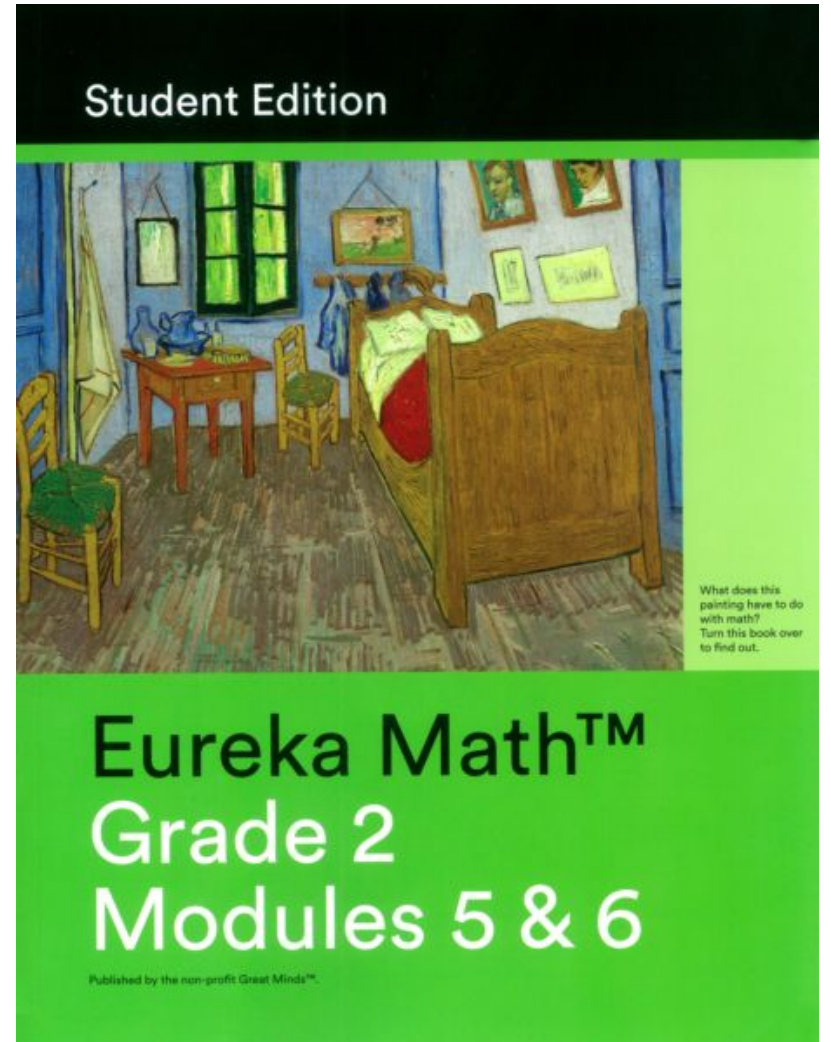


Welcome to Family Math Night

- *Lakeview School*
- *2/13/2019*
- *Jenny Pancake ~ TCEESC*



What is *Eureka Math*?



[Introducing Eureka Math-HD](#)

Eureka Math is...

Aligned

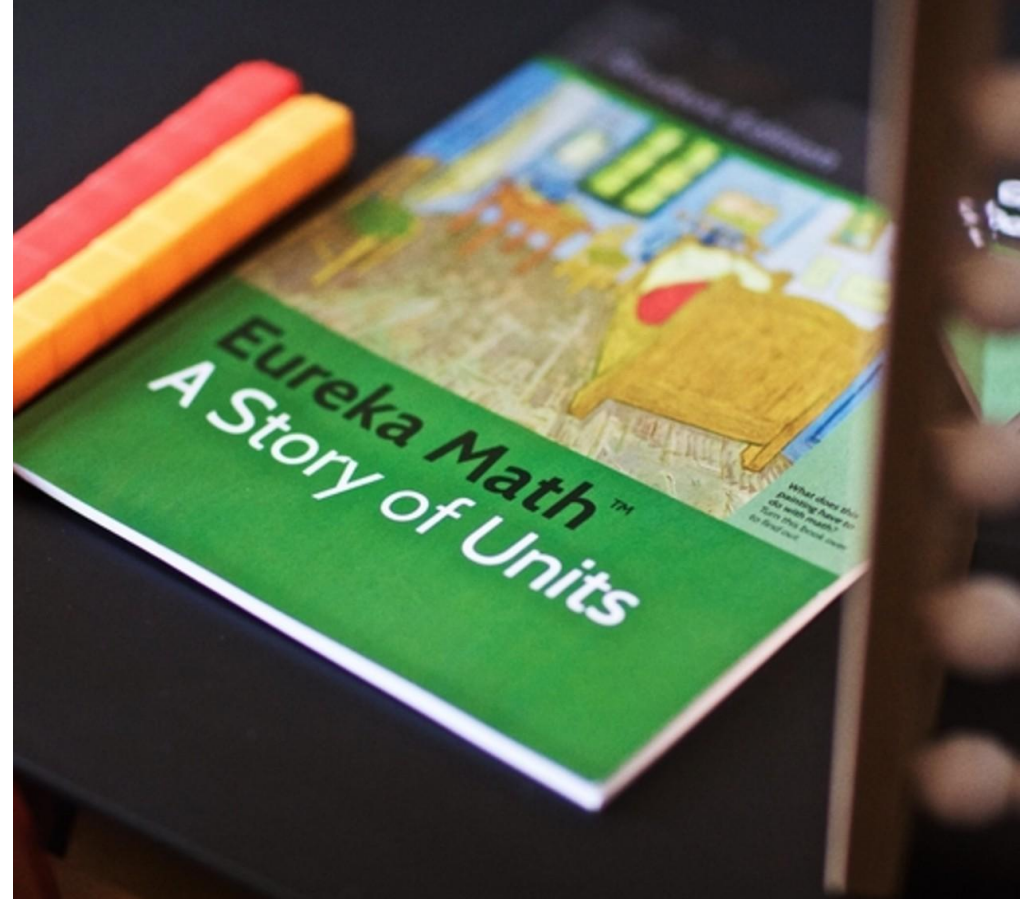
- To standards

Coherent

- A story that builds

Comprehensive

- Print, digital & support



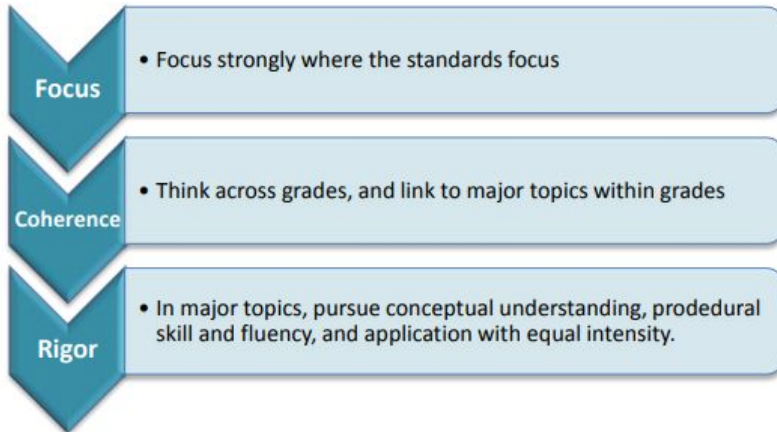
What are the Common Core State Standards (CCSS)?

- The Common Core State Standards provide a consistent, clear understanding of what students are expected to learn
- The standards are designed to be robust and relevant to the real world, reflecting the knowledge and skills that our young people need for success in college and careers
- With American students fully prepared for the future, our communities will be best positioned to compete successfully in the global economy
- Eureka Math is CCSS aligned

Eureka Math is aligned

- Highest rating of all K-8 curricula evaluated

Strong mathematics instruction contains the following elements:



Title: Eureka Mathematics

Grade: K-5

Publisher: Great Minds

Copyright: 2013

Overall Rating: Tier I, Exemplifies quality

[Tier I](#), [Tier II](#), [Tier III](#) Elements of this grade band:

STRONG	WEAK
Focus on Major Work (Non-Negotiable)	
Consistent, Coherent Content (Non-Negotiable)	
Rigor and Balance (Non-Negotiable)	
Practice-Content Connections (Non-Negotiable)	
Alignment Criteria for Standards for Mathematical Content	
Alignment Criteria for Standards for Mathematical Practice	
Indicators of Quality	

Eureka Math (2015)

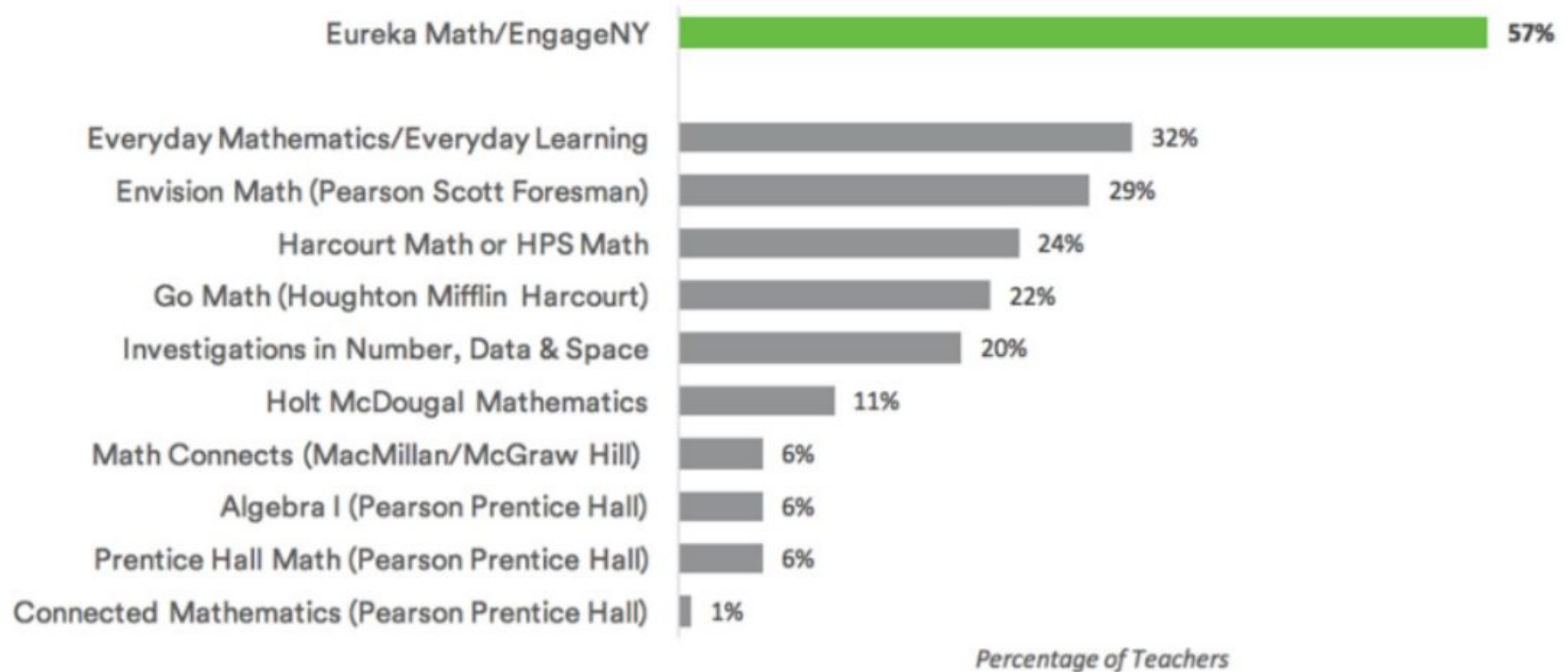
Published By: Great Minds | Date Published: 8/27/2018 | [View These Reports](#)



GRADE LEVEL	FOCUS & COHERENCE	RIGOR & MATHEMATICAL PRACTICES	ALIGNMENT RATING	USABILITY RATING
Kindergarten	14/14	16/18	Meets Expectations	33/38
First Grade	14/14	16/18	Meets Expectations	33/38
Second Grade	14/14	16/18	Meets Expectations	33/38
Third Grade	14/14	16/18	Meets Expectations	33/38
Fourth Grade	14/14	16/18	Meets Expectations	33/38
Fifth Grade	14/14	16/18	Meets Expectations	33/38

Eureka Math Usage

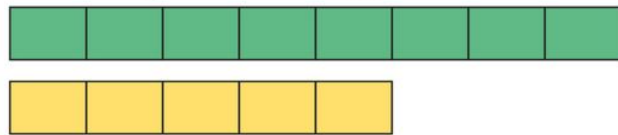
Which Math Curricula Are Elementary Teachers Using?



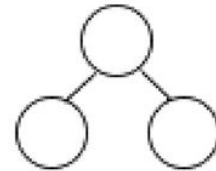
Models

- Tools for problem solving
- Used throughout the curriculum
- Build from lesson-to-lesson, grade-to-grade

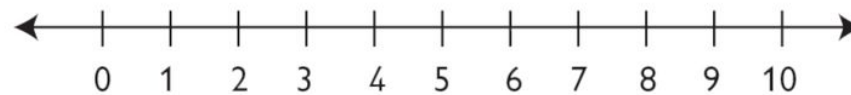
Tape Diagram



Number Bond

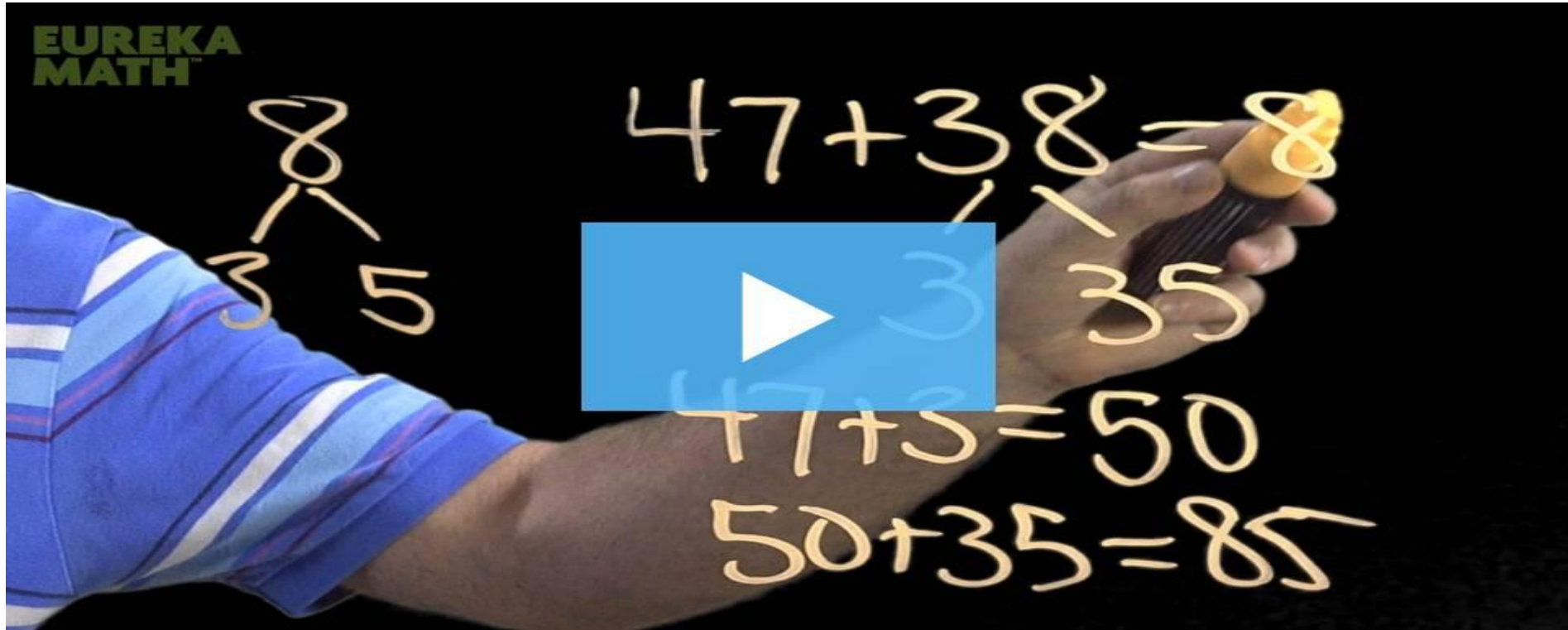


Number Line



**EUREKA
MATH**

Number Bonds

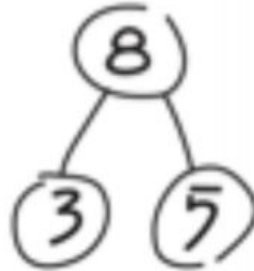


[Mental Math Using Number Bonds](#)

Sample Problems: Number Bonds

Add 7 and 8

First, students learn to break numbers into small, manageable units.



Then, students can see that $7 + 8$ is the same as $10 + 5$.

A diagram illustrating the strategy for adding 7 and 8. It shows the equation $7 + 8 = 10 + 5$. A number bond for 7 is shown with 7 at the top, 3 at the bottom, and an upward arrow from 3 to 7. A number bond for 8 is shown with 8 at the top, 5 at the bottom, and a line from 5 to 8. Below the diagram is the equation $7 + 8 = 15$.

Sample Problems: Number Bonds

Now use a number bond to add 998 and 337

$$998 + 337 = 1,000 + 335$$

The diagram illustrates a number bond strategy for adding 998 and 337. A large oval encloses the number 998 and the number 2. An arrow points from 2 to 998. A line connects 2 to 337. Another line connects 335 to 337.

Sample Problems: Tape Diagrams



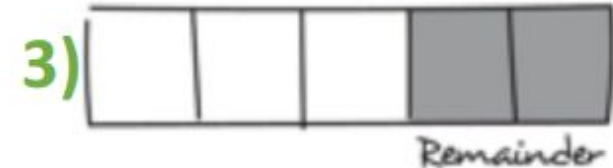
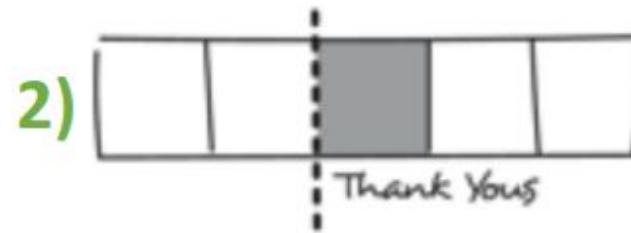
Show what $\frac{2}{5}$ looks like on a tape diagram.



Sample Problems: Tape Diagrams

Zoe had some stamps. She gave $\frac{2}{5}$ of the stamps to Lionel. She used $\frac{1}{3}$ of the remaining stamps to mail thank-you notes. She has 14 stamps left.

How many stamps did Zoe have when she started?



2 units = 14
1 unit = 7

7 stamps x 5 units = 35 total stamps

Sample Problems: Fractions

Which is greater, $\frac{1}{3}$ or $\frac{1}{4}$?

1) Find Common Denominator

$$\frac{1}{3} \times \frac{4}{4} = \frac{4}{12}$$

2) Multiply

$$\frac{1}{4} \times \frac{3}{3} = \frac{3}{12}$$

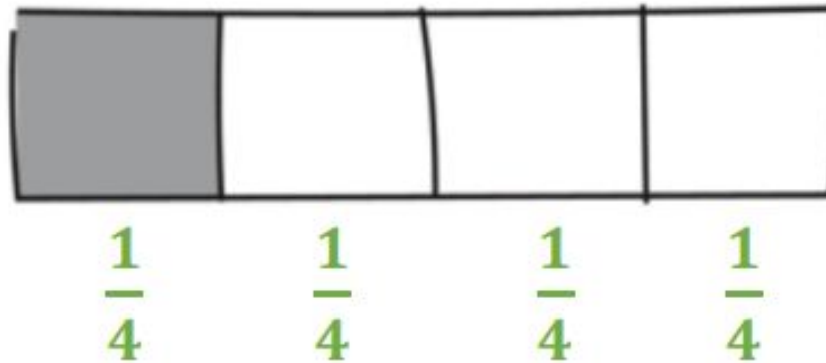
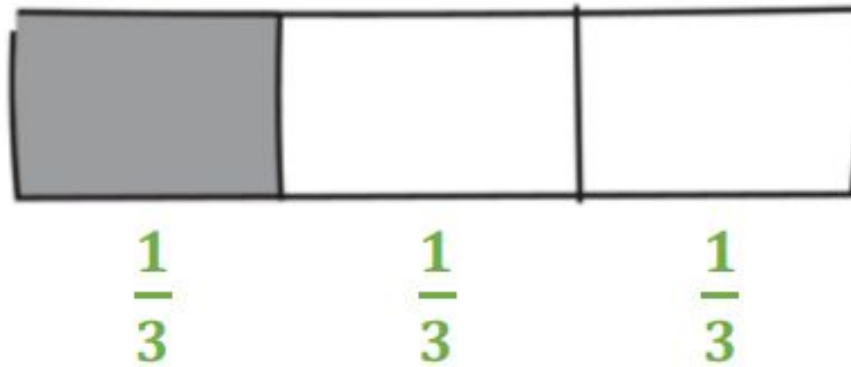
3) Compare fractions

$$\frac{4}{12} > \frac{3}{12}$$

$$\frac{1}{3} > \frac{1}{4}$$

Sample Problems: Visualizing Fractions

Which is greater, $\frac{1}{3}$ or $\frac{1}{4}$?



Parent Support

- Sign up for a free account at [greatminds.org/signup](https://www.greatminds.org/signup) to access:

- Homework Helpers (PK-12)
- Parent Tip Sheets (K-8)*
- Grade Roadmaps (K-8)*
- Sample problems*
- Card Games*
- Videos*

*available in English and Spanish

www.GreatMinds.org/Parents

Visit
www.Eureka.Support
for all things Eureka!

Tips for helping your child with math homework

EUREKA MATH TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

Welcome to Grade 8! In the first topic of Module 1, students will be learning about operations (mathematical processes such as addition and subtraction) with terms that have **exponents**. They will learn how to use definitions and properties, often referred to as the laws of exponents, to perform these operations. Students will start by investigating the properties of exponents using only **positive exponents** (e.g., 8^3 or $(-7)^2$), and then they will extend their knowledge to exponents of zero (e.g., 8^0) and **negative exponents** (e.g., 5^{-1} or $(-3)^{-2}$).

You can expect to see homework that asks your child to do the following:

- Write a **repeated multiplication representation** using exponents.
- Recognize when standard numbers are showing an exponential pattern. For example, 2, 4, 8, 16, and 32 are equal to 2^1 , 2^2 , 2^3 , 2^4 , and 2^5 , respectively.
- Change a given number to an **exponential expression** with a given **base**. For example, 25 to 5^2 .
- Determine whether an exponential expression is positive or negative.
- Simplify expressions using the properties/laws of exponents, including the **zeroth power** and negative powers.
- Explain his work, and prove that two expressions are equivalent by referencing the definition or property/law used.

SAMPLE PROBLEM (From Lesson 4)

$$\begin{aligned} 5^{-3} &= \left(\frac{1}{5}\right)^3 && \text{By definition of negative exponents} \\ &= \left(\frac{1}{5}\right) \cdot \left(\frac{1}{5}\right) \cdot \left(\frac{1}{5}\right) && \text{By definition of exponential notation} \\ &= \frac{1}{5 \cdot 5 \cdot 5} && \text{By 1st law of exponents} \\ &= \frac{1}{125} && \text{By definition of negative exponents} \end{aligned}$$

Properties of Exponents/Laws of Exponents

For any numbers a, b , and all integers m and n , the following rules apply:		
Name of Rule	Symbolic Expression	Arithmetic Example
1^{st} Law of Exponents	$a^m \cdot a^n = a^{m+n}$	$2^3 \cdot 2^4 = 2^{3+4} = 2^7$
2^{nd} Law of Exponents: Power to a Power	$(a^m)^n = a^{m \cdot n}$	$(3^2)^3 = 3^{2 \cdot 3} = 3^6$
3^{rd} Law of Exponents	$\frac{a^m}{a^n} = a^{m-n}$	$\frac{4^5}{4^2} = 4^{5-2} = 4^3$
Quotient of Exponents: Comparison of 1^{st} Law for Division	$\frac{a^m}{a^n} = a^m \cdot a^{-n}$	$\frac{4^5}{4^2} = 4^5 \cdot 4^{-2} = 4^3$
Powerful to a Power: Comparison of 2^{nd} Law for Division	$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$	$\left(\frac{2}{3}\right)^3 = \frac{2^3}{3^3}$
For any positive number a and all integers n , the following rules apply:		
Definition of Negative Exponents	$a^{-n} = \frac{1}{a^n}$	$5^{-2} = \frac{1}{5^2}$

Additional sample problems with detailed answer steps are found in the Eureka Math Homework Helpers books. Learn more at GreatMinds.org.

For more resources, visit Eureka.support

- Have your child explain what concepts they are learning.
- Ask questions:
 - *Can you explain?*
 - *What strategy did you use?*
 - *How else can you solve it?*
- Be positive about your child’s math education.
- Use *Eureka Math* Parent Resources:
 - Parent Tip Sheets
 - Homework Helpers
 - Videos

How to promote mathematical thinking at home

- *Eureka Math* games
- Tracking things over time
 - Height of a plant in the garden, amount of rainfall, etc.
- Adding math to activities they enjoy
 - Tallying the score at miniature golf, calculating expenses for a vacation, etc.
- Art project using geometric shapes

Questions?

Reminder: Important Information & Resources

For Parents

- Sign up to the *Eureka Math from Great Minds* website at www.eureka.support
- Check out the *Homework Helpers* (PK-12) and *Parent Tip Sheets* (K-8)

For Teachers

- Sign up to the *Eureka Math from Great Minds* website at www.eureka.support
- Sign up to the *Eureka Math* Newsletter
greatminds.org/newsletters
- Facebook: @EurekaMathOfficial
- Twitter: @Eureka_Math