Welcome to Family Math Night

- Noah Webster Academy
- *October 26, 2017*
- *Kindergarten – Sixth Grade*

EUREKA MATH™

Math Night Agenda

- *Understanding vs. “It just does”*
- *Focusing on “why”*
- *Why the need for change.*
- *What is Eureka math?*
- *Tools for parents*

- **Please write and save any questions until the end**

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Understanding vs "It Just Does…"

Teacher's Questions

- Why does a magnet attract its opposite?
- Why does this sentence start with a capital letter?
- Write a paragraph on all the reasons you love candy.
- Why did the author use these words to describe the character?
- Why did the pilgrims leave England?

Scholar's Answers

- It just does.
- It just does.
- I just do
- He just does.
- They just did.

Why is math any different?

- Have we been okay with "it just does" because scholar's can complete their assignment?
- If you can't explain why you did something, do you really have an understanding?

How many times has this happened?

- You walk into work and your boss gives you a worksheet of math problems to solve before you can leave.

- Scholars need to be problem solvers, not just worksheet finishers.

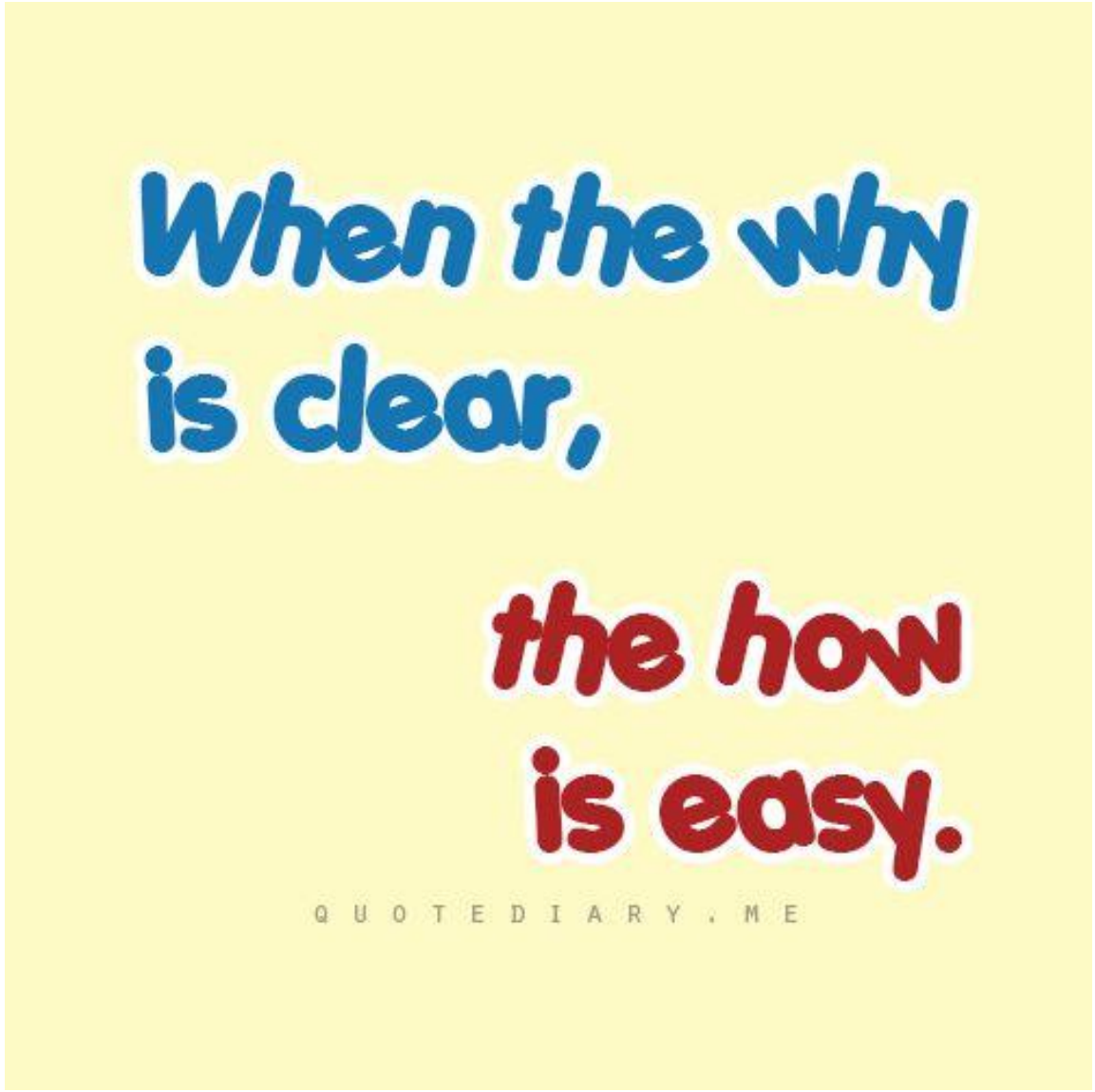
Understanding Math

- The Utah State Standards specifically uses the word "understand" in K-6 mathematics ***over 80 times***!

- No longer "find the answer" but rather "explain how you found your answer"

MATHEMATICS
is not about
numbers, equations,
computations, or
algorithms:
it is about
UNDERSTANDING.

William Paul Thurston



Teachers are already finding success

What is *Eureka Math*?

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Eureka Math is…

Aligned

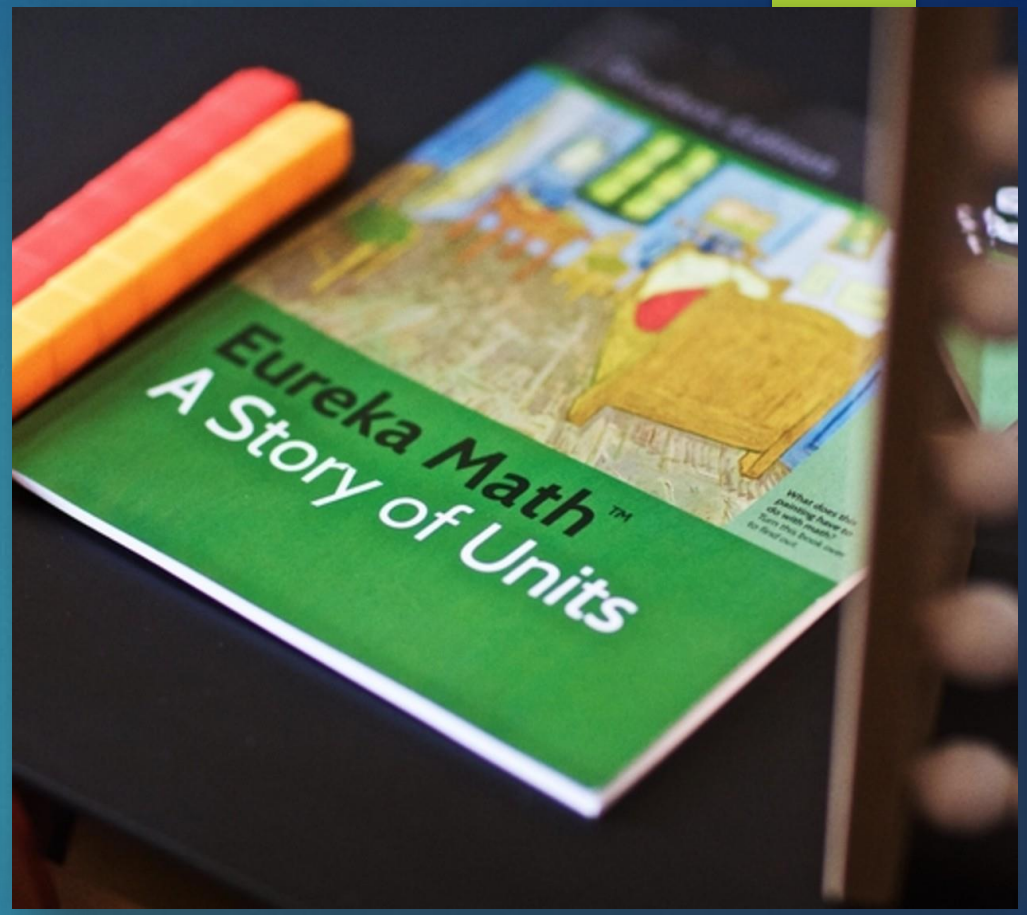
- To Utah State Standards
- http://www.uen.org/

Coherent

- A story that builds

Comprehensive

- Print, digital & support



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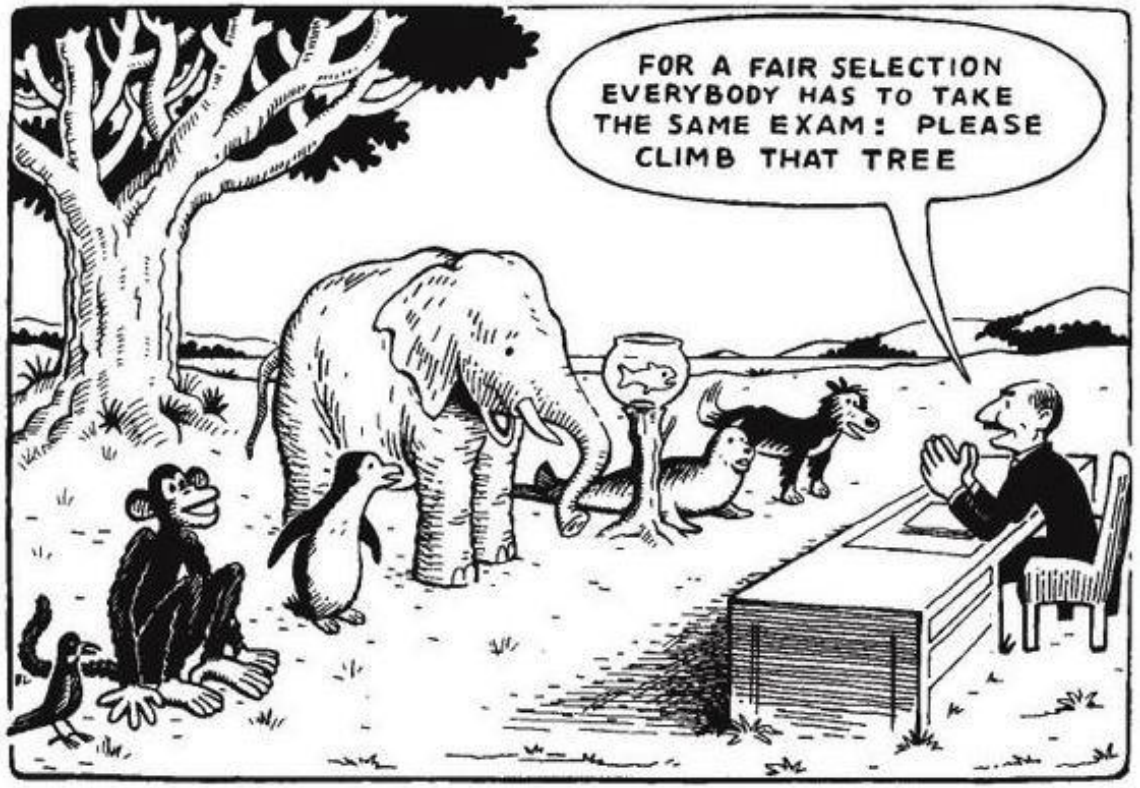
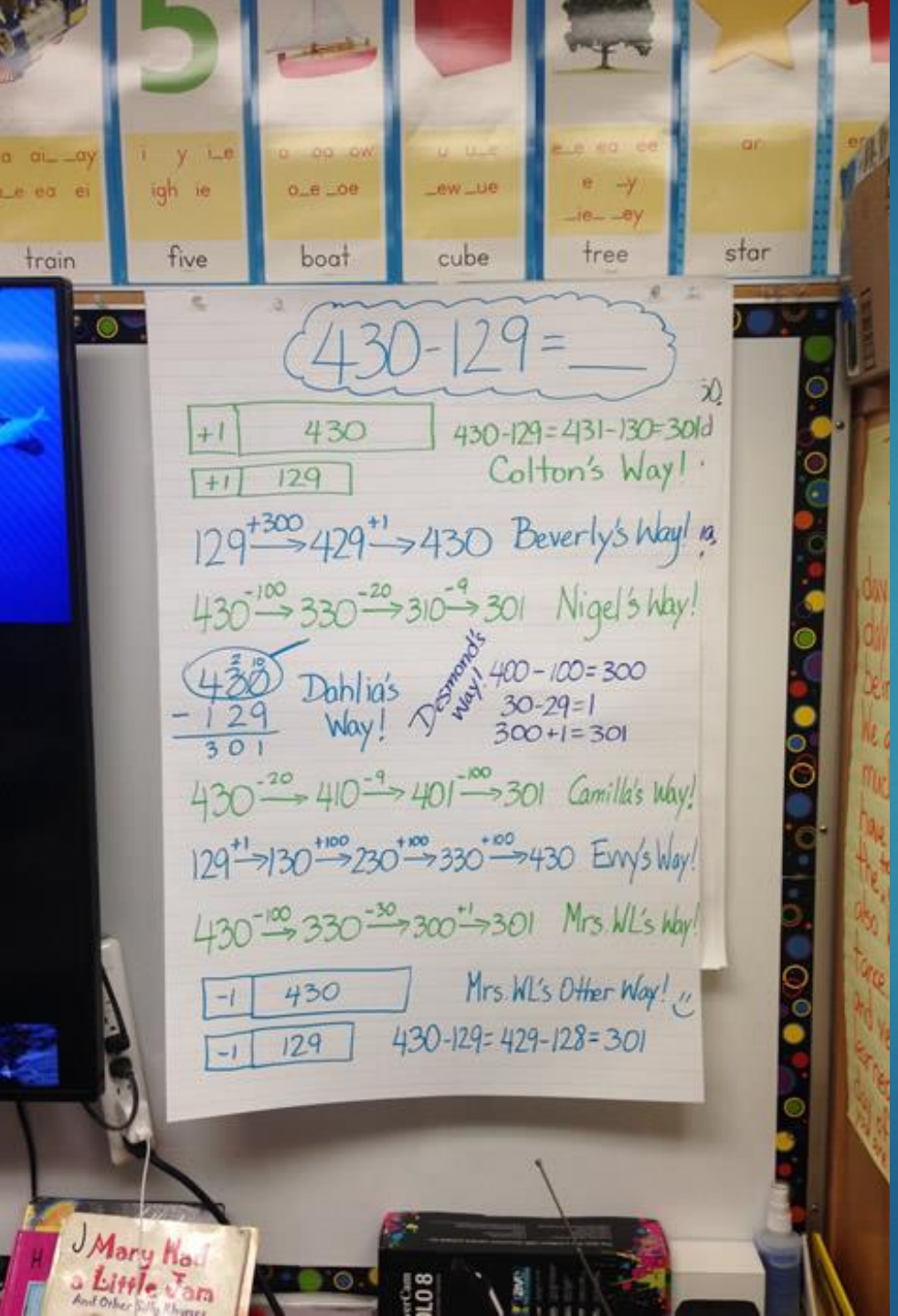
Not “new math” just a new way of teaching everyone.

- How many of us felt this way in math?
- We want everyone to succeed!
- Scholar’s who have never understood math are now seeing it and it’s clicking.





Multiple methods = multiple scholars success

- Do you see your method up there?
- Do you see they all got the right answer?
- We want to teach to each scholar.
- Sometimes this is the "Eureka way" and sometimes it's not.
- Teachers are in charge of the class. Not a program.

What are the Utah State Standards?

- The Utah 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 Utah State Standards aligned

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Noah Webster Academy helps scholars and parents look toward the future.

Junior High

- Junior highs NWA graduates attend expect students to be fluent with current K-6 Utah State Standards.
- We want them to transition as easily as possible.
- Our set of standards at NWA should set our scholars up to succeed at the next level.
- Even transferring to another elementary school.

University / College

- ACT's & SAT's are reflecting the change in standards.
- There are many more "whys" and "explain your answer" than there used to be.
- Preparing them now to think that way will be extremely beneficial.

Eureka Math is aligned

- Highest rating of all K–8 curricula evaluated

Title (33)	Kindergarten	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade	6th Grade	7th Grade	8th Grade
Show Reports	9/14	8/14	10/14	9/14	7/14	3/14			
Eureka Math Great Minds Show Reports	14/14	14/14	14/14	14/14	14/14	14/14	13/14	14/14	14/14

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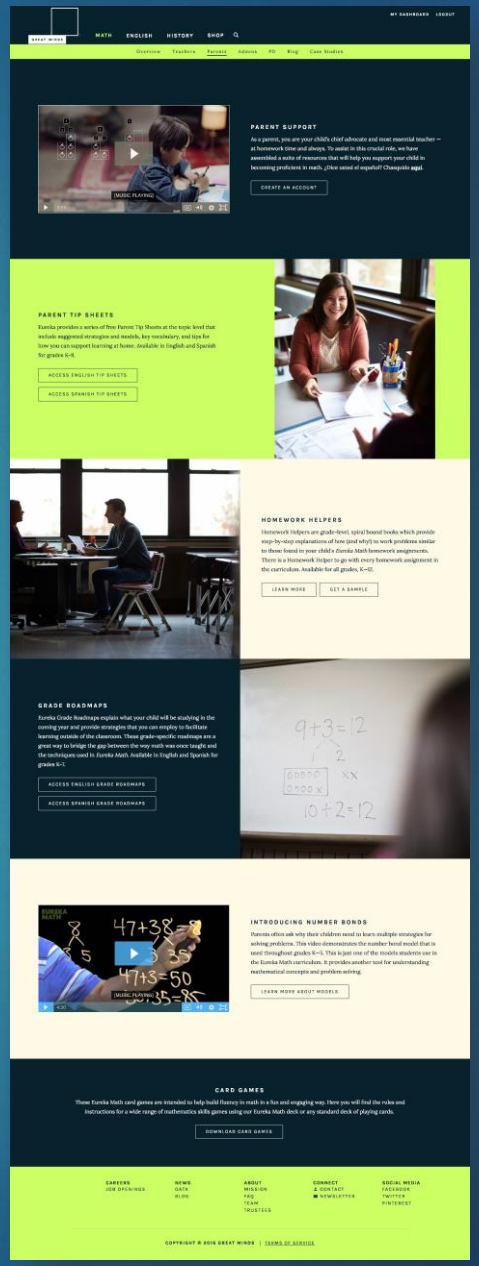
Parent Support

- Sign up for a free account at 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



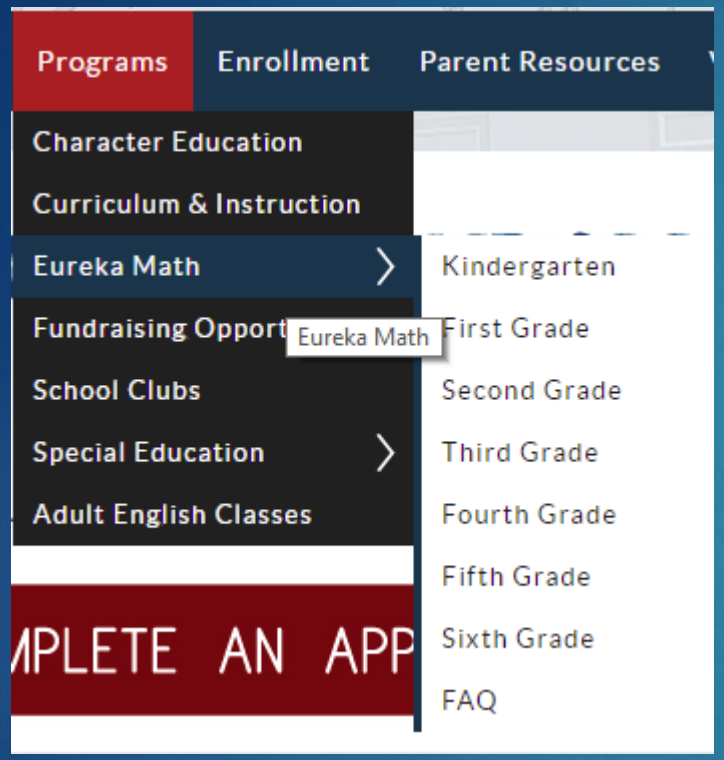
Visit

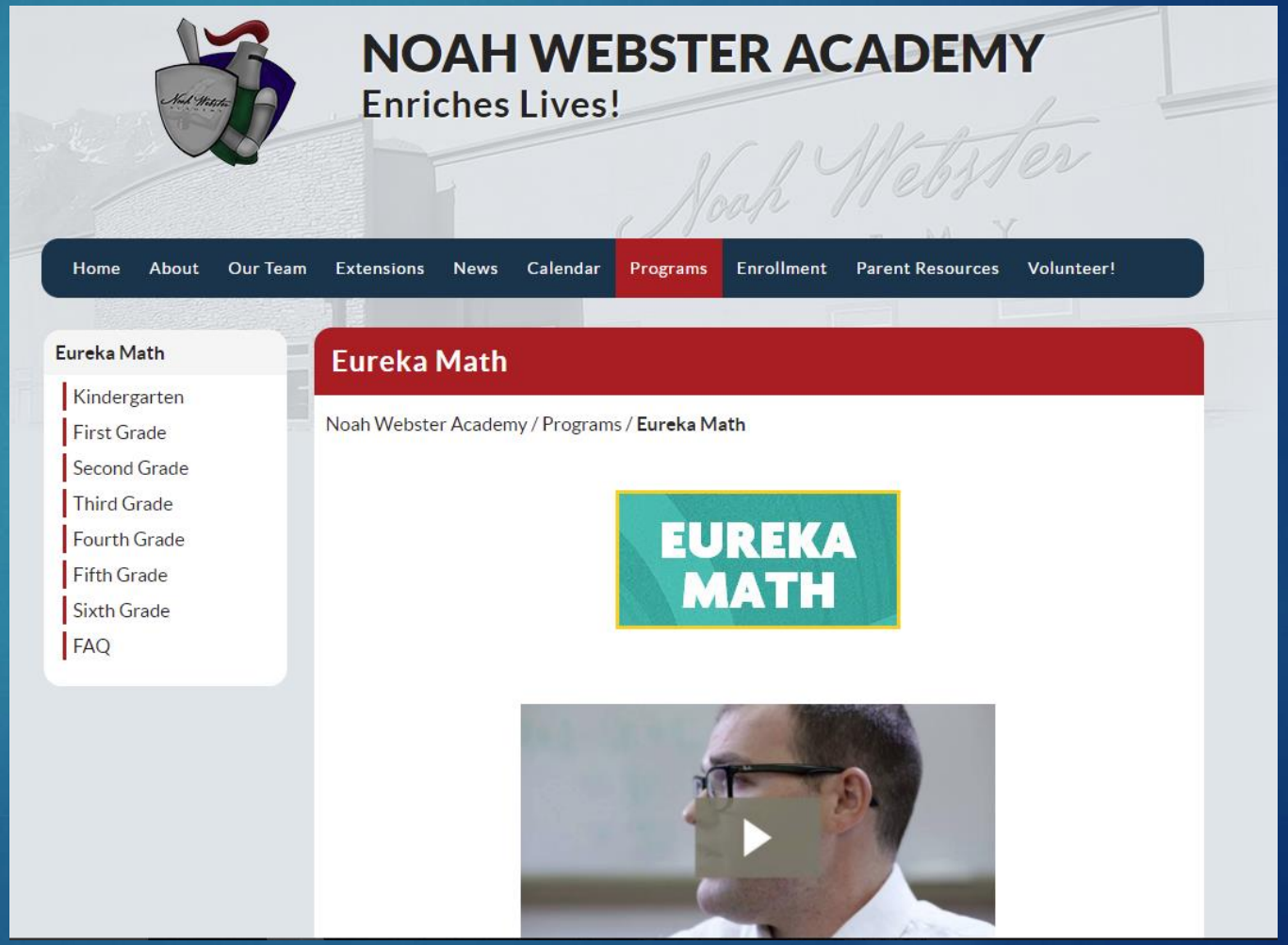
www.Eureka.Support

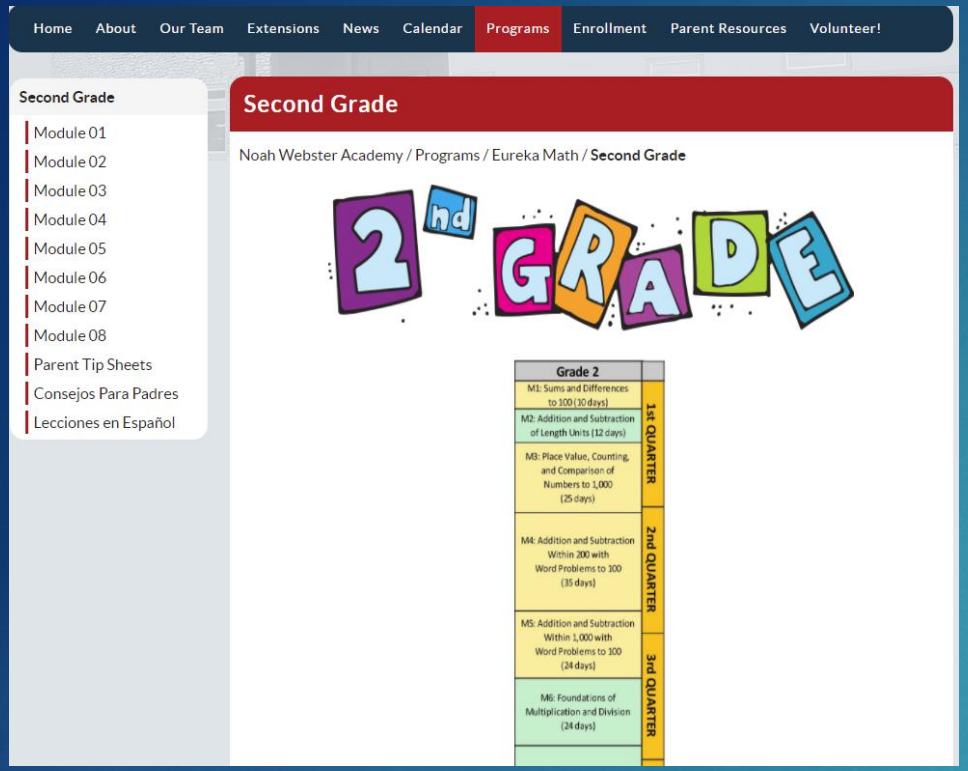
for all things Eureka!

www.GreatMinds.org/Parents

Also on the NWA website…



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Lecciones en Español
Second Grade
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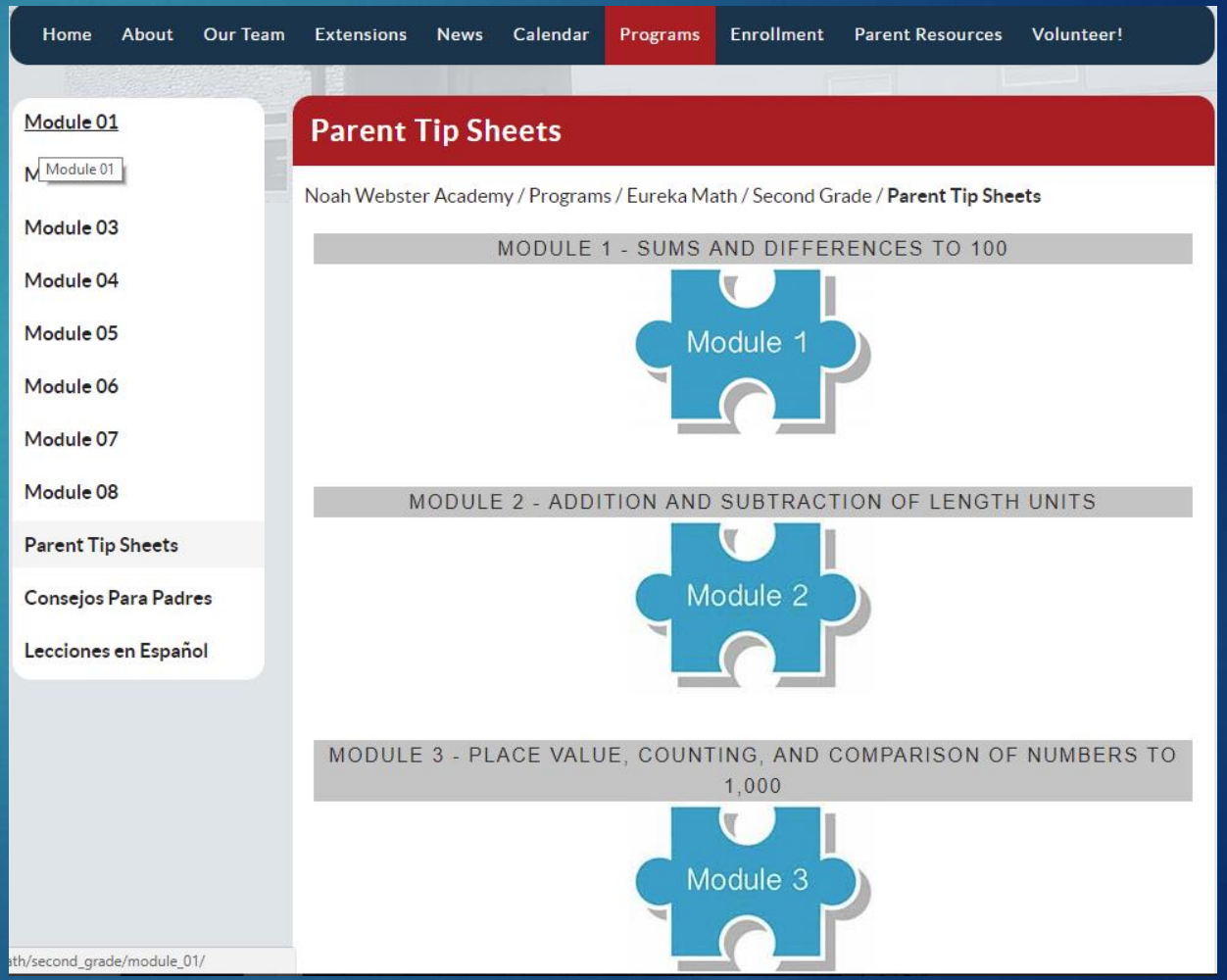
2nd GRADE
Grade 2
M1: Sums and Differences to 100 (30 days)
M2: Addition and Subtraction of Length Units (12 days)
M3: Place Value, Counting, and Comparison of Numbers to 1,000 (25 days)
M4: Addition and Subtraction Within 200 with Word Problems to 100 (35 days)
M5: Addition and Subtraction Within 1,000 with Word Problems to 100 (24 days)
M6: Foundations of Multiplication and Division (24 days)
1st QUARTER
2nd QUARTER
3rd QUARTER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MODULE 1 - SUMS AND DIFFERENCES TO 100
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MODULE 2 - ADDITION AND SUBTRACTION OF LENGTH UNITS
Module 2
MODULE 3 - PLACE VALUE, COUNTING, AND COMPARISON OF NUMBERS TO 1,000
Module 3
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EUREKA MATH™

GRADE 2 | MODULE 1 | TOPIC A | LESSONS 1–2

TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

During the next few days, our math class will be reviewing and building upon familiar skills established in Grades K and 1. We will be working toward the Grade 2 goal of fluently adding and subtracting numbers up to 100.

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

- Use a **number bond** to show a total and two **parts** for numbers 6–10. For example, if 9 is the total and 7 is one part, then 2 is the other part.
- Recall **partners to ten** (e.g., 1 and 9, 2 and 8, 3 and 7).
- Recall **ten plus facts** (e.g., 10 + 3 = 13; 10 + 7 = 17).
- Add single-digit numbers to a multiple of ten to reach a given total; for example, 80 + ___ = 82.

SAMPLE PROBLEM *(From Lesson 1)*

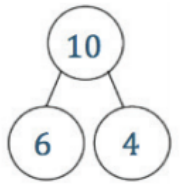
Add or subtract. Then complete the number bond to match.

10 = 4 + 6

10 = 6 + 4

10 – 6 = 4

10 – 4 = 6



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

HOW YOU CAN HELP AT HOME

- If your child would benefit from using concrete objects for support, provide pennies (or other counters) to help him break apart numbers into two parts. The use of fingers is also encouraged!
- Encourage your child to explain how she knows the correct answer. For example, "I know that 10 – 7 = 3, so that means 10 – 3 = 7. Three and seven are parts and 10 is the total."
- Practice counting the **Say Ten** way. Say a two-digit number (e.g., 23 or 37), and ask your child to repeat it the Say Ten way (2 tens 3; 3 tens 7). For fun, invite your child to say some numbers for you to repeat the Say Ten way.

TERMS

Say Ten counting: An East Asian method of counting that reinforces place value understanding by asking students to break two-digit numbers into tens and ones. In Grade 2, Say Ten counting extends to numbers in the hundreds. For example, 573 becomes "5 hundreds 7 tens 3."

eighteen	1 ten 8
forty-eight	4 tens 8
six hundred thirty-eight	63 tens 8 6 hundreds 3 tens 8

Part: One of two (or more) numbers that add up to a given total. For example, in 3 + 5 = 8, the parts are 3 and 5.

Partners to ten: Pairs of numbers that add up to ten: 1 and 9, 2 and 8, 3 and 7, and so on.

Ten plus facts: Ten plus ___ one(s) makes a teen number (11–19); for example, 10 + 1 = 11, 10 + 2 = 12, and so on.

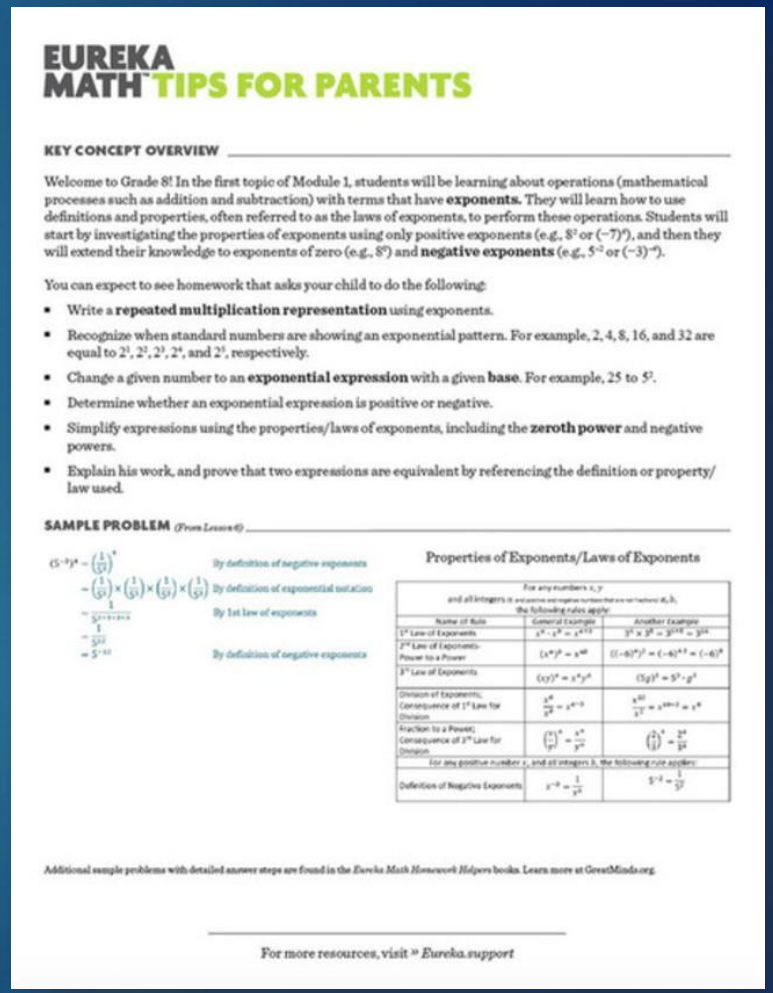
MODELS

Number Bond: A model that shows the relationship between a number (whole) and its parts.

(whole)
7

Tips for helping your child with math homework

- 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



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., 8^2 or $(-7)^3$), and then they will extend their knowledge to exponents of zero (e.g., 8^0) and **negative exponents** (e.g., 5^{-2} or $(-3)^{-6}$).

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)*

$$(5^{-2})^4 = \left(\frac{1}{5^2}\right)^4$$
By definition of negative exponents
$$= \left(\frac{1}{5^2}\right)\times\left(\frac{1}{5^2}\right)\times\left(\frac{1}{5^2}\right)\times\left(\frac{1}{5^2}\right)$$
By definition of exponential notation
$$= \frac{1}{5^{2+2+2+2}}$$
By 1st law of exponents
$$= \frac{1}{5^{8}}$$
$$= 5^{-8}$$
By definition of negative exponents

Properties of Exponents/Laws of Exponents

Name of Rule	General Example	Another Example
For any numbers x, y and all integers a, b, the following rules apply:		
1st Law of Exponents	$x^a \cdot x^b = x^{a+b}$	$3^5 \times 3^8 = 3^{5+8} = 3^{13}$
2nd Law of Exponents: Power to a Power	$(x^a)^b = x^{ab}$	$((-6)^3)^2 = (-6)^{3\cdot 2} = (-6)^6$
3rd Law of Exponents	$(xy)^a = x^a y^a$	$(3y)^5 = 3^5 \cdot y^5$
Division of Exponents; Consequence of 1st Law for Division	$\frac{x^a}{x^b} = x^{a-b}$	$\frac{x^{10}}{x^7} = x^{10-7} = x^3$
Fraction to a Power; Consequence of 2nd Law for Division	$\left(\frac{x}{y}\right)^a = \frac{x^a}{y^a}$	$\left(\frac{3}{y}\right)^5 = \frac{3^5}{y^5}$
For any positive number x, and all integers b, the following rule applies:		
Definition of Negative Exponents	$x^{-b} = \frac{1}{x^b}$	$5^{-3} = \frac{1}{5^3}$

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*

www.GreatMinds.org/Parents

The importance of IXL

- Scholars reach mastery, not completion.
- Do it until you get it.
- Easy to follow explanations when a problem is missed.
- Suggested activities to work on.
- Diagnostic tool to challenge higher ability levels and remediate unmastered concepts.

IXL

"Where **I excel** in math"

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

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We want to educate, not frustrate.

- You and your scholar's teacher are partners in your scholar's education.
- We urge you to work together to help your scholar succeed in math.
- Scholar's are also urged to take a larger role in their education by asking questions and seeking help when they need it.
- If something isn't working, speak up! Teachers are masters at adjusting and adapting as long as they are aware there is a problem.
- Help is ALWAYS available whenever teachers, parents, and especially scholars need it.

Questions?