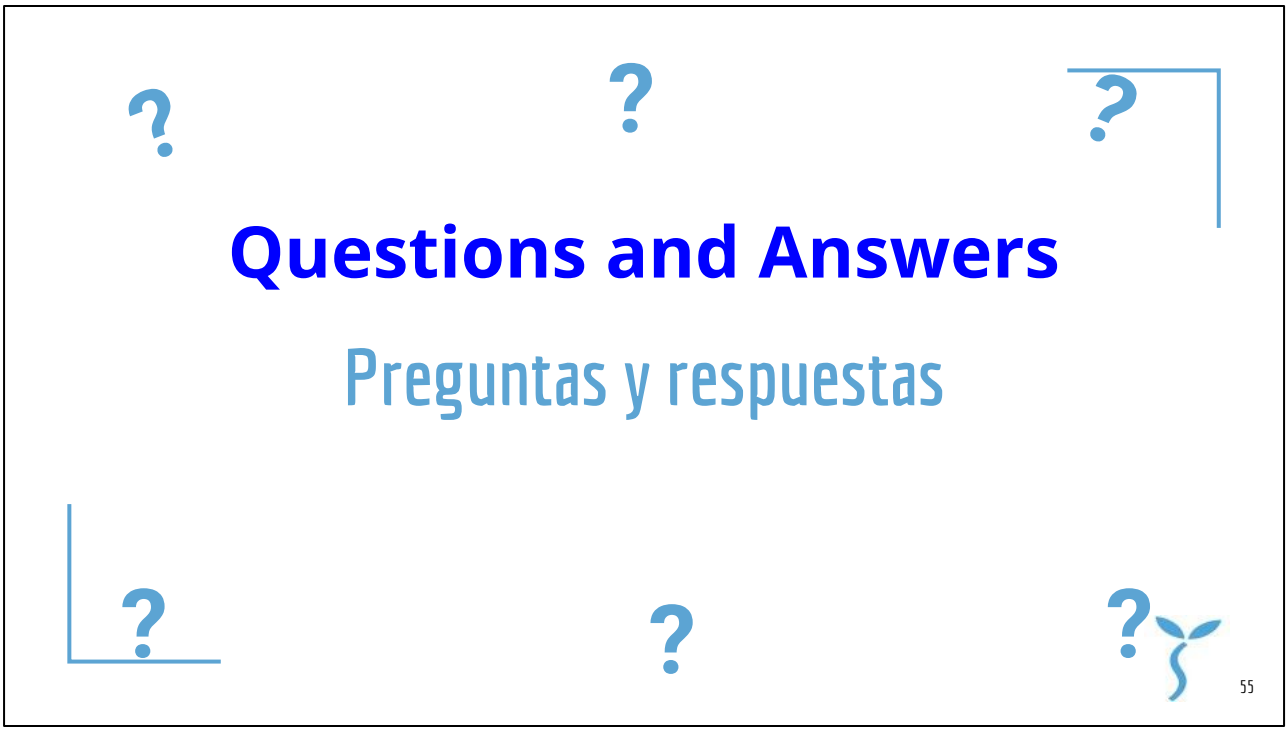
We believe all students can be successful in mathematics as long as they are willing to work and ask for help when they need it. We encourage you to contact your student's teacher if your student has additional questions that this guide or other resources do not answer.

A good place to start when assisting a student with CPM mathematics is with the Parent Guide for the course your student is enrolled in. Download a copy of the Parent Guide located in your student's CPM eBook under *Student Support* within the Reference Tab at the left. Once in *Student Support*, select *Parent Guide* at the top menu.

Parent Tips of the Week

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Week 13	Week 14	Week15	Week 16	Week 17	Week 18
Week 19	Week 20	Week 21	Week 22	Week 23	Week 24
Week 25	Week 26	Week 27	Week 28	Week 29	Week 30
Week 31	Week 32	Week 33	Week 34	Week 35	

1. Parent Tips of the Week provide different tips to help you throughout the school year.



1. That was a lot of information about the proposed Algebra 1 curriculum, CPM and there's probably more information that you want to know.
2. However, we don't have 30 hours of time for me to give you the training our teachers will receive in learning how to teach this way.
3. Right now, the best way for you to understand the curriculum is to look at it for yourself.
4. Go through and click the different sections and peruse it at your leisure.

Expectations for Q & A Time

1. This time is for asking questions about the **proposed Algebra 1 curriculum**.
2. Ask question by either:
   a. Using "Raise Hand" feature on Zoom
   b. Type question into the Q &A
3. If you think of a question after the session, filll out this Google Form- https://forms.gle/62DXfm3Te75BPtZd7

Expectativas para el Tiempo de Preguntas y Respuestas

1. Este espacio es para hacer preguntas sobre el currículo de Álgebra 1 propuesto.
2. Puede hacer preguntas de dos maneras:
   a. Usando la función "Levantar la mano" en Zoom.
   b. Escribiendo su pregunta en la sección de Preguntas y Respuestas (Q&A)
3. Si piensa en una pregunta después de la sesión, complete este formulario de Google: https://forms.gle/62DXfm3Te75BPtZd7.

56

1. For those of you who may have already looked at the curriculum and have questions and/or you have questions that I wasn't able to answer during the presentation, you may ask by either using the raise hand feature or by typing in your question into the Q&A.
2. If you're like me and you think of questions after the tonight's session, you can also fill out this Google Form and submit questions this way.

Tonight's presentation will be located on Sunnyvale School District's website at

La presentación de esta noche se publicará en el sitio web del Distrito Escolar de Sunnyvale en

www.sesd.org/Page/5872

Scroll past the Math Pathways document.

Desplácese más allá del documento de Itinerarios de Matemáticas

Access to Curriculum / Acceso al Currículo

1. Email curriculumpreview@sesd.org.
2. In email include the following information:
   a. Caregiver's Name
   b. Student's Name
   c. Student's School
   d. Student's Grade level

1. Envíe un correo electrónico a curriculumpreview@sesd.org.
2. En el correo electrónico incluya la siguiente información:
   a. Nombre del Cuidador
   b. Nombre del Estudiante
   c. Escuela del Estudiante
   d. Nivel de Grado del Estudiante

1.