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GREAT MINDS™

EUREKA MATH²®

Getting Started Guide

Level Prekindergarten Module 1

Getting *Started*

This Getting Started Guide provides contextual information as you review *Eureka Math²®*. Follow along as we explore the contents of the *Teach*, *Learn*, and *Apply* books. The guide also highlights some **key components of the digital experience** that are seamlessly integrated into *Eureka Math²*.

Exponentially *More*

Eureka Math® revolutionized math teaching in the United States. The curriculum has helped students understand the why behind the math, not just the how. It has become the most widely used K–5 math curriculum in the country—so why would we change it? Because we listened to feedback from our dedicated team of *Eureka Math* teachers throughout the country and studied the findings of current educational research. Armed with this knowledge, we decided to expand the accessibility and efficacy of our materials so that even more students can achieve greatness in math.

Eureka Math² is exponentially more efficient. Exponentially more engaging. Exponentially more accessible. And this adds up to exponentially more knowledge and joy for students and teachers alike.

Teachability² + Engagement² + Accessibility² = Joy²

Thinking and Talking *About Math*

The teacher–writers who crafted *Eureka Math²* realize the value of student discourse. Starting in prekindergarten, *Eureka Math²* students engage with the teacher and one another to make their thinking visible. Students work and play in pairs and groups as they engage in various instructional routines and participate in whole class discussions to explore mathematical ideas.

Thinking and talking about math helps students develop a deeper understanding of the topics they learn. These activities are key factors in creating an equitable classroom culture— and in helping students find the joy in mathematics.

How Students *Build Knowledge*

Eureka Math² is organized into three coherent stories that build from year to year: *A Story of Units®* for Grade Levels PK–5, *A Story of Ratios®* for Grade Levels 6–8, and *A Story of Functions®* for Grade Levels 9–12.

Each grade level is organized into six modules. Within each module, related lessons are organized into topics. As we walk through the components of the Prekindergarten (PK) curriculum, you'll notice differences in meeting the needs of our youngest students, including the following:

- The number of days a student may attend class in a typical week.
- The amount of time a student spends in PK could be a few months to a few years.
- The daily structure of different PK schools, including how much time is dedicated to a chosen curriculum.

For these reasons, we have made the *Eureka Math²* PK curriculum as flexible as possible to fit the unique needs of a four-year-old learner. These needs include the following:

- Short periods of attention
- Need for physical engagement
- Playful experiences

A closer look at the module map reveals that the major work of the grade level is delivered earlier in the school year. This allows students to have ample opportunities to establish strong foundational knowledge. In addition, *Eureka Math²* reinforces this knowledge later in the year by connecting supporting content to major grade-level work and providing students with real-world context. In addition, Module 6 contains a list of three optional project-based lessons that can be interspersed throughout the year. While not required, these engaging, interactive projects allow students to use math concepts in a real-world context in a collaborative and playful way.

Implement with Fidelity and *Confidence*

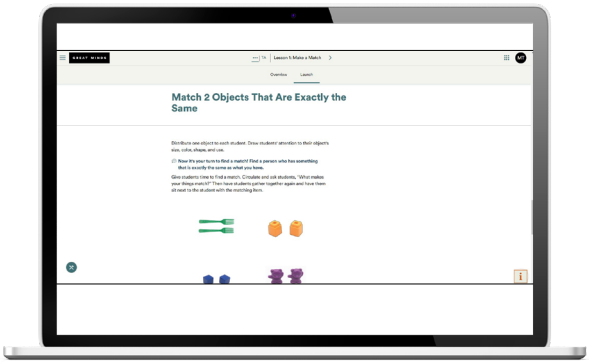
The same team of teacher–writers who crafted *Eureka Math²* also developed an Implementation Guide to help educators bring the curriculum into their classrooms. The guide provides a detailed map of the resources built into the curriculum and offers advice on preparing to teach each module. **Access the full Prekindergarten Implementation Guide.**

Below we'll highlight some of the information covered in the Implementation Guide to help you explore *Eureka Math²* Level PK.

An Intentional and Meaningful Integration *of Digital Learning*

The *Eureka Math²* writers strategically integrated digital components with PK–5 lessons so that technology enhances instruction without the need for individual student devices. The curriculum's digital platform includes teacher facilitation slides that display lesson visuals such as mathematical representations, images, videos, or digital interactives. Students also participate in a teacher-led class demo with interactive tools on the Great Minds® Digital Platform to visualize various mathematical models.

Every module includes at least one context video that shows an application of the module's math in real-life scenarios. Each video in our *Eureka Math²* digital experience has been crafted with special care to ensure the representation of students from different backgrounds and abilities. Within PK, these videos are often in the format of fun and engaging songs that help students visualize and reinforce the math concept the students are learning.



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Bringing Fine Art *into Math*

Among all math curricula, *Eureka Math²* is unique in its integration of fine art. The cover of each module features an impressive work of fine art that is visually or conceptually connected to the math. Level PK features *Panel 58 from The Migration Series* by American artist Jacob Lawrence (1940–1941), and a note on the inside cover helps teachers explain how the artwork is connected to the math they will learn.

A Map to the *Learning*

Every *Teach* book begins with an Overview. In Level PK Module 1, the Overview begins on page 2. The Overview pages note any previous knowledge students use and build upon in the module, summarize the student learning taking place in each topic in the module, and show where in the curriculum students will next access the module's learning to build new layers of understanding and more complex knowledge.

Following the Overview is the Why section. The Why section gives insight into the decisions made during the writing of the module, helping you understand the underlying structure of the module, the flow of the content, and the coherence of the different parts of the curriculum.

What Does Understanding *Look Like?*

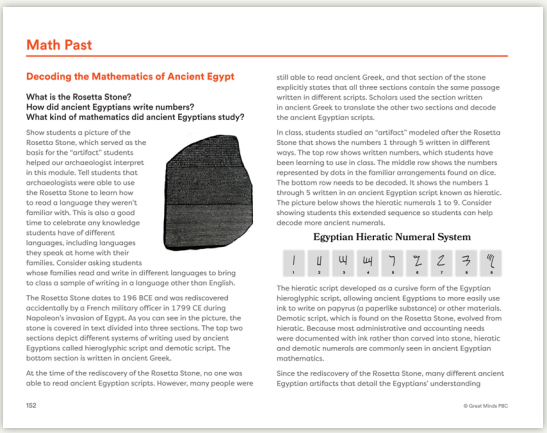
Each topic begins with a Topic Overview that summarizes the development of learning in that topic. It typically includes information about how learning connects to previous or upcoming content.

Topic Overviews begin with Terminology, a section that lists the math terms that will be used within the topic. Next, we include Fluency Anytime activities that are intended to be completed any time of the day. They are simple and require few materials. We also include Math Anytime activities, which give teachers specific suggestions for infusing math throughout the day, such as during share or snack time or on the playground. They include guidance for asking purposeful questions that support the topic's big ideas or key questions. Ultimately, the goal is for students to see that math is all around them and an integral part of their lives.

Beginning on page 10, the *Teach* book highlights the Developmental Progressions (DP) addressed in the module. The Developmental Progressions are standards-aligned descriptions that detail what students should know and be able to do based on instruction they receive. The number of DPs addressed in each module varies depending on the content.

History *of the Math*

Math Past is another way that *Eureka Math*^{2} helps students build knowledge—by telling the history of some of the big ideas that shape the mathematics in the module. Math Past frames mathematics as a human endeavor by telling the story of the discipline through artifacts, discoveries, and other contributions from cultures around the world. Math Past provides material that can inform your teaching and offers lesson-specific ideas about engaging students in the history of mathematics. The Math Past summary for Grade Level PK Module 1 begins on page 152 of the *Teach* book.



Math Past

Decoding the Mathematics of Ancient Egypt

What is the Rosetta Stone?
How did ancient Egyptians write numbers?
What kind of mathematics did ancient Egyptians study?

Show students a picture of the Rosetta Stone, which served as the basis for the "artifact" students helped our archaeologist interpret in this module. Tell students that archaeologists were able to use the Rosetta Stone to learn how to read a language they weren't familiar with. This is also a good time to celebrate any knowledge students have of different languages, including languages they speak at home with their families. Consider asking students whose families read and write in different languages to bring to class a sample of writing in a language other than English.

The Rosetta Stone dates to 196 BCE and was rediscovered accidentally by a French military officer in 1799 CE during Napoleon's invasion of Egypt. As you can see in the picture, the stone is covered in text divided into three sections. The top two sections depict different systems of writing used by ancient Egyptians called hieroglyphic script and demotic script. The bottom section is written in ancient Greek.

At the time of the rediscovery of the Rosetta Stone, no one was able to read ancient Egyptian scripts. However, many people were still able to read ancient Greek, and that section of the stone explicitly states that all three sections contain the same passage written in different scripts. Scholars used the section written in ancient Greek to translate the other two sections and decode the ancient Egyptian scripts.

In class, students studied an "artifact" modeled after the Rosetta Stone that shows the numbers 1 through 5 written in different ways. The top row shows written numbers, which students have been learning to use in class. The middle row shows the numbers represented by dots in the familiar arrangements found on dice. The bottom row needs to be decoded. It shows the numbers 1 through 5 written in an ancient Egyptian script known as hieratic. The picture below shows the hieratic numerals 1 to 9. Consider showing students this extended sequence so students can help decode more ancient numerals.

Egyptian Hieratic Numeral System

The hieratic script developed as a cursive form of the Egyptian hieroglyphic script, allowing ancient Egyptians to more easily use ink to write on papyrus (a paperlike substance) or other materials. Demotic script, which is found on the Rosetta Stone, evolved from hieratic. Because most administrative and accounting needs were documented with ink rather than carved into stone, hieratic and demotic numerals are commonly seen in ancient Egyptian mathematics.

Since the rediscovery of the Rosetta Stone, many different ancient Egyptian artifacts that detail the Egyptians' understanding

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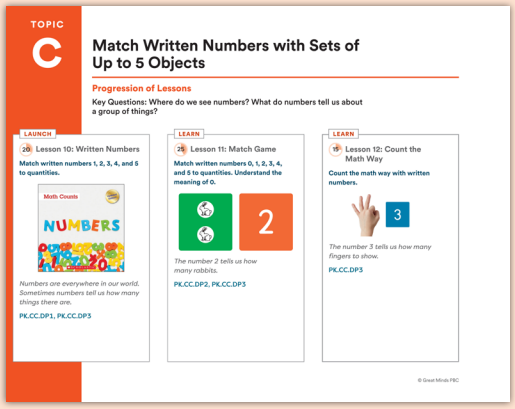
Dive into a *Topic*

It's time to dive into a topic to better understand the *Eureka Math²* learning design. On page 46 in Level PK Module 1, we begin Topic C: Match Written Numbers with Sets of up to 5 Objects. Every topic begins with an overview summarizing the knowledge students will build as they engage with the upcoming content. In the Topic C Overview, teachers can see that written numbers are the main focus of learning. This topic begins by inviting all students to name the written numbers 0 through 5. Naming is only the first step in working with written numbers. Students will also need to match each number to the quantity it represents.

Teachers can also see how this learning will continue in the topic. Due to the shorter length of PK lessons, the agenda, materials, and preparation sections for all lessons in a topic have been combined and placed in the topic overview. This can be seen on page 51.



Lesson Structure *and Support*

Similar to the other *Eureka Math²* grade levels, the PK modules organize lessons into three core sections to provide teachers with a clear plan for multiple days of learning.

- **Launch** creates an accessible entry point to the day's learning with activities that build context and create productive struggle, which helps build new knowledge.
- **Learn** presents new math concepts related to the lesson objective, usually through a series of instructional segments and routines.
- **Land** provides time for teachers to facilitate a brief closing discussion and for students to reinforce the learning.

The way fluency is treated varies slightly in PK when compared to other grade levels as they have been designed with more flexibility to accommodate young learners.

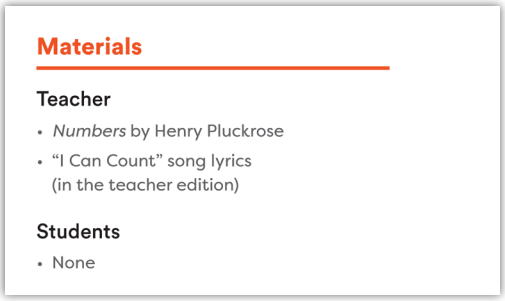
In PK, you will find fluency built into the day in three ways:

- Fluency Anytime activities relate to the entire topic. Teachers can use the activities throughout the day.
- An entire lesson may be dedicated to one fluency activity.
- Fluency embedded as part of a lesson (meeting the just-in-time instruction).

Throughout the lesson, point-of-use margin notes provide teachers with information about facilitation, differentiation, and coherence.

Dive into the *Learning Routines*

Eureka Math^2 lessons are designed as learning routines that let students drive the learning through sharing their thinking and work. The lesson overview on page 54 helps teachers prepare to teach Lesson 10.



Materials

Teacher

- *Numbers* by Henry Pluckrose
- "I Can Count" song lyrics (in the teacher edition)

Students

- None

Page 54 outlines the learning agenda, the materials list, and lesson preparation notes. These are all shared up front to help teachers feel organized and ready for the lesson. Keep in mind that the core structure of launch, learn, and land may take several days to account for the shorter attention spans of younger learners and to provide teachers with greater scheduling flexibility.

During Lesson 10, the Launch exercise begins on page 54 and opens with an embedded core text to achieve a multidisciplinary approach. The text introduces contexts for students to make real-world connections with the math they are learning. Teachers will read the core text to the students, who will then respond to open-ended questions about what numbers they recognized from the story. Students then bridge into a context video in the form of a song entitled "I Can Count" where they watch the video and sing along. The teachers will then ask students to notice and wonder about the pictures in the song as they make connections between the idea of quantities and written numbers. A teacher can prepare an anchor chart to accompany the video interactive to reinforce student learning.

The Learn and Land portions of this learning routine occur in future lessons: Lessons 11–14 (Launch) pages 58–67 and Land on page 68.

As students get more confident, they're invited to try different strategies. Before students begin this work, teachers should review the teacher margin note provided on page 54 which offers specific classroom management strategies for focusing student discourse on topics that are relevant to math. Margin notes in later lessons will include differentiation ideas for students who need additional support or enrichment.

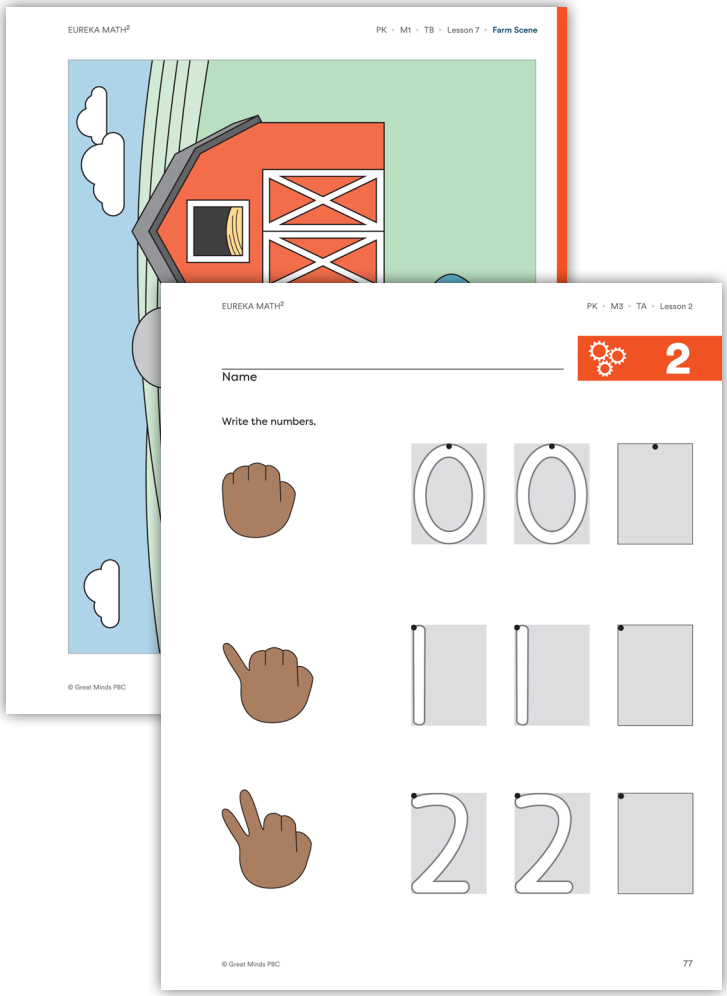
Teacher Note

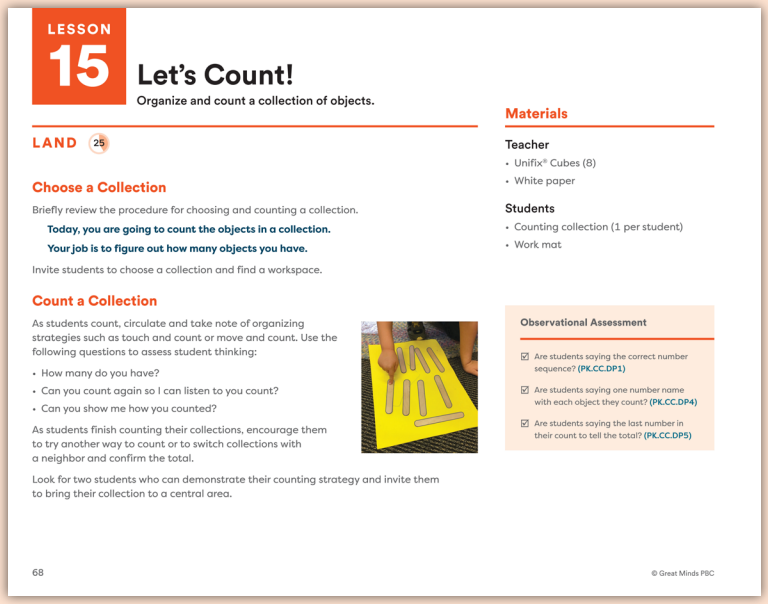
This type of open-ended group discussion is an opportunity to teach prekindergarten students what is mathematically relevant and what is not. Gently rein in their responses, especially personal stories, when they do not fit the math discussion.

The Student Experience: *Learn*

Learn is students' companion text to the instruction covered in *Teach*. It contains all the pages students need for each lesson. There is one *Learn* book for the entire PK program (all six modules). On page 19 of the *Learn* book, students see a Family Math letter that focuses on the main learning of Topic C and all the associated lessons. In later pages of the *Learn* book, teachers may notice the gears icon in the top corner of the page. This icon is used to indicate a Problem Set section. Other icons that may appear in lessons include a magnifying glass, which indicates a lesson page that students use during the guided or directed portion of the lesson.

Let's look at readability. One may notice that the student materials are intentionally designed to be readable by young students while maintaining the rigor you've come to expect from Great Minds curricula. We have reduced wordiness—eliminating unnecessary wording entirely— and we have been intentional in our language choices and sentence length. The Grade Levels PK–2 *Learn* books use visuals paired with words that may still be beyond a student's decoding ability, and teacher-read directions appear in a smaller font.




LESSON 15

Let's Count!

Organize and count a collection of objects.

LAND 25

Choose a Collection

Briefly review the procedure for choosing and counting a collection.

Today, you are going to count the objects in a collection.

Your job is to figure out how many objects you have.

Invite students to choose a collection and find a workspace.

Count a Collection

As students count, circulate and take note of organizing strategies such as touch and count or move and count. Use the following questions to assess student thinking:

- How many do you have?
- Can you count again so I can listen to you count?
- Can you show me how you counted?

As students finish counting their collections, encourage them to try another way to count or to switch collections with a neighbor and confirm the total.

Look for two students who can demonstrate their counting strategy and invite them to bring their collection to a central area.

Materials

Teacher

- Unifix® Cubes (8)
- White paper

Students

- Counting collection (1 per student)
- Work mat

Observational Assessment

- ☑ Are students saying the correct number sequence? (PK.CC.DP1)
- ☑ Are students saying one number name with each object they count? (PK.CC.DP4)
- ☑ Are students saying the last number in their count to tell the total? (PK.CC.DP5)

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After students work in various lessons and math activities over a few days, the class comes together for a final activity that will be the Land portion of this lesson series. In PK Module 1, Land occurs in Lesson 15 on page 68 of the *Teach* book. The teacher facilitates an activity and discussion using the suggested questions related to sorting objects into two or more groups.

Continued Practice *at Home*

As previously mentioned, the Family Math letter is also included in *Learn* for Grade Level PK. It is a letter to families describing the current topic's major concepts. The letter uses words and phrases that students should recognize from their class lessons. It also includes visual supports students can use to explain concepts and strategies to their family. The at-home activities provide ideas for how families can practice the module's math concepts with their students.

Module 1
Topic C

FAMILY MATH

Match Written Numbers with Sets of Up to 5 Objects

Dear Family,

Students learn to recognize and name numbers 0 through 5. They match each number to a group of objects. For example, a student might match 4 blocks with the written number 4. Students learn that zero means none, and they match the written number 0 with no objects.

Word We Are Learning

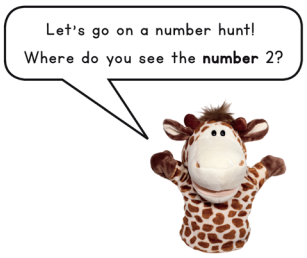
number

Both cards show the same number.

At-Home Activities

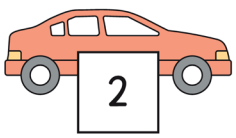
Number Hunt

Consider reading the book *We're Going on a Bear Hunt* by Michael Rosen with your child to introduce the number hunt. You might point out numbers, such as 2 on a clock, or groups of 2 items, such as 2 shoes. Try hunting for numbers 0 through 5. The goal is for children to see that numbers are all around them.



Play Store

Set up a pretend store by using the number cards (included in this letter) as price tags for household items. For now, keep the prices between 1 and 5 pennies. Invite your child to count out pennies as they "buy" items from the store. Consider changing roles and asking your child to count to make sure you gave them the correct amount.



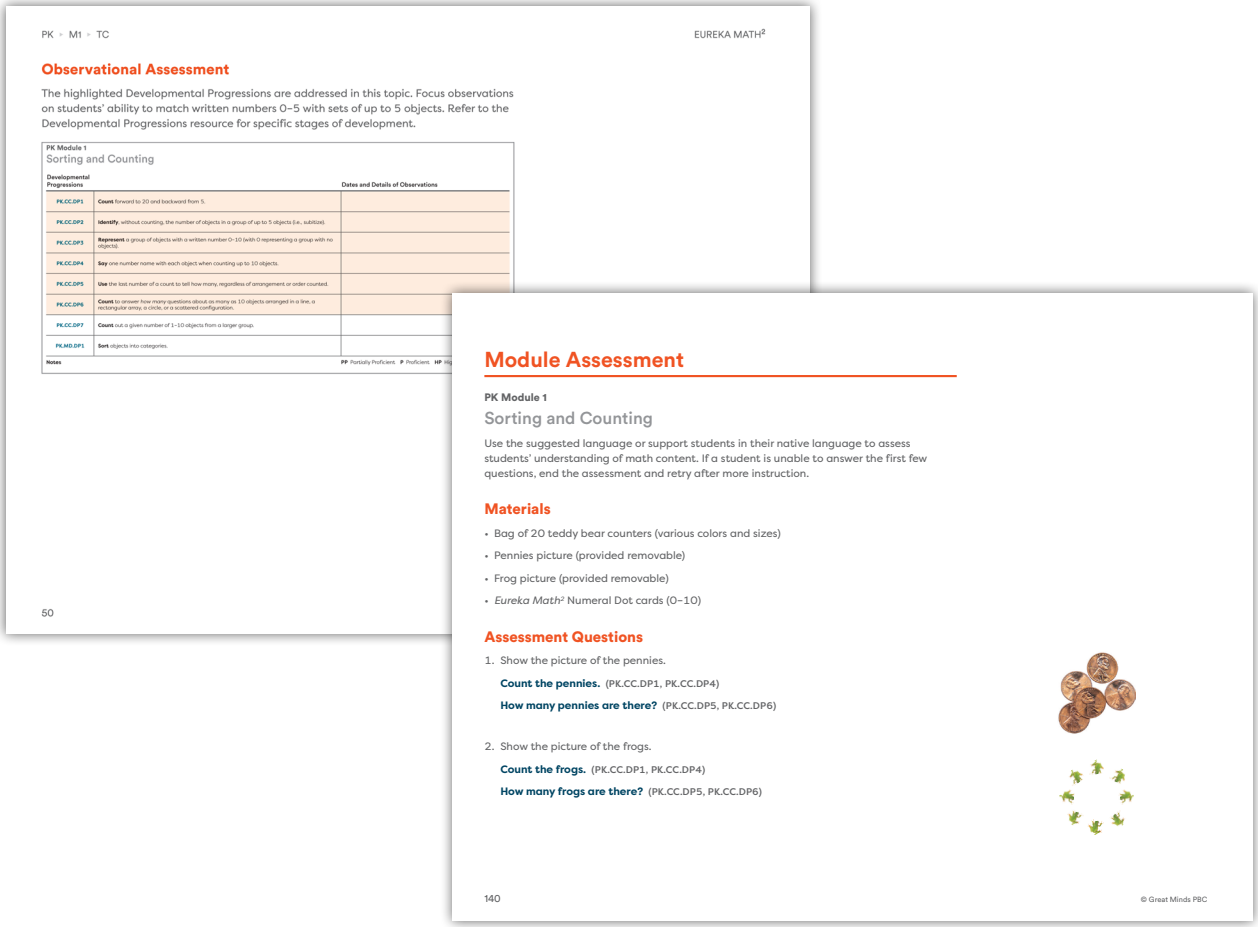
Assessment with *Eureka Math²*

The assessment system in PK helps you understand student learning by generating data from many perspectives. The system includes two components:

- Every module in PK has an Observational Assessment Recording Sheet that includes short checklists that summarize the module's Developmental Progressions and Developmental Indicators. On each recording sheet, teachers note student performance demonstrating that students are building the intended knowledge and skills from the lesson. Observations from student work can also be captured on this sheet.
- Module Assessments consist of three to five interview-style items that assess proficiency with the major concepts, skills, and applications taught in the module. Module Assessments cover the most important content but may not assess all the strategies and standards taught in the module. Teachers give this assessment when the notes they've taken in the Observational Assessment Recording Sheet suggest that a student has shown inconsistent proficiency throughout a module. Module Assessments provide suggested language for the interview-style items.

All Grade Level PK assessment resources appear in the Resources section beginning on page 140 of the *Teach* book.

Click to review the *Eureka Math²* assessments on the Great Minds Digital Platform.



PK • M1 • TC

EUREKA MATH²

Observational Assessment

The highlighted Developmental Progressions are addressed in this topic. Focus observations on students' ability to match written numbers 0–5 with sets of up to 5 objects. Refer to the Developmental Progressions resource for specific stages of development.

PK Module 1
Sorting and Counting

Developmental Progressions		Dates and Details of Observations
PK.CC.DP1	**Count** forward to 20 and backward from 5.	
PK.CC.DP2	**Identify**, without counting, the number of objects in a group of up to 5 objects (i.e., subitize).	
PK.CC.DP3	**Represent** a group of objects with a written number 0–10 (with 0 representing a group with no objects).	
PK.CC.DP4	**Say** one number name with each object when counting up to 10 objects.	
PK.CC.DP5	**Use** the last number of a count to tell how many, regardless of arrangement or order counted.	
PK.CC.DP6	**Count** to answer how many questions about as many as 10 objects arranged in a line, a rectangular array, a circle, or a scattered configuration.	
PK.CC.DP7	**Count** out a given number of 1–10 objects from a larger group.	
PK.MD.DP1	**Sort** objects into categories.	

Notes

PP Partially Proficient **P** Proficient **HP** Hig

50

Module Assessment

PK Module 1
Sorting and Counting

Use the suggested language or support students in their native language to assess students' understanding of math content. If a student is unable to answer the first few questions, end the assessment and retry after more instruction.

Materials

- Bag of 20 teddy bear counters (various colors and sizes)
- Pennies picture (provided removable)
- Frog picture (provided removable)
- *Eureka Math²* Numeral Dot cards (0–10)

Assessment Questions

1. Show the picture of the pennies.
   Count the pennies. (PK.CC.DP1, PK.CC.DP4)
   How many pennies are there? (PK.CC.DP5, PK.CC.DP6)

2. Show the picture of the frogs.
   Count the frogs. (PK.CC.DP1, PK.CC.DP4)
   How many frogs are there? (PK.CC.DP5, PK.CC.DP6)

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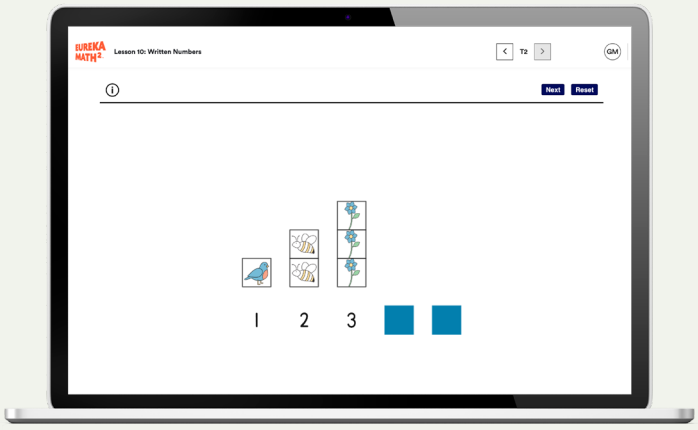
Raising the Bar to the *Second Power*

In the world of math curricula, *Eureka Math²* stands alone. Our curriculum invites student discourse, provides accessibility, and advances equity. Its combination of digital and print resources helps all students build a strong foundation of mathematical knowledge that they will build upon, module after module and year after year.

Please contact your Great Minds representative for access to the digital components of *Eureka Math²*.



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