Welcome to Oak Park Elementary’s Parent Math Night

EUREKA MATH

OAK PARK ELEMENTARY SCHOOL
TO SERVE EVERY STUDENT WITH EXCELLENCE AS THE STANDARD

You are your child’s first teacher!
AGENDA FOR TONIGHT

5:00-5:30 – Cafeteria: Eureka Overview

5:30-6:40 – Classrooms: Eureka and Big Ideas lesson and information sessions

6:40-7:00 – Cafeteria: Survey and Wrap-up

Students will be in the Media Center for the evening.
What percentage of careers use math?

- 94% of all workers use **math** in their jobs.
- 68% use fractions, decimals, and percentages.
- More than **a third** of skilled blue-collar workers such as carpenters and mechanics use **basic algebra** on the job; 29% use **geometry and trigonometry**.
Entry-Level Jobs for Math Majors With a Bachelor's

- Cryptographer: $119,139 - $145,274
- Mathematician: $101,900 - $160,550
- Economist: $104,340 - $182,560
- Actuary: $102,880 - $186,110
- Financial Planner: $88,890 - $208,000
- Investment Analyst: $85,660 - $167,420
Many adults are uncomfortable helping their child with math.
How is math different from when you were in school, or even from five years ago?

1. Greater focus on fewer topics
2. Coherence: Linking topics and thinking across grades
3. Rigor: Deep understanding of math and the ability to apply it
WHAT IS EUREKA?

The Eureka math curriculum was written by a collaboration of teachers and scholars working with Great minds, a non-profit organization that is dedicated to improving the content of instruction in America’s public schools. Great Minds was established in 2007 when a group of teachers and scholars came together with the belief that content-rich education should be available to all American schoolchildren.
What is Eureka Math?
EUREKA MATH IS…

Aligned
• To standards

Coherent
• A story that builds

Comprehensive
• Print, digital & support
EUREKA MATH IS ALIGNED

• Highest rating of all K–8 curricula evaluated
Which Math Curricula Are Elementary Teachers Using?

- Eureka Math/EngageNY: 57%
- Everyday Mathematics/Everyday Learning: 32%
- Envision Math (Pearson Scott Foresman): 29%
- Harcourt Math or HPS Math: 24%
- Go Math (Houghton Mifflin Harcourt): 22%
- Investigations in Number, Data & Space: 20%
- Holt McDougal Mathematics: 11%
- Math Connects (McMillan/McGraw Hill): 6%
- Algebra I (Pearson Prentice Hall): 6%
- Prentice Hall Math (Pearson Prentice Hall): 6%
- Connected Mathematics (Pearson Prentice Hall): 1%

Percentage of Teachers

www.GreatMinds.org/Parents
Eureka Math: How it Works

*Eureka* Math is designed to give students a deeper understanding of mathematics. One way this is accomplished is by following a logical progression from concrete to pictorial to abstract. To start, students learn mathematical concepts using actual objects or situations. From there, they transition into using pictures or models, such as tape diagrams, ten frames, and number bonds. Once they “see” what’s happening, they use symbols and standard algorithms because they now understand what makes those processes work.
Understanding place value: then vs. now

530

If you ask an adult how many ones are in this number, most will tell you zero because when they look at the ones place, there is a zero.

Because our students spend time working first with concrete objects and then place value charts with a model called disks, they understand that there are in fact five hundred thirty ones in the number above.
Drawing disks helps students understand what borrowing is in subtraction before they learn the standard algorithm. On the chart below, a student clearly sees that they cannot take nine away from two, but if they borrow a 100, and split it into ten 10s, they have enough to subtract.

\[
\begin{align*}
427 & -293 \\
\end{align*}
\]

I can model the whole, 427 with place value disks!

Am I ready to subtract in the ones place? Yes! The Tens? No.

I cannot subtract 9 tens from 2 tens so I need to change 1 hundred for 10 tens. 10 tens + 2 tens = 12 tens

Now I have 3 hundreds 12 tens 7 ones. I am ready to subtract!
EUREKA LESSON FORMAT

Lesson 1

Objective: Interpret a multiplication equation as a comparison.

Suggested Lesson Structure

- Fluency Practice (13 minutes)
- Application Problem (5 minutes)
- Concept Development (35 minutes)
- Student Debrief (7 minutes)
- Total Time (60 minutes)

Fluency Practice (13 minutes)

- Sprint: Multiply and Divide by 10 4.NBT.1 (10 minutes)
- Place Value 4.NBT.2 (3 minutes)

NOTES ON FLUENCY PRACTICE:

Think of fluency as having three goals:
1. Maintenance (staying sharp on previously learned skills).
2. Preparation (targeted practice for the current lesson).
3. Anticipation (skills that ensure that students are ready for the in-depth work of upcoming lessons).

Each lesson also includes:

- Problem Set
- Exit Ticket
<table>
<thead>
<tr>
<th>Lesson Type</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conceptual Understanding</td>
<td>“I learned something new about math today.”</td>
</tr>
<tr>
<td>Fluency/Procedural Skills</td>
<td>“I learned and/or practiced a more efficient way to do math and I understand why it works.”</td>
</tr>
<tr>
<td>Application</td>
<td>“I used my math knowledge today to solve a problem.”</td>
</tr>
</tbody>
</table>
MODELS

• Tools for problem solving
• Used throughout the curriculum
• Build from lesson-to-lesson, grade-to-grade
SAMPLE PROBLEMS: TAPE DIAGRAMS

Divide 5 stamps into a group of 2 and a group of 3.

Show what \( \frac{2}{5} \) looks like on a tape diagram.
Which is greater, $\frac{1}{3}$ or $\frac{1}{4}$
Number Bonds

47 + 38 = 85
50 + 35 = 85
PARENT SUPPORT

- Parent Newsletters for: Introducing Modules, Mid-Module and End of Module Reports
- Progress Monitoring for Exit Tickets
- Videos on YouTube
- Homework Helpers (K-5) is a sample of how to complete the homework
Second Grade Eureka Math Newsletter

Look at What We are Learning in Module 3:

In this module, your child will be working learning about place value, counting, and comparison of numbers to 1000.

- Recognize that 100 can be thought of as a bundle of ten tens — called a "hundred"
- Understand that the 3 digits of a three-digit number represent amounts of hundreds, tens, and ones
- Count within 1000; skip-count by 5s, 10s and 100s.
- Read and write numbers to 1000 using base-ten numerals, number names, and expanded form
- Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.

Concepts and Strategies:

Numbers may be written in different ways:

| Standard Form: | 626 |
| Word Form: | six hundred twenty-six |
| Unit Form: | 6 hundreds 2 tens 6 ones |
| Expanded Form: | 600 + 20 + 6 |

Bundling

Putting smaller units together to make a larger one. For example:

10 ones together to make a ten.

10 tens together to make a hundred.

Place Value Chart:

A graphic organizer that provides a column for each unit in a number.

<table>
<thead>
<tr>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

Number bond: A strategy used to explore the part/whole relationships within a given number.

![](263, 200, 60, 3)

How Can I Help My Child At Home?

- Practice counting in unit form. Partner A says a number (e.g., 234), and Partner B repeats it in unit form (2 hundreds 3 tens 4 ones). Take turns with your child being Partner A and Partner B.
- Play 10 More/10 Less. Partner A says a number (e.g., 30), and Partner B says the number that is 10 less (20). After every few turns, alternate between 10 more and 10 less. You can also play 100 More/100 Less. Take turns with your child being Partner A and Partner B.
- Play How Many Tens? Partner A says a number (e.g., 23 ones). Partner B tells how many tens are in the number (2 tens). You can also play How Many Hundreds? or How Many Hundreds and How Many Tens? Encourage your child to give each answer in both unit form hundreds and standard form. Again, take turns with your child being Partner A and Partner B.
- Find materials in your home such as toothpicks, straws, crayons, etc. — that you can gather and secure with a rubber band to form bundles of ten. Invite your child to make as many bundles of ten as possible. Have him count the bundles, skip-counting by tens. Then challenge her to state the total in unit form (e.g., 20 tens) and in standard, or number, form (e.g., 200).

Encourage your child to practice skip-counting by tens and by hundreds, up to 1,000, starting at any number.

Adapted from Eureka Math
Dear Parents,

Your child recently took the Mid Module Assessment for Module 3. Some of the skills assessed were:

1. understanding that the digits of a three-digit number represent amounts of hundreds, tens, and ones
2. reading and writing numbers to 1000 using place value, number names, and expanded form
3. counting within 1000; skip-counting by 5s, 10s, and 100s

Below is your child’s grade for this assessment. In order to protect the security and validity of the district assessment, it cannot be sent home. However, we can share it with you during a conference, should you wish to review it.

Please sign and return to indicate you have seen this grade.

Sincerely,
Second Grade

Grade: _____

In the boxes below, you will find the number(s) that correlate to the skills above, indicating your child’s strengths and/or opportunities for improvement.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Opportunities for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

Parent Signature ___________________________
### Grade 2 Module 3 Topic C
#### Three-Digit Numbers in Unit, Standard, Expanded and Word Forms

Skills taught:
- count up to 1,000 on the place value chart
- write base ten three-digit numbers in unit form; show the value of each digit
- write base ten numbers in expanded form
- write, read and relate base ten numbers in all forms

<table>
<thead>
<tr>
<th>U</th>
<th>N</th>
<th>S</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>The student is making unsatisfactory progress towards mastery of these skills. S/he is working below grade level expectations.</td>
<td>The student is beginning to make progress towards mastery of these skills. S/he needs more time and experience to make adequate progress.</td>
<td>The student is demonstrating adequate progress towards the mastery of these skills. S/he is meeting expectations.</td>
<td>The student is demonstrating outstanding progress towards the mastery of these skills. S/he exceeds expectations.</td>
</tr>
</tbody>
</table>

The letter circled above indicates your child's progress towards mastery of these skills.

Signature ____________________________
PARENT SUPPORT

Videos: www.youtube.com

➢ Duane Habecker
➢ Pick Grade Level, Module, and Lesson
1. Use the array below to answer the questions.

   The hearts are arranged in an array, and I know that a row in an array goes straight across. There are 5 rows in this array. Each row has 4 hearts.
   a. What is the number of rows? 5
   b. What is the number of objects in each row? 4
   c. Write a multiplication expression to describe the array. 5 \times 4

I know a multiplication expression is different from an equation because it doesn’t have an equal sign.

I can write the expression 5 \times 4 because there are 5 rows with 4 hearts in each row.

2. The triangles below show 2 groups of four.

   a. Redraw the triangles as an array that shows 2 rows of four.

I can redraw the equal groups as an array. I can draw 2 rows with 4 triangles in each row.

b. Compare the groups of triangles to your array. How are they the same? How are they different?

They are the same because they both have the same number of triangles, 8. They are different because the triangles in the array are in rows, but the other triangles are not in rows.

Homework Helper

3. Kimberly arranges her 14 markers as an array. Draw an array that Kimberly might make. Then, write a multiplication equation to describe your array.

   This problem doesn’t tell me the number of rows or the number of objects in each row. I need to use the total, 14, to make an array. Since 14 is an even number, I am going to make rows of 2. I can skip count by 2 and stop when I get to 14.

   I can write the equation by writing the number of rows (groups), 7, times the number in each group, 2. The product (total) is 14.

   I think there are other arrays that would work for a total of 14. I can’t wait to see what my friends came up with!
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 Newsletters
  • Homework Helpers
  • Videos
Help! My child is stuck on their homework!

1. Fake it ‘til you make it! The power of positivity is strong! Use resources! When your child says, “I can’t!” just add a YET to the end!

WHO'S AWESOME AT MATH?
YOU. YEAH YOU!
Help! My child is stuck on their homework!

2. Ask them if there is a model they could use.

What could they draw to help them solve this problem?
Help! My child is stuck on their homework!

3. Look over the Problem Set they completed in class that day.

The problem set and homework follow the exact same pattern. Students complete the problem set with their teacher as the lesson is being taught. See if looking back jogs your child’s memory.
4. Refer back to your Parent Newsletter for ideas. Remember, they are sent home at the beginning of each Module. Hang on to them!

They give you:

➢ A general overview of the module
➢ Tips for helping at home
➢ Sample Problems
➢ Examples of models used
➢ Key vocabulary
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

www.GreatMinds.org/Parents
QUESTIONS?