



Access the Great Minds Digital Platform to review *Eureka Math*² assessments, digital interactives, context videos, and more.

GREAT
MINDS



**EUREKA
MATH²**

Getting Started Guide
Level 4 Module 1

Getting Started

This Getting Started Guide provides contextual information as you review *Eureka Math*². 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 Math*².

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 Math*² 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.



$$\text{Teachability}^2 + \text{Engagement}^2 + \text{Accessibility}^2 = \text{Joy}^2$$

Thinking and Talking *About Math*

The teacher-writers who crafted *Eureka Math*² realize the value of student discourse. Starting in kindergarten, *Eureka Math*² students engage with the teacher and with one another to make their thinking visible. Students work in pairs and in groups as they engage in a variety of instructional routines and participate in whole class discussions to explore mathematical ideas. The Talking Tool, detailed on the inside cover of every *Learn* book, provides sentence frames and sentence starters to help guide student discourse.

Similar to the Talking Tool, the Thinking Tool, on the inside back cover of the *Learn* book, is a scaffold to support students in developing and applying metacognitive skills. It provides a set of questions students can ask themselves before, during, and after engaging in a task.

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 Math*² is organized into three coherent stories that build from year to year: *A Story of Units*[®] for Grade Levels K–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.

A close 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. *Eureka Math*² reinforces this knowledge later in the year by connecting supporting content to major grade-level work and providing students with real-world context.

Talking Tool	
I Can Share My Thinking 	My drawing shows I did it this way because I think _____ because
I Can Agree or Disagree 	I agree because I disagree because I did it a different way. I
I Can Ask Questions 	How did you . . . ? Why did you . . . ? Can you explain . . . ?
I Can Say It Again 	I heard you say _____ said Can you say it another way?

EUREKA MATH²

Implement with Fidelity and *Confidence*

The same team of teacher-writers who crafted *Eureka Math*² 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 how to prepare to teach each module. [Access the full Grade Levels 3–5 Implementation Guide.](#)

Below we'll highlight some of the information covered in the Implementation Guide to help you explore *Eureka Math*² Level 4 Module 1.

An Intentional and Meaningful Integration of *Digital Learning*

The *Eureka Math*² writers strategically integrated digital components with K–5 lessons so that technology enhances instruction without the need for individual student devices. *Eureka Math*² Equip™, a companion product to *Eureka Math*², is a digital diagnostic tool that offers a Pre-Module Assessment for every student. It identifies learning gaps and provides teachers with content tailored to address those gaps so that all students can access grade-level content. 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.

When students have their own devices, they can access the *Learn* book content and complete assignments digitally.

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 Math*² digital experience has been crafted with special care to ensure representation of students from different backgrounds and abilities. These videos do not include spoken words because we want to make them accessible to multilingual learners and striving readers and keep the focus on the math story instead of the dialogue. You can access the video for this lesson on the webpage where you accessed this guide.

[Access the Great Minds Digital Platform](#) to review *Eureka Math*² assessments, digital interactives, context videos, and more.

Bringing Fine Art *into Math*

Among all math curricula, *Eureka Math*² 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 4 Module 1 features the painting *Tahkt-I-Sulayman Variation II* by Frank Stella, and a note on the inside cover helps students understand 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 4 Module 1, the Overview begins on page 2. The Overview notes any previous knowledge students use and build upon in the module, summarizes the student learning taking place on each topic in the module, and shows 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*?

Beginning on page 10, the *Teach* book highlights the Achievement Descriptors addressed in the module. Achievement Descriptors are clear, concise, standards-aligned descriptions that detail what students should know and be able to do based on the instruction. The first page of each lesson identifies the Achievement Descriptors aligned with that lesson. Proficiency Indicators for each Achievement Descriptor support teachers with interpreting student work in the module. The Proficiency Indicators begin on page 508 in the Level 4 Module 1 *Teach* book.

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 how to engage students in the history of mathematics. The Math Past summary for Level 4 Module 1 appears on page 522.

Math Past


Egyptian Hieroglyphic Numerals

How did the ancient Egyptians represent numbers? Did they use a place value system like we do? How do hieroglyphic numerals compare to our modern number system?


Are your students ready to meet the Egyptian hieroglyphic numerals? The Egyptians used symbols of familiar objects to represent numbers.

1	10	100	1,000	10,000	100,000	1,000,000
---	----	-----	-------	--------	---------	-----------

The Egyptian numeral 1 is a stroke. It looks just like our 1.



1 is a cattle hobble. Don't kick me, cow!



1 is a rope coil. Don't tangle it up!

1 is a beautiful lotus flower.

1 is a bent finger. Does yours look like that, too?

1 is a polliwog. It's almost a frog!

1 is an astonished man!

One million is almost incomprehensible to him! Egyptians also used this symbol to represent their god Heh.

We seem to have skipped over a lot of numerals! What are the Egyptian hieroglyphic numerals for 2, 3, 4, and so on? Well... once the Egyptians decided to use a stroke for 1, they just followed the pattern for repeating the symbol as shown.

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

522

Copyright © Great Minds[®] PBC

Dive into a *Topic*

It's time to dive into a topic to better understand the *Eureka Math*² learning design. On page 95 in Level 4 Module 1, we begin Topic B: Place Value and Comparison within 1,000,000. Every topic begins with an overview that summarizes the development expected as students engage with the upcoming content. In the Topic B overview, the teacher can see that students will name and compare numbers up to 1,000,000 in different forms, recognizing the multiplicative relationship between place value and units. The teacher can also see how this learning will continue in the topic.


The topic also includes a Progression of Lessons list on page 96. This list shows sample content from each lesson along with a student-friendly statement about the major learning.

4 • M1 • TB

EUREKA MATH²

Progression of Lessons

Lesson 5
Organize, count, and represent a collection of objects.



I can use what I already know about place value to help me count a collection with values greater than 1 thousand. I can group like units, bundle groups of 10, and use a place value chart to organize the groups. Patterns in place value units help me name ten thousands, hundred thousands, and millions.

Lesson 6
Demonstrate that a digit represents 10 times the value of what it represents in the place to its right.

hundreds	tens	ones
9	9	9

I can describe the relationship between two place value units by using times as much. For example, 1 ten is 10 times as much as 1 one. That helps me see that the value of a digit in one place on the place value chart is 10 times as much as the value of the digit if it were in the place to its right. I can represent the relationship by using a place value chart.

Lesson 7
Write numbers to 1,000,000 in unit form and expanded form by using place value structure.

\$11,880

$$800,000 + 20,000 + 1,000 + 800 + 80$$
$$(8 \times 100,000) + (2 \times 10,000) + (1 \times 1,000) + (8 \times 100) + (8 \times 10)$$

I can represent numbers by using place value disks and arranging them in columns. The arrangement of the disks helps me express numbers in unit form and in expanded form and helps me see the value of each digit. I can name place value units in a number up to 1,000,000.

96

Copyright © Great Minds. PSC

Lesson Structure *and Support*

Every Grade Level K–5 *Eureka Math*² lesson is organized into four sections, providing the teacher with a clear lesson plan for the day's learning.

- **Fluency** opens each lesson and provides distributed practice with previously learned material. This practice prepares students for new learning by activating prior knowledge and bridging small learning gaps.
- **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.
- **Land** provides time for teachers to facilitate a brief closing discussion and for students to complete the Exit Ticket.

Throughout the lesson, margin notes provide information about facilitation, differentiation, and coherence. The curriculum has six types of margin notes: Teacher Notes, Universal Design for Learning, Language Support, Differentiation, Promoting the Standards for Mathematical Practice, and Math Past.

Dive into a *Lesson*

The lesson overview on page 160 helps teachers prepare to teach Lesson 7.

- The **Lesson at a Glance** is a snapshot of the lesson framed through what students should know, understand, and do while engaging with the lesson.
- The **Key Question** helps focus instruction and classroom discourse.
- The **Achievement Descriptors** appear again, this time mapping what students should know and be able to do based on the instruction of the specific lesson to the standards covered.
- An image of the **Exit Ticket** from the end of the lesson shows what this formative assessment includes.

Finally, page 161 lays out the learning agenda as well as the materials list and lesson preparation notes. These are all shared up front to help teachers feel organized and ready for the lesson from the start.

During the Lesson 7 Fluency exercise on page 163, students construct a number line with their fingers while counting aloud and model compositions to develop fluency with counting within 1,000,000. Then they engage in a whiteboard exchange to write the standard form of a two- or three-digit number given in unit form. Over the course of the other lessons in this topic, students become fluent representing numbers in various forms.

In Launch, students participate in a choral count routine and use place value language to describe patterns in the count. Page 166 includes a margin note that suggests sentence frames teachers can use to support students as they notice mathematical patterns.

After representing numbers by using place value disks and place value charts and then writing the numbers in unit form, students engage in the Five Framing Questions routine to compare two ways to write numbers in expanded form. Students then turn to their *Learn* books to work on a Problem Set. Before students begin this work, teachers should note the guidance provided on page 174 and that the problems students will work through have been organized from simple to complex.

Teacher Note

Consider asking students additional questions about their counting processes and strategies.

- How do the patterns help you figure out what number comes next?
- Is there another strategy for finding the next number?
- Is there someone who changed their mind about what number would come next? Explain your thinking to the class.

Language Support

Consider providing sentence frames or starters such as the following to support students as they notice patterns in the count.

- I notice the digit in the thousands place _____.
- I notice the numbers in each column _____.
- I notice that the first number in each column _____.

The Student Experience:

Learn

On page 63 of the *Learn* book, students begin the Problem Set for Lesson 7. 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 and a ticket with a check mark. The magnifying glass indicates a lesson page that students use during the guided or directed portion of the lesson, and a ticket with a check mark indicates that the page is the Exit Ticket for the lesson.

Let's look at readability. You will notice that the student materials are intentionally designed to be readable by young students while maintaining the rigor that 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.

EUREKA MATH² 4 • M1 • TB • Lesson 7

Name _____ Date _____

Count the number of place value disks in each column of the chart.
Write the number at the bottom of the column.
Then fill in the blanks to write the unit form of the number represented in the chart.
The first one has been started for you.

1.

(000)	(00)	(0)	(1)
(000)	(00)	(0)	(1)
(000)	(00)	(0)	(1)
(000)	(00)	(0)	(1)

3 2 5 3

_____ thousands _____ hundreds _____ tens

2.

(0000)	(000)	(00)	(0)
(0000)	(000)	(00)	(0)
(0000)	(000)	(00)	(0)
(0000)	(000)	(00)	(0)

_____ ten thousands _____ thousands

Copyright © Great Minds PBC

EUREKA MATH² 4 • M1 • TB • Lesson 6

Name _____ Date _____

Draw and record 10 times as much.

1.

ten thousands	thousands	hundreds	tens	ones
10 × 1 thousand = _____	10 × 1 hundred = _____	10 × 1 ten = _____	10 × 1 one = _____	
10 × 1,000 = _____	10 × 100 = _____	10 × 10 = _____	10 × 1 = _____	

2.

ten thousands	thousands	hundreds	tens	ones
10 × 2 thousands = _____	10 × 2 hundreds = _____	10 × 2 tens = _____	10 × 2 ones = _____	
10 × 2,000 = _____	10 × 200 = _____	10 × 20 = _____	10 × 2 = _____	

Copyright © Great Minds PBC

4 • M1 • TB • Lesson 7

EUREKA MATH²

Direct students back to problem 3. Invite them to turn and talk about the expression that starts with 30,000 and why there are only three blanks instead of four. Listen for students to say that there are 0 hundreds and 0 hundreds has a value of 0, which won't change the sum.

0 hundreds has a value of 0. We don't need to include 0 of a unit in expanded form because it doesn't change the value of the number.

Invite students to complete the expression by writing 3,000, 10, and 5 in the blanks. Then invite them to work with a partner to fill in the blanks to express each addend by using multiplication.

Direct students to complete problem 4. Circulate and provide support as needed. Invite students to turn and talk about how expanded form and standard form are similar and different.

Problem Set

Differentiate the set by selecting problems for students to finish independently within the timeframe. Problems are organized from simple to complex.

Land

Debrief 5 min

Objective: Write numbers to 1,000,000 in unit form and expanded form by using place value structure.

Facilitate a discussion that emphasizes place value in large numbers and unit and expanded forms.

What is similar about using place value disks or unit form?

Both show what each digit in a number represents.
They allow us to see the parts that make up a number.

174

Copyright © Great Minds PBC

After students work independently on their Problem Set, the class comes back together for the Land portion of the lesson. For Lesson 7, this section begins on page 174 of the *Teach* book. In this portion of the lesson, the teacher facilitates a discussion by using suggested questions related to the lesson's objectives and guides students to synthesize the day's learning. Following the discussion, students complete the Exit Ticket beginning on page 69 of their *Learn* book. This gives teachers a sense of what students understand so they can help make instructional decisions for the next lesson.

Continued Practice *at Home*

The final book in the module series is *Apply*. The *Apply* book offers students more practice with the concepts learned in class. It has three components that support students in deepening their understanding of the concepts covered in the daily lesson.

- **Family Math** is a letter to families that describes the major concepts in the current topic. The letter uses words and phrases that should be familiar to the students from the class lessons. It also includes visual supports that students can use to explain the concepts or strategies to their family or that can help adults at home understand a concept.
- **Practice** problems interleave and distribute practice, providing students with opportunities to discern and recall which knowledge, concepts, and strategies are appropriate for solving different problems.
- **Practice Partners** provide a unique kind of support. Students work through the thinking of an imagined partner who is solving problems like those in the Practice.

Module 1
Topic 8

FAMILY MATH

Place Value and Comparison within 1,000,000

Dear Family,

In previous grades, your student learned about place value for numbers up to 1,000. Using that knowledge, your student explores counting with large sums of money as a context for understanding large numbers. They learn to read, write, and compare numbers up to 1,000,000. They also connect recent learning about times as much to realize that a digit represents 10 times the value of the same digit in the place to its right. A strong sense of place value understanding helps your student add, subtract, multiply, and divide with large numbers later this year.

Key Terms

- hundred thousand
- million
- ten thousand
- 10 times as much

A place value chart organizes numbers and shows the relationships between place value units.

millions 1,000,000	hundred thousands 100,000	ten thousands 10,000	thousands 1,000	hundreds 100	ten 10	ones 1																				
<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>thousands</th> <th>hundreds</th> <th>tens</th> <th>ones</th> </tr> </thead> <tbody> <tr> <td>56,348</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">$50,000 + 6,000 + 300 + 40 + 8$</td> </tr> <tr> <td colspan="4">fifty-six thousand, three hundred forty-eight</td> </tr> <tr> <td colspan="4">56 thousands 3 hundreds 4 tens 8 ones</td> </tr> </tbody> </table>							thousands	hundreds	tens	ones	56,348				$50,000 + 6,000 + 300 + 40 + 8$				fifty-six thousand, three hundred forty-eight				56 thousands 3 hundreds 4 tens 8 ones			
thousands	hundreds	tens	ones																							
56,348																										
$50,000 + 6,000 + 300 + 40 + 8$																										
fifty-six thousand, three hundred forty-eight																										
56 thousands 3 hundreds 4 tens 8 ones																										

Writing numbers in various forms, such as in standard form, expanded form, word form, and unit form, enables flexible thinking.

10 times as much as 3 tens is 3 hundreds.
 $10 \times 30 = 300$
 3 hundreds
 $300 = 10$

Copyright © Great Minds[®] P12

EUREKA MATH[™] 4 • M1 • TB • Lesson 7

7

Name _____ Date _____

Count the number of place value disks in each column of the chart.
Write the number at the bottom of each column.
Then fill in the blanks to write the unit form of the number represented in the chart.

1.

1 million 3 hundred thousands 0 ten thousands 1 thousand
 5 hundreds 0 tens 2 ones

I count the number of disks in each column. There is 1 million disk, so I write 1 at the bottom of the first column.

I write the other numbers of disks at the bottom of each column.

I express the number shown in the chart in unit form.

Unit form helps me know how many of each place value unit are in a number. It helps me use the correct names for each digit.

Copyright © Great Minds[®] P12

EUREKA MATH[™] 4 • M1 • TB • Lesson 7

7

Name _____ Date _____

Count the number of place value disks in each column of the chart.
Write the number at the bottom of each column.
Then fill in the blanks to write the unit form of the number represented in the chart.

1.

_____ ten thousands _____ thousands _____ hundreds _____ tens _____ ones

Use the numbers on the place value chart to complete the expanded form.

2.

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
	4	6	3	1	0	5

Expanded form: _____ + _____ + _____ + _____ + _____

Fill in the blanks to write the number in expanded form in two ways.

Standard Form	Expanded Form
3. 42,910	_____ + 2,000 + _____ + _____ (4 × _____) + (_____ × 1,000) + (_____ × 100) + (1 × _____)

Copyright © Great Minds[®] P12

Assessment with *Eureka Math*²

The assessment system for Grade Levels 3–5 helps teachers understand student learning by generating data from many perspectives. The system includes three components.

- **Exit Tickets** are formative assessment opportunities that use at least one problem or question to assess whether a student has learned the basic skills and concepts needed for success in upcoming lessons. Items reflect the minimum that students must demonstrate to meet the lesson objective.

Students complete Exit Tickets independently on paper, with directions or problems read aloud as necessary, and they are not graded. Most students with a basic understanding of the math can finish within 3–5 minutes. Generally, teachers should strictly observe this time frame because a student's inability to finish within 5 minutes can be valuable proficiency information.

- **Topic Quizzes** replace the Exit Ticket in the final lesson of each topic, serving as short sets of items that assess proficiency with the major concepts and skills from the topic.
- **Module Assessments** consist of 6–10 items that assess proficiency in the major concepts, skills, and applications taught in the module. Module Assessments represent the most important content, but they may not assess all the strategies and standards taught in the module.

In addition to the assessments above, *Eureka Math*² Equip diagnostic assessments are available for print and digital administration.

[Click to review the *Eureka Math*² assessments](#) on the Great Minds Digital Platform.

EUREKA MATH² 4 • M1 • TB • Topic Quiz B-1

4. Write 504,080 in word form. Write one word from the given answer choices in each blank. Not all answer choices will be used.

Answer Choices

zero	four	five	eight	ten
forty	fifty	eighty	hundred	thousand

5. Look at the number shown.

1 2, 489

Circle an answer choice to make the statement true.

The value of the underlined digit is _____ times as much as the value of the circled digit.

2
10
20
100

Copyright © Great Minds PBC This page may be reproduced for classroom use only. 11

EUREKA MATH² 4 • M1 • Module Assessment 1

Module Assessment Name _____ Date _____

1. Complete the table.

Meters	Centimeters
1	_____
2	_____
4	_____
10	_____
12	_____

2. Look at the number shown.

8, 8 25

Fill in the blank to make the statement true.

The value of the underlined 8 is _____ times as much as the value of the circled 8.

3. Round 453,182 to the given place.

Nearest hundred thousand: _____

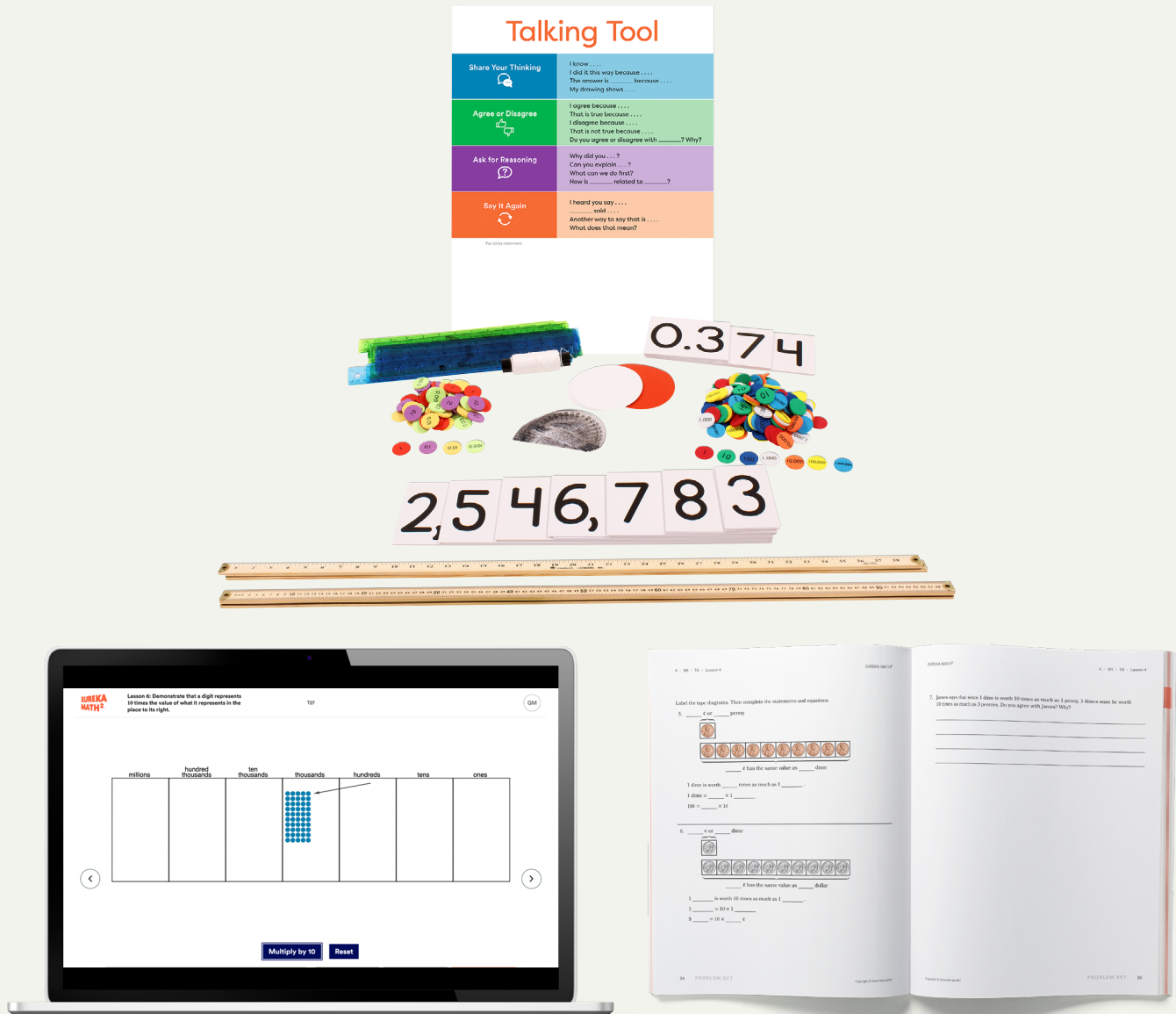
Nearest thousand: _____

Nearest hundred: _____

Copyright © Great Minds PBC This page may be reproduced for classroom use only. 37

Raising the Bar to the *Second Power*

In the world of math curricula, *Eureka Math*² 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.



Access the [Great Minds Digital Platform](#) to review *Eureka Math*² assessments, digital interactives, context videos, and more.