Mc Graw Hill

# California Reveal MATH®

# Overview

## Grades K–8

# EARLY ACCESS PREVIEW

## Reveal a World of Possibilities

In *California Reveal Math®*, students explore and investigate mathematics through learning experiences aligned with the 2023 *California Math Framework*.

***California Reveal Math* offers abundant opportunities to:**

- Focus on the Big Ideas.
- Build the language of mathematics.
- Cultivate a positive math culture.
- Inspire learners to consistently use the Standards for Mathematical Practice.
- Use actionable data to provide just-in-time support for all learners.
- Engage with rich professional learning opportunities in every lesson.

Contact us at **mhecalifornia.com/reveal** to see how your school can get early access to our new math curriculum!

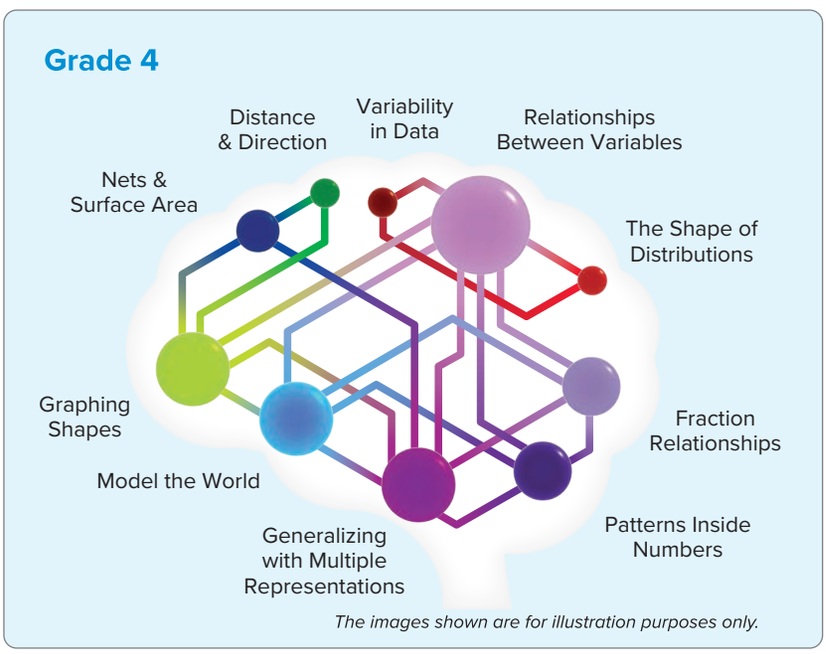
California Reveal MATH®

***Early Access* allows you to use a portion of our curriculum and provide feedback for program updates!**

# Teach Through the Big Ideas

*California Reveal Math* combines educational research, cognitive science, and neuroscience to provide learning experiences that support student development of the Big Ideas.

Each lesson in the unit is designed to connect mathematical standards to the Big Ideas through discourse questions and key areas to focus on when listening to student thinking.




## Unit Opener

### Multi-Digit Numbers: Addition and Subtraction Strategies and Algorithms

**Big Idea** Multi-Digit Numbers

**Content Connection** Exploring Changing Quantities

**Essential Question** **How can you use addition and subtraction for multi-digit numbers to explore changing quantities?**

**Engage with the Essential Question**

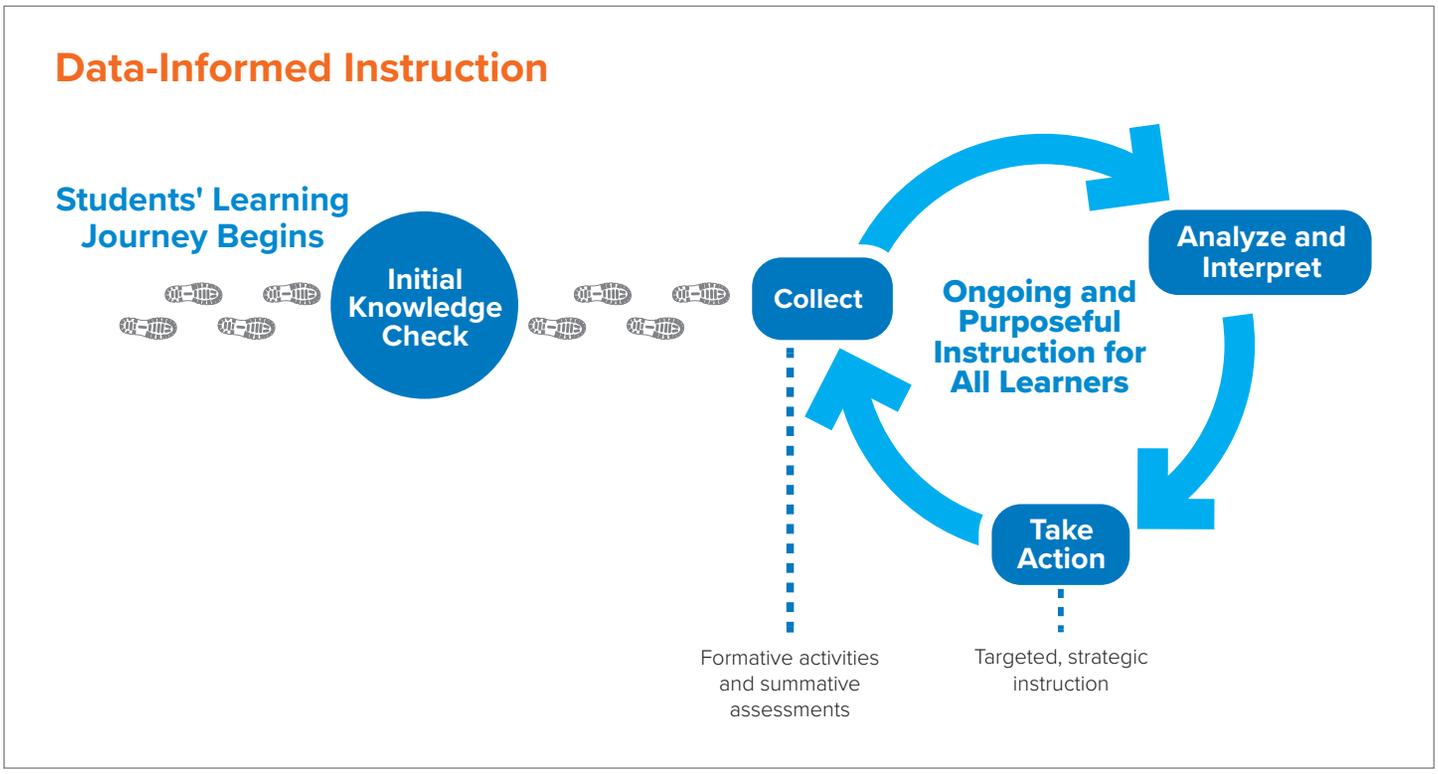
Read aloud the essential question with students and ask: What are some things we might discover as we explore this question in this unit? Honor students' thinking by charting their ideas and referring to them throughout the unit.

## Foster Inquiry

Each unit starts with an **Essential Question** that sparks students' curiosity and draws upon their prior knowledge, challenging them to relate the Big Ideas to new material.

# Personalized to Meet the Needs of All Learners

*California Reveal Math®* is designed to help educators easily assess for understanding and differentiate accordingly. The purposeful approach of the curriculum and seamless integration of qualitative and quantitative data maximizes instructional time. This data is utilized to help inform instructional decisions, aiming to improve teaching effectiveness and promote equitable learning outcomes through data-informed practices.




Students begin each year by completing the **Initial Knowledge Check**, a diagnostic assessment that provides insights into their current strengths and needs.

Teachers **Collect** data through a variety of summative and formative assessments. Daily opportunities to formatively assess student understanding of content, math practices, and math language are woven throughout each lesson. Teachers are provided with discourse questions and “Listen to” prompts to promote and assess mathematical thinking. Data is presented in an actionable format for the teacher to **Analyze and Interpret**.

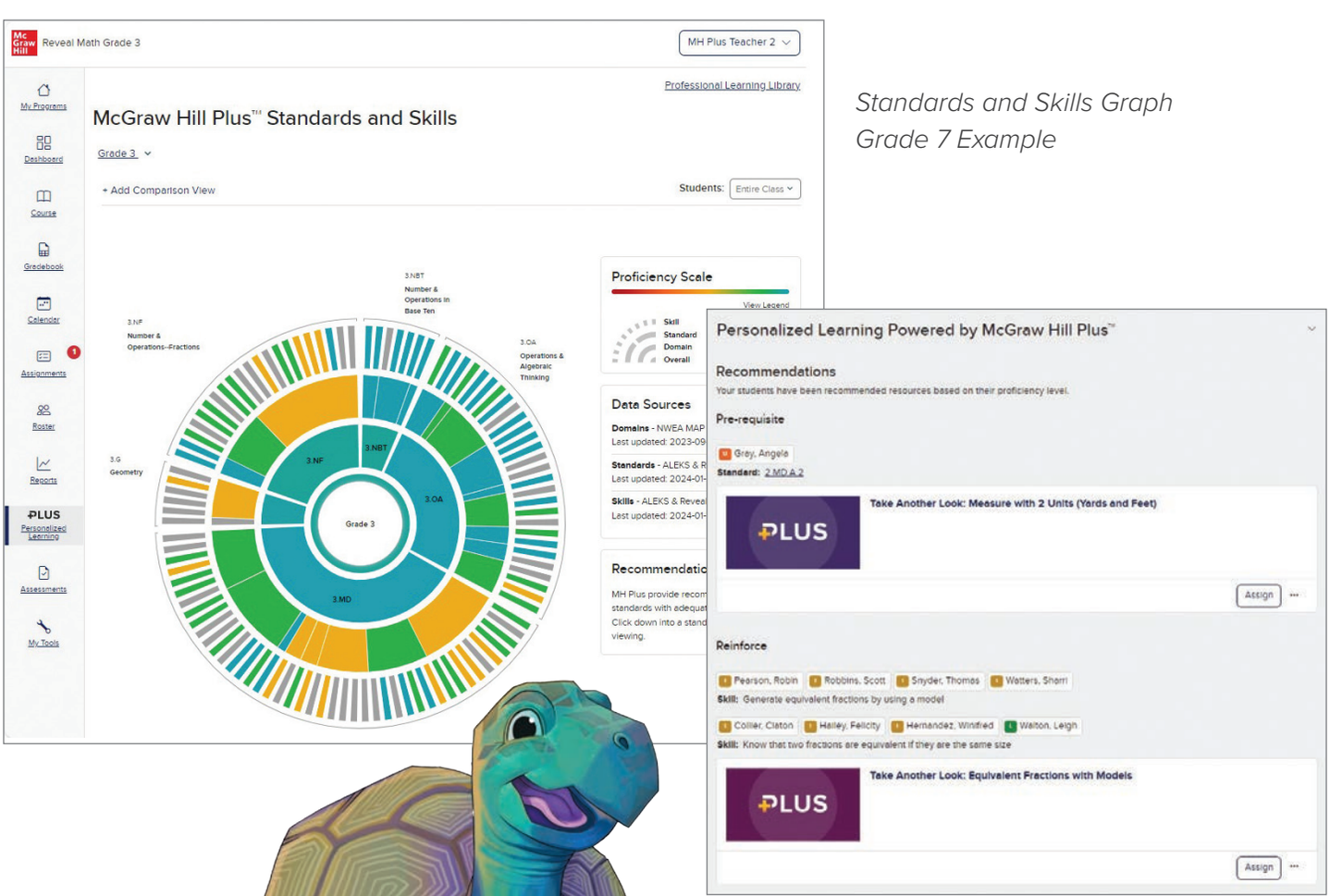
In *California Reveal Math* teachers are equipped with the tools to **Take Action**. These tools include built-in teacher supports to differentiate instruction immediately based on students’ individual needs. Actionable insights and practice recommendations are automatically assigned and personalized, empowering teachers with the information necessary to adapt and improve instruction.

# Valuable Data, Actionable Insights

The **Standards and Skills Graph** automatically puts the data necessary for intentional instruction and differentiation at teachers' fingertips. As students work, it automatically updates to reflect proficiency, identify strengths and gaps in learning, and make personalized learning recommendations for enrichment or intervention, saving teachers hours of precious planning time. **Districts that participate in *NWEA MAP Growth* assessments and select other interim assessments will also see those assessment results reflected in the graph in real time.**

To meet the needs of all learners, these recommendations are available at five different levels:

- Prerequisite—2+ Years Below Grade Level
- Reinforce
- On-Level
- Extension
- Post-Requisite—Beyond Grade Level




*Standards and Skills Graph*
*Grade 7 Example*

# Leverage the Strengths of All Learners

*California Reveal Math*® is thoughtfully designed to meet the diverse needs of all learners, accommodating variations in their prior knowledge, skills, and experiences. Built on the principle that everyone is a math person, the curriculum provides learning experiences to help teachers create a positive math culture that supports access for all students, allowing them to grow as mathematically capable, independent, and confident problem solvers.

**ETP Facilitate Meaningful Discourse**

Have students share possible strategies to solve the problem as you record their responses on a chart.

- What is a reasonable estimate for the sum?
- Do you think the algorithm is an efficient strategy to solve the equation? Explain your reasoning.
- What do the digits 1 and 4 represent?
- Why can you record the digit 1 above the other digits in the tens place?
- How do you know when you need to regroup?
- What do you notice about the way we record regrouping in the algorithm?

**Listen to students' thinking about how they:**

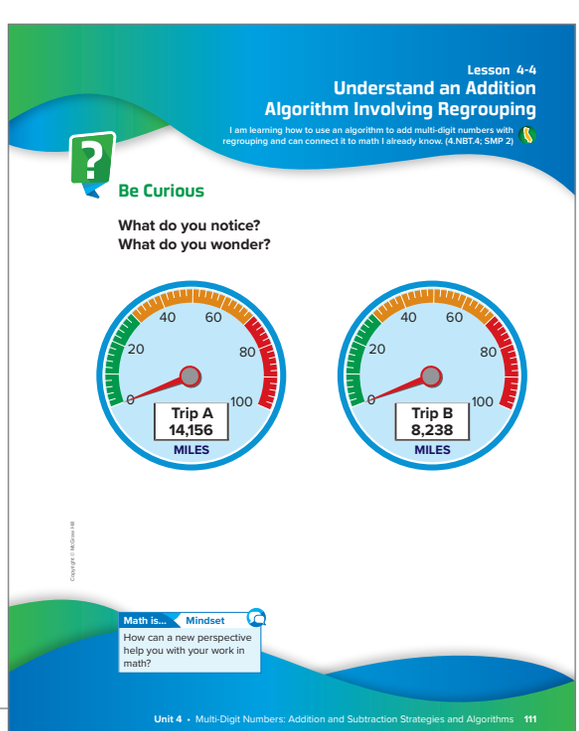
- discover that when the ones are added, the result is 10 or greater. The ones get recorded in the ones column and you write the 1 above the tens to show there is another ten to add.
- understand that in the algorithm, when the sum in a place is 10 or greater, a 1 is added to the column to the left to record the regrouping in the next greater place.

## Foster Metacognition

Embedded **Listen to** prompts facilitate student conversation and center student thinking.

## Spark Curiosity

**Be Curious** sense-making routines begin each lesson, fostering an inclusive classroom environment where every idea is valued and honored. Resulting discussions serve as an entry point for all students to access the day's lesson.

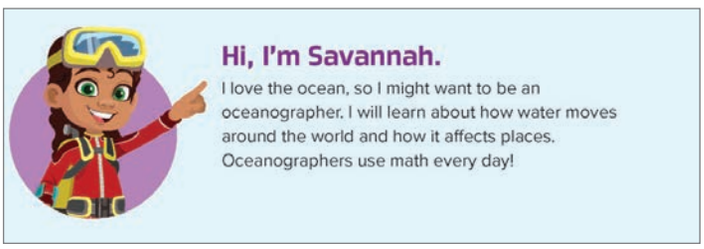


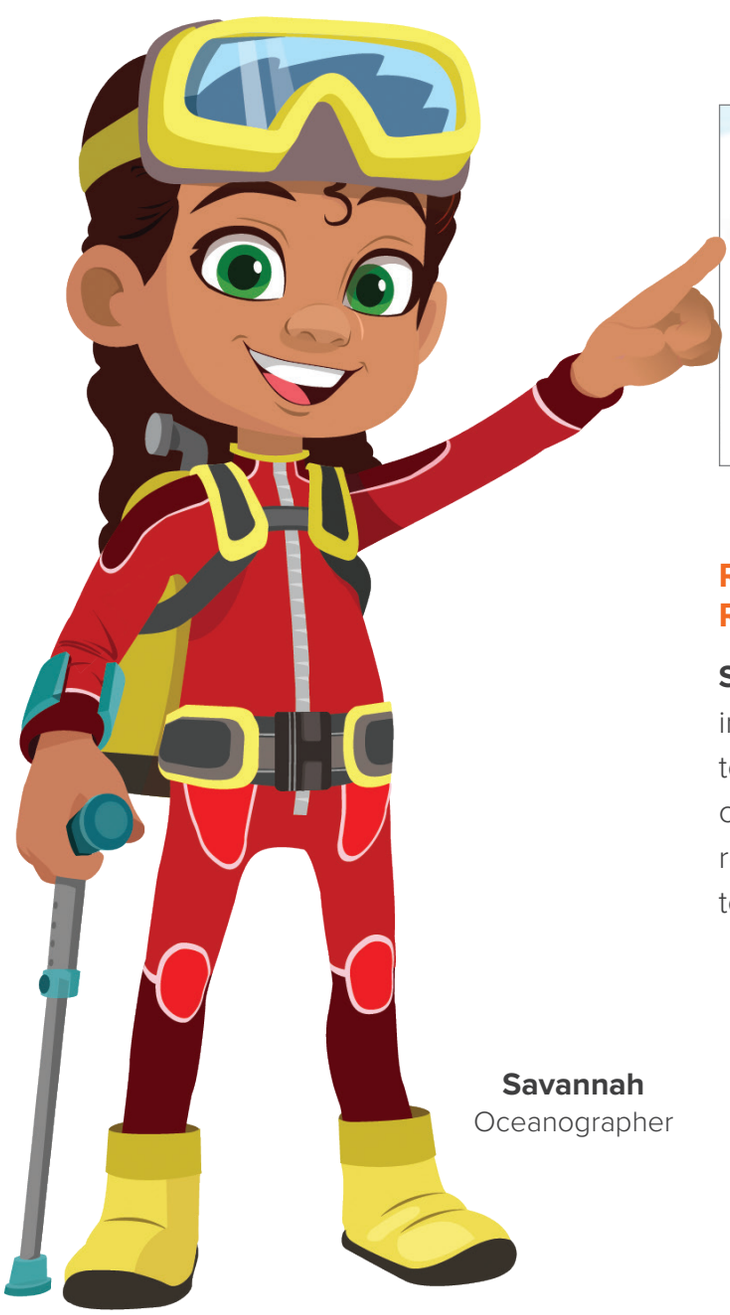

**Access Content**

**If...** students are not familiar with what an odometer is,
**Then...** explain that most cars have an odometer that tracks the miles traveled for any trip. When a button is pressed on the dashboard of a car, the odometer counter is reset and can be used for a new trip.

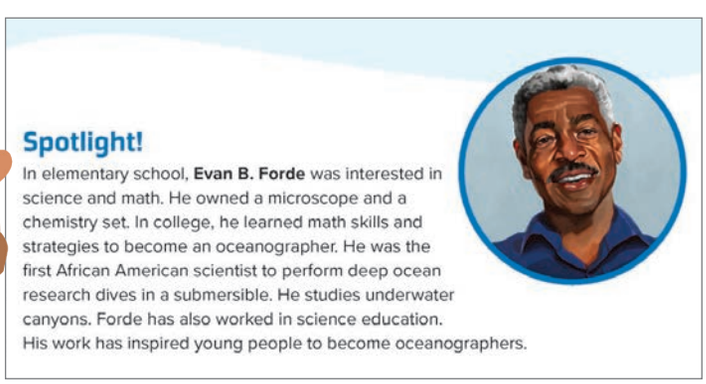
## Build Math Community

**STEM Career Kids** invite students to explore in-demand California careers—marine biologists, geologists, animal researchers, and more—that require strong math skills. Embedded question prompts help teachers encourage students to exhibit positive math habits of mind in class today and in their jobs tomorrow.



**Savannah**
Oceanographer




## Representation Through Real People

**Spotlight!** features mini biographies of diverse individuals who have made lasting contributions to STEM fields. As they respond to questions connected to Spotlight! mathematicians, students recognize that we are all mathematicians and learn to believe they can make an impact too!

# A Dynamic, Purposeful Lesson Model

The lesson model is intentionally designed to provide all students an entry point into the math and to provide all teachers with the tools to facilitate learning and inquiry.

### Learning Outcomes

**Big Idea** Multi-Digit Numbers
**Content Connection** Exploring Changing Quantities
**Driver of Investigation** Impact the Future

- Mathematicians use place-value understanding to round multi-digit whole numbers.
- Mathematicians explore ways to estimate sums and differences involving multi-digit numbers.
- Mathematicians use estimates to determine whether an answer is reasonable.

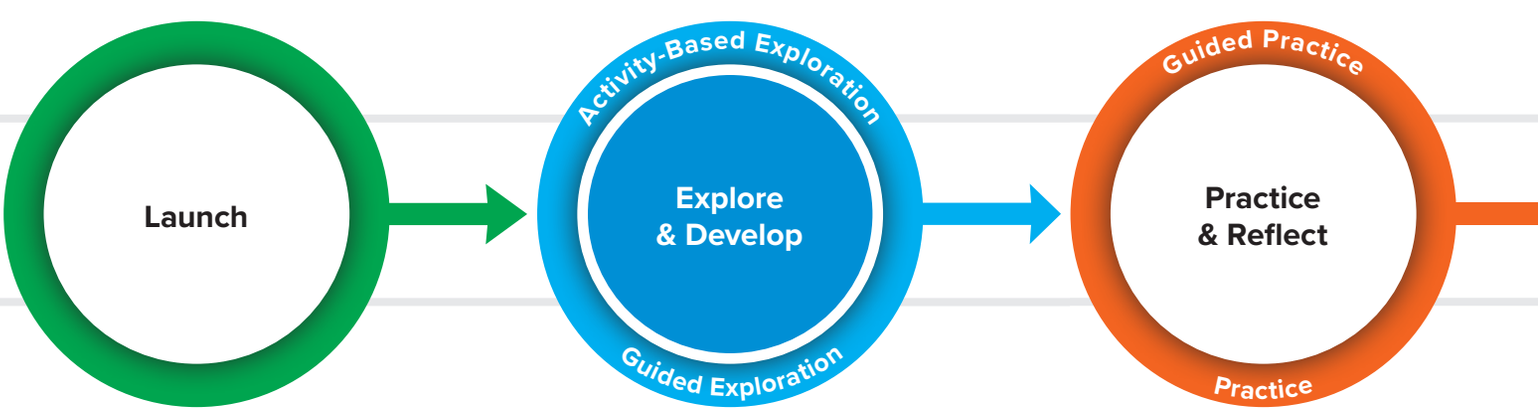
### Connect Ideas

*See Grade 4 California Common Core State Standards for Mathematics,* pp. A6–A9.

- **4.OA.3, 4.NBT.3**
- **SMP 1** Make sense of problems and persevere in solving them.
- **SMP 2** Reason abstractly and quantitatively.

**Learning outcomes** are highlighted at the beginning of each lesson and outline:

- The Big Ideas
- Content Connections
- Drivers of Investigation
- California Common Core State Standards for Mathematics
- Standards for Mathematical Practice




**Launch**

Every lesson launches with a **Be Curious** sense-making routine designed to encourage student curiosity and ideas while observing a situation, problem, or phenomenon. Students apply previously learned problem-solving strategies or knowledge to make sense of the problem or to wonder about how they may approach the situation.

**Explore & Develop**

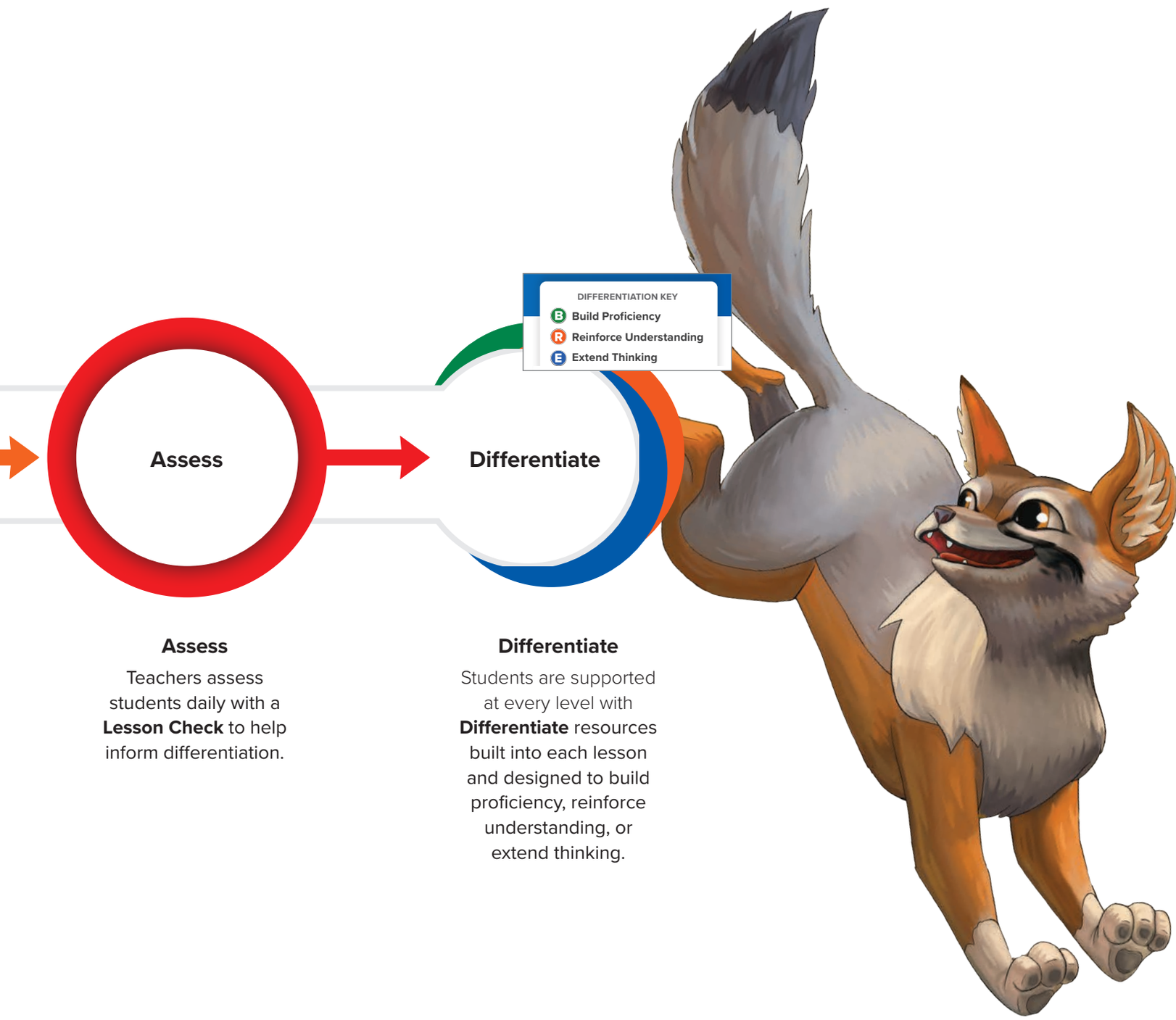
Students are challenged to think like mathematicians during **Explore & Develop**, where they work collaboratively to help each other problem-solve stimulating, authentic tasks through an **Activity-Based Exploration** or **Guided Exploration**.

**Practice & Reflect**

Students synthesize their learning during **Practice & Reflect**, working both collaboratively and independently to determine the best way to tackle problems, think critically about their solutions, and apply what they've learned in new ways.

Each lesson's **Explore & Develop** is structured as a discovery-driven Activity-Based Exploration, a teacher-facilitated Guided Exploration, or a choice between the two.

**Activity-Based Explorations** supply opportunities for students to discover and learn about new or complex topics through hands-on or digital exploration. Teacher-facilitated **Guided Explorations** provide practice and review for more familiar content. **Choice lessons** empower teachers to choose between the two based on their students' needs.




**Assess**

Teachers assess students daily with a **Lesson Check** to help inform differentiation.

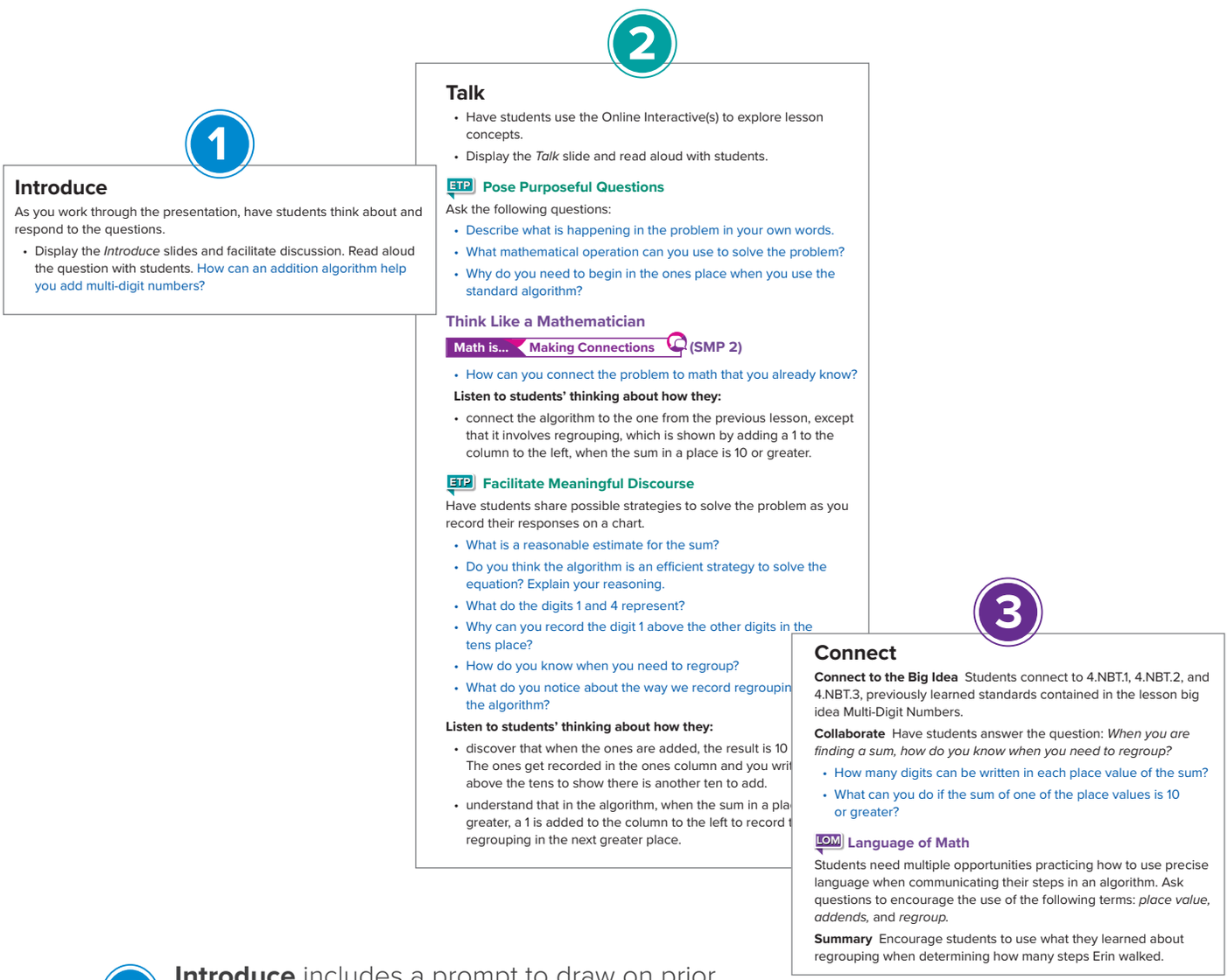
**Differentiate**

Students are supported at every level with **Differentiate** resources built into each lesson and designed to build proficiency, reinforce understanding, or extend thinking.

*California Reveal Math K-8 Lesson Model Example*

# Build the Language of Math

*California Reveal Math®* champions collaboration and discourse, empowering students to ask questions, challenge assumptions, and explore mathematical concepts together to build comprehension and mastery. Throughout each lesson, the **Introduce, Talk, and Connect** framework supports student discourse and teacher facilitation, both in the Teacher Edition and in the Editable Teacher Presentation.



1

### Introduce

As you work through the presentation, have students think about and respond to the questions.

- Display the *Introduce* slides and facilitate discussion. Read aloud the question with students. How can an addition algorithm help you add multi-digit numbers?

2

### Talk

- Have students use the Online Interactive(s) to explore lesson concepts.
- Display the *Talk* slide and read aloud with students.

**ETP Pose Purposeful Questions**

Ask the following questions:

- Describe what is happening in the problem in your own words.
- What mathematical operation can you use to solve the problem?
- Why do you need to begin in the ones place when you use the standard algorithm?

**Think Like a Mathematician**

**Math is... Making Connections (SMP 2)**

- How can you connect the problem to math that you already know?

**Listen to students' thinking about how they:**

- connect the algorithm to the one from the previous lesson, except that it involves regrouping, which is shown by adding a 1 to the column to the left, when the sum in a place is 10 or greater.

**ETP Facilitate Meaningful Discourse**

Have students share possible strategies to solve the problem as you record their responses on a chart.

- What is a reasonable estimate for the sum?
- Do you think the algorithm is an efficient strategy to solve the equation? Explain your reasoning.
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3

### Connect

**Connect to the Big Idea** Students connect to 4.NBT.1, 4.NBT.2, and 4.NBT.3, previously learned standards contained in the lesson big idea Multi-Digit Numbers.

**Collaborate** Have students answer the question: *When you are finding a sum, how do you know when you need to regroup?*

- How many digits can be written in each place value of the sum?
- What can you do if the sum of one of the place values is 10 or greater?

**LOM Language of Math**

Students need multiple opportunities practicing how to use precise language when communicating their steps in an algorithm. Ask questions to encourage the use of the following terms: *place value, addends,* and *regroup.*

**Summary** Encourage students to use what they learned about regrouping when determining how many steps Erin walked.

1 **Introduce** includes a prompt to draw on prior knowledge and engage all students.

2 **Talk** invites students to explore, discover, discuss, and collaborate.

3 Students **Connect** by summarizing, reflecting, and synthesizing the learning.

Additional collaborative structures are built into the Teacher Edition and Editable Lesson Presentation at point of use.

ETP **Effective Teaching Practices** are process-oriented and reasoning questions based on the National Council of Teachers of Mathematics' eight Effective Teacher Practices to guide instruction and discourse throughout each lesson.

LOM **Language of Math** promotes the development of key vocabulary terms that support how we talk about and think about math in the context of the lesson content.

## Asset-Based Instruction

*California Reveal Math* recognizes and leverages students' strengths, skills, and cultural backgrounds as valuable assets in the learning process. Support for multilingual learners within the curriculum is grounded in best practices of current research and the English Learners Success Forum. This approach fosters an inclusive and supportive learning environment where students feel valued and empowered to actively engage in their learning.

ML **Multilingual Learner Scaffolds**

**Emerging** Review the names of animals and objects by pointing to the image as you name it and describe it. Have students repeat using a sentence frame, such as *This is a...(object). It is...(color).*

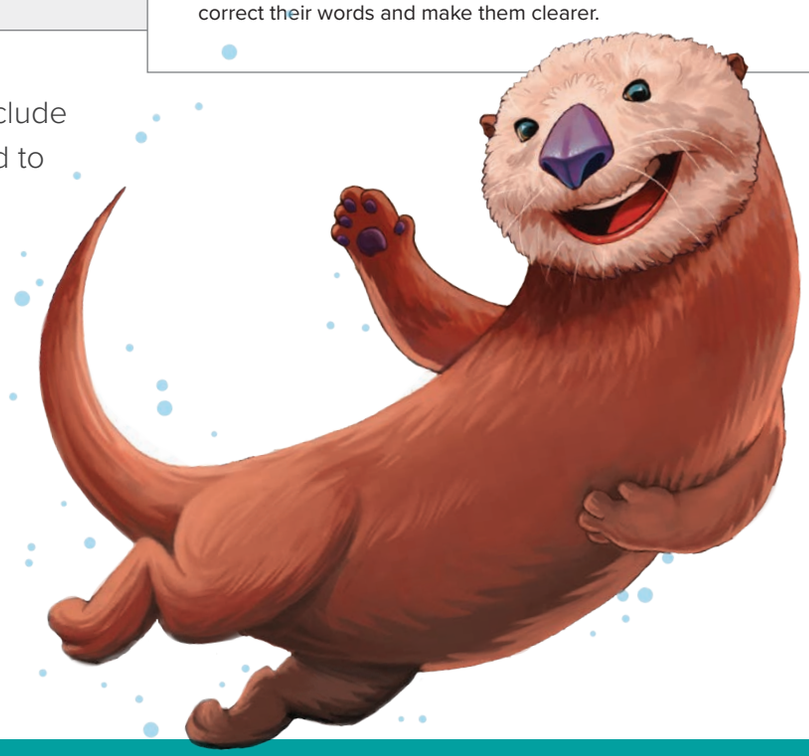
**Expanding** Use sentence frames to respond to the question on p. 3 *How many frogs are there? There are...frogs on the log.* Repeat the activity with the ducks in the pond. Review the meaning of the word *add*. *What does add mean?* (to join or to attach).

**Bridging** Have students work in pairs to name and describe the animals and objects. Partners paraphrase the answers they hear to confirm understanding. Ask both students to tell if they agree on the names and descriptions.

MLR **MLR: Discussion Supports**

1. Ask, How can you use an algorithm to determine the difference in weight between the elephants?
2. **Restating** As students share their thoughts on the question posed, repeat and rephrase their ideas to model mathematical language used in order to clarify, apply appropriate language, and involve more students. Start by saying, *So you are saying...*, and then correct their words and make them clearer.

Intertwined support and strategies include scaffolded language supports tailored to language proficiency levels.



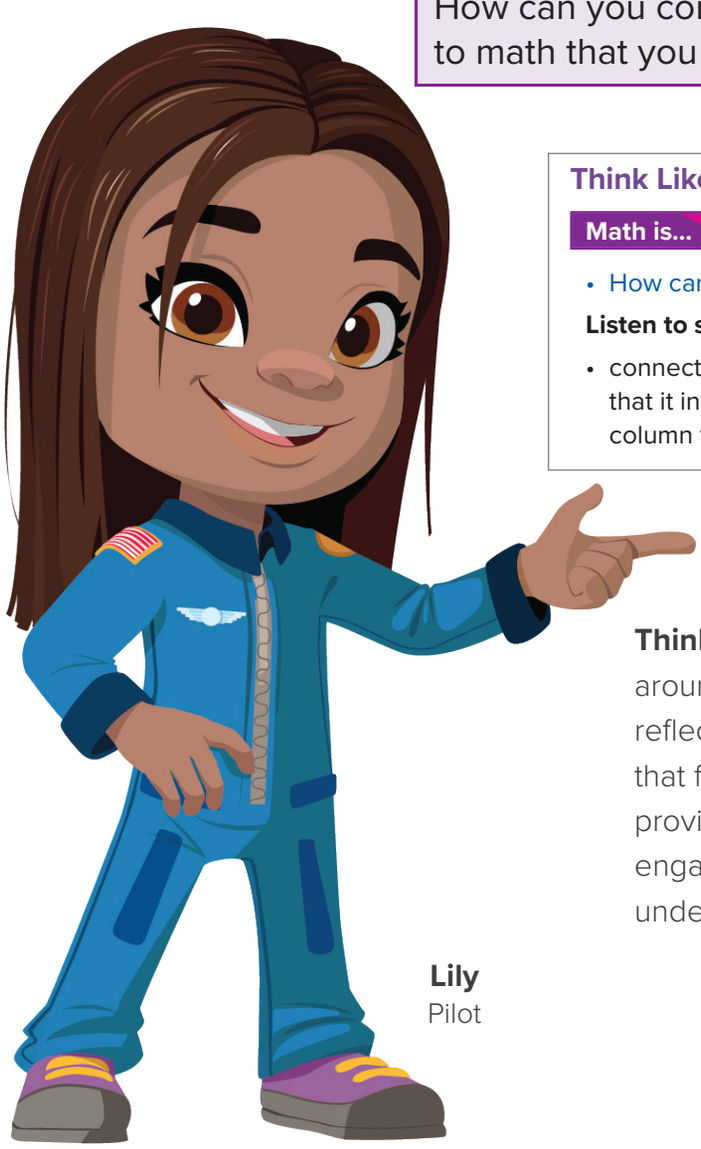
# Think Like a Mathematician

*California Reveal Math®* encourages students to think like a mathematician by:

- Explaining what and how they think about math.
- Justifying and providing evidence of strategies and solutions.
- Listening to and making sense of their thinking and the thinking of others.
- Asking questions that clarify, challenge, and reinforce thinking.

**Math is... Making Connections**

How can you connect the problem to math that you already know?



**Lily**
Pilot

**Think Like a Mathematician**

**Math is... Making Connections (SMP 2)**

- How can you connect the problem to math that you already know?

**Listen to students' thinking about how they:**

- connect the algorithm to the one from the previous lesson, except that it involves regrouping, which is shown by adding a 1 to the column to the left, when the sum in a place is 10 or greater.

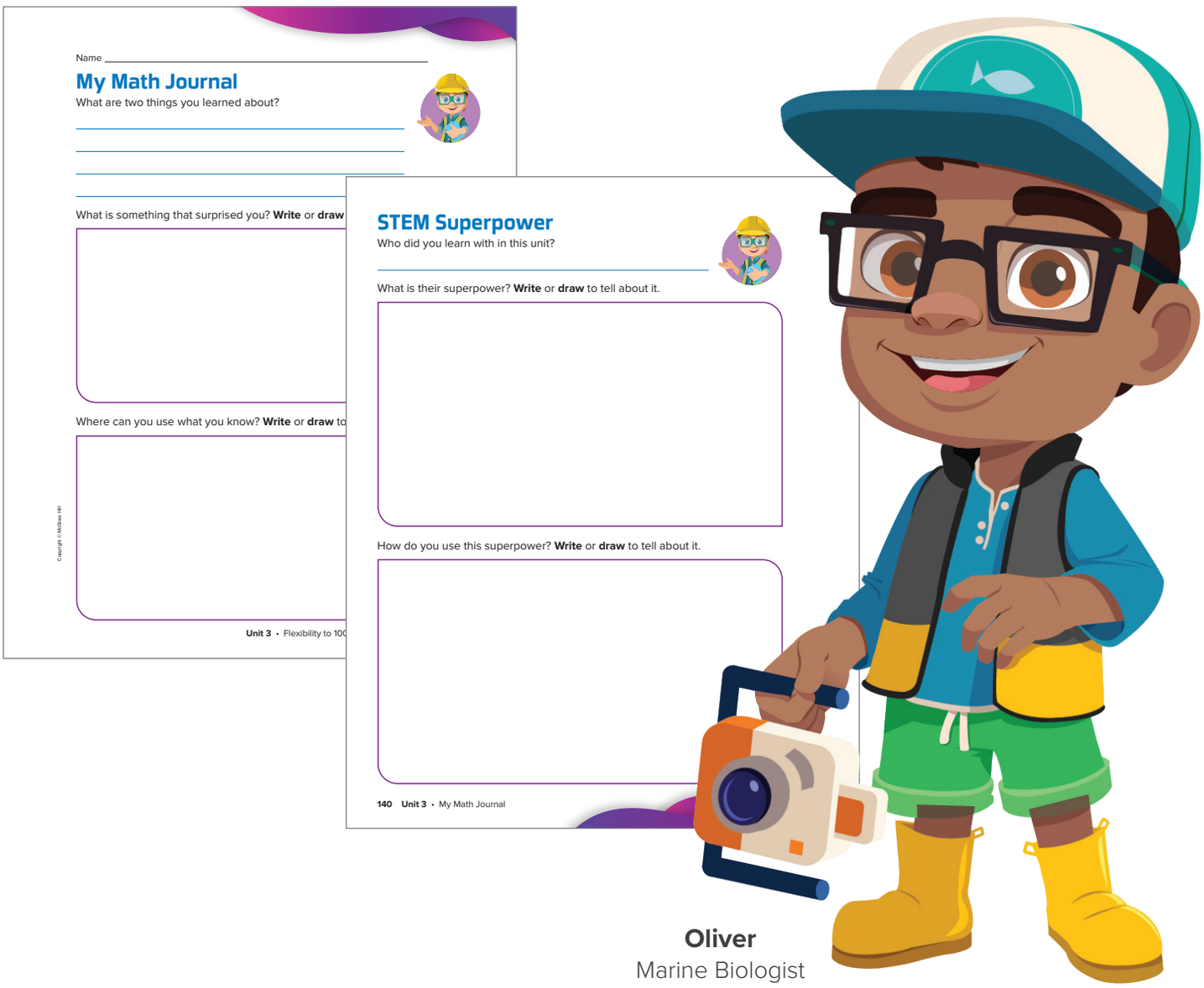
**Think Like a Mathematician** prompts are built around the Standards for Mathematical Practice and reflect the habits of mind and habits of interaction that form the basis of math learning. Teachers are provided with **Listen to** prompts that support student engagement with the math practices, fostering deeper understanding and connection-building.

# Explore the Math in Our World

**Mathematical Modeling tasks** connect unit math concepts to the Big Ideas through authentic, real-world investigations that shine a light on math all around us.

**My Math Journal** and **STEM Superpower** pages at the end of each unit offer students an opportunity to:

- Reflect on learning.
- Synthesize their understanding.
- Make connections to other math concepts, the Big Ideas, and real-world applications.
- Communicate their understanding through drawing or writing.
- Build their math schema by connecting to prior knowledge.

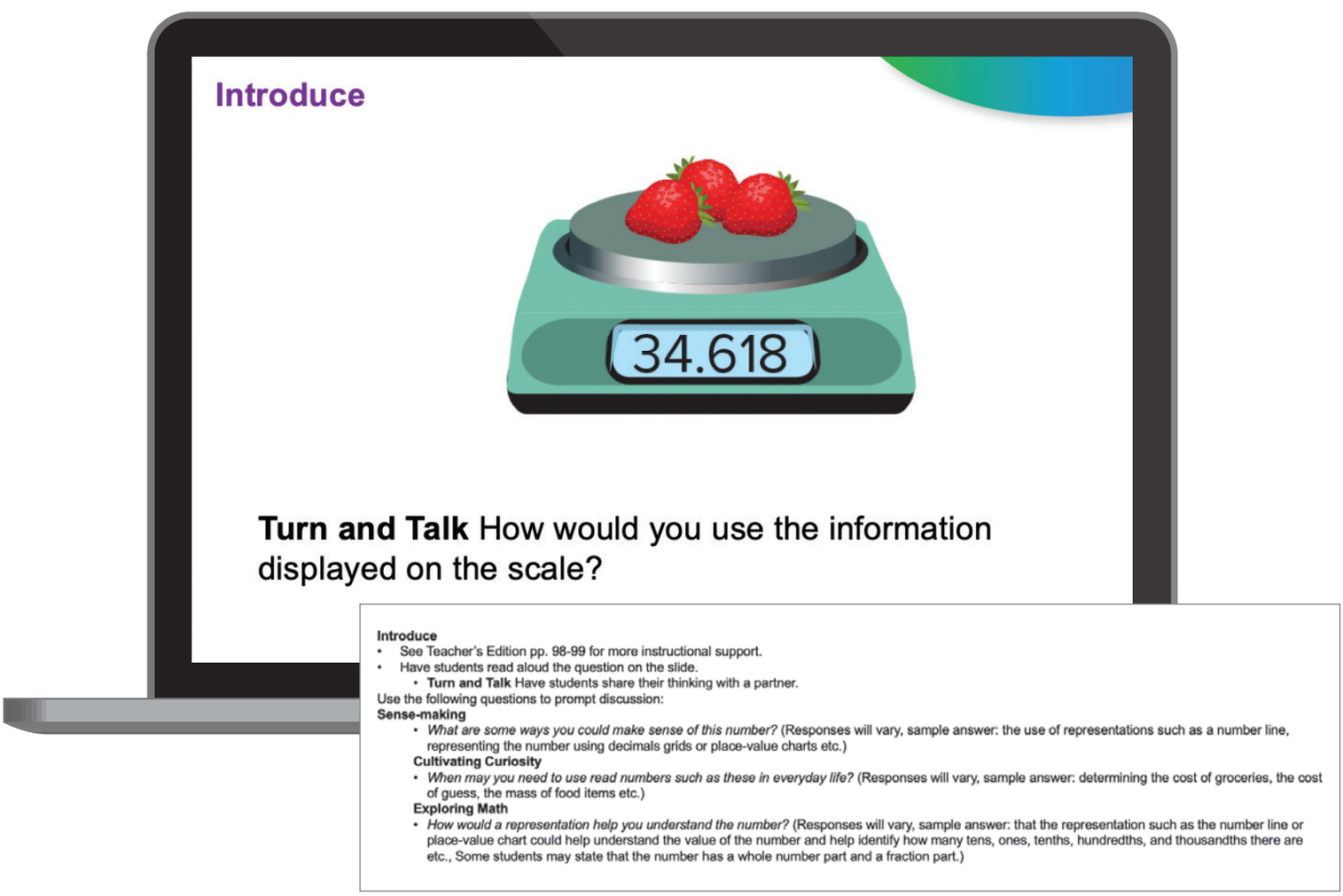


# Embedded Teacher Support

*California Reveal Math®* supports teachers as they facilitate student learning by giving them the tools they need at point of use.

## Editable Lesson Presentation

Each Lesson Presentation includes instructional routines, discourse structures, and language scaffolds, all aimed at increasing engagement and peer-to-peer collaboration. Point-of-use prompts help facilitate rich classroom discourse and guide next steps in learning.




Throughout the curriculum, *California Reveal Math* provides prompts, suggestions, and recommendations to support teachers as learners, too.

# Curriculum Foundations

In collaboration with McGraw Hill Learning Scientists, our expert advisory team and authorship designed *California Reveal Math* around proven classroom practices and rigorous academic research.

**Annie Fetter**
Mathematical Curiosity

**Linda Gojak, M.Ed.**
Reflective Teaching and Rich Tasks

**Georgina Rivera, M.Ed.**
Supporting Multilingual Learners

**John SanGiovanni, M.Ed.**
Mathematical Practices and Habits of Mind

**Cathy Seeley, Ed.D.**
Student-Centered Classroom

**Raj Shah, Ph.D.**
Inquiry and Productive Struggle

**Nicki Newton, Ed.D.**
Student Engagement

**Cheryl Tobey, M.Ed.**
Formative Assessment

**Sarah Bush, Ph.D.**
Equitable Teaching and Cultural Relevance

**Christa Jackson, Ph.D.**
Diverse Cultural Perspectives

**George Roy, Ph.D.**
Positive Mathematical Identity

**Susie Katt, M.Ed.**
Equity and Access

**Ralph Connelly, Ph.D.**
Home-to-School Connections

**Sharon Griffin, Ph.D.**
Number Sense

**Ruth Harbin Miles, Ed.S.**
Teacher Education

**Jeff Shih, Ph.D.**
Student Achievement

**Dinah Zike, M.Ed.**
Visual-Kinesthetic Learning

# Professional Learning

Self-paced, on-demand online professional learning resources included within *California Reveal Math* ensure teachers and administrators have the instructional and pedagogical support to plan efficiently and continue to build effective teaching practices.

The **Professional Learning Overview** provides a high-level guide for teachers and administrators to know what resources are available, where to find them, and how to use them.

**Unit Introductions** highlight the content within each unit, as well as connections to the Big Ideas and planning support.

**Expert Insight Videos** provide an overview of the lesson concepts along with teaching tips and insights on lesson implementation.

**Instructional Videos** showcase key features of the curriculum and provide implementation recommendations.

**Data and Personalization** support provides deeper insights into the reporting generated by *California Reveal Math* and how to differentiate instruction accordingly.

# California Reveal MATH®


Scan the QR code or visit **mhecalifornia.com/reveal** to learn more, explore resources, and try the digital program.

Mc Graw Hill

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