

Fourth Grade Mathematics

Dear Fourth Grade Families;

Welcome to the Ann Arbor Public Schools Family Pages. We hope the information you find here assists you in supporting your child while s/he is learning important skills and concepts throughout the fourth grade year.

Everyday Mathematics provides the core learning resource for Mathematics in the Ann Arbor Public Schools elementary grades. **Everyday Mathematics** (EDM) supports teachers in providing students with the mathematical instruction and experiences they need to ensure that their learning focuses on the major work of each grade. Units of study are based on grade level goals for mathematical content and mathematical practice supported by aligned instruction and assessment. Information below is from *Everyday Mathematics, Goals for Mathematical Practice*, McGraw Hill Education.

Operations and Algebraic Thinking

Use the four operations with whole numbers to solve problems	Interpret a multiplication equation as a multiplicative comparison and represent statements of multiplicative comparisons as equations. Solve number stories involving multiplicative comparison. Solve multistep number stories involving the four operations, interpreting any remainders. Model number stories with equations, using a letter for the unknown. Assess the reasonableness of answers to number stories and other problems.
Gain familiarity with factors and multiples	Find all factor pairs for a whole number in the range 1-100. Determine whether a whole number is a multiple of a given 1-digit number. Identify prime and composite numbers less than 100.
Generate and analyze patterns	Generate a number or shape pattern that follows a given rule. Identify features of a pattern that were not explicit in the rule.

Number and Operations in Base Ten

Generalize place value understanding for multi-digit whole numbers	Recognize the relationship between the places in whole numbers. Read, write, and identify places in numbers. Read and write number names. Read and write numbers in expanded form. Compare and order multi-digit whole numbers. Record multi-digit whole-number comparisons using $>$, $=$, or $<$. Use place value understanding to round whole numbers to any place.
Use place value understanding and properties of operations to perform multi-digit arithmetic	Add multi-digit whole numbers fluently using the standard algorithm. Subtract multi-digit whole numbers fluently using the standard algorithm. Multiply a whole number of up to four digits by a 1-digit number and a 2-digit number. Illustrate and explain multiplication strategies and calculations. Multiply a whole number by a multiple of 10, 100, or 1,000. Divide a whole number of up to four digits by a 1-digit whole number. Illustrate and explain division strategies and calculations.
Number and Operations: Fractions	
Extend understanding of fraction equivalence and ordering	Explain fraction equivalence. Recognize and generate equivalent fractions. Recognize that fractions comparisons require same-size whole. Compare and order fractions with different numerators and different denominators. Record fraction comparisons using $>$, $=$, or $<$. Justify the conclusions of fraction comparisons.
Build Fractions from unit fractions	Understand adding and subtracting fractions as joining and separating parts of the same whole.

	<p>Add fractions with like denominators. Subtract fractions with like denominators. Decompose fractions and mixed numbers and represent the composition with an equation. Justify decompositions of fractions. Add mixed numbers with like denominators. Subtract mixed numbers with like denominators. Understand a fraction a/b as a multiple of $1/b$. Multiply a fraction by a whole number. Solve number stories involving multiplication of a fraction by a whole number.</p>
Understand decimal notation for fractions, and compare decimal fractions	<p>Add two fractions with respective denominators 10 and 100. Represent decimals to hundredths. Name decimals using words and base ten numerals. Translate between decimal notation and fractions with denominators 10 or 100. Recognize that decimal comparisons require same-size whole. Compare and order decimals. Record decimal comparisons using $>$, $=$, or $<$. Justify the conclusions of decimal comparisons.</p>

Measurement and Data

Solve problems involving measurement and conversion of measurement	<p>Know relative sizes of measurement units; express measurements in a larger unit in terms of a smaller unit. Solve number stories involving whole numbers of measured qualities. Solve number stories involving simple fractions or decimals of measured quantities. Apply perimeter formulas for rectangles. Apply area formulas for rectangles.</p>
Represent and interpret data	<p>Organize and represent data on line plots. Add or subtract fractions to solve problems involving data on line plots.</p>
Geometric measurement: understand concepts of angle and measure angles.	<p>Recognize and describe angle measure as the amount of a rotation. Recognize $1/360$ rotation of a circle (1 degree) as a unit to measure angles. Recognize a measure of an angle as the number of one-degree angles through which it turns. Measure angles in whole-number degrees using a protractor. Sketch angles of a specified measure. Recognize angle measure as additive. Add and subtract to solve problems about unknown angles on a diagram.</p>

Geometry

Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	<p>Draw, represent and identify points, lines, line segments, and rays. Draw, represent and identify angles, including right, acute, and obtuse angles. Draw, represent and identify perpendicular and parallel lines. Classify 2-dimensional figures based on line segments or angles. Recognize right triangles as a category, and identify right triangles. Recognize that a line of symmetry divides a figure into 2 matching parts. Identify line symmetric figures and draw lines of symmetry.</p>
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Mathematical Practice

Make sense of problems and persevere in solving them	<p>Make sense of your problem. Reflect on your thinking as you solve your problem. Keep trying when your problem is hard. Check whether your answer makes sense. Solve problems in more than one way.</p>
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	Compare the strategies you and others use.
Reason abstractly and quantitatively	Create mathematical representations using numbers, words, pictures, symbols, gestures, tables, graphs, and concrete objects. Make sense of the representations you and others use. Make connections between representations.

The Council of Great City Schools provides information on such topics as: 1) the progression of student learning across grade levels; 2) suggestions for helping your child at home; 3) questions to ask your child's teacher for a better understanding of your child's growth; and 4) parents may find ways to enrich a child's work at home by understanding the learning that will happen in the following year.

[Great City Schools Parent Roadmap - 4th Grade](#)

[Great City Schools Parent Roadmap in Spanish - 4th Grade](#)

Suggestions from Council of Great City Schools:

Partnering with Teachers

Don't be afraid to reach out to your child's teacher—you are an important part of your child's education. Ask to see a sample of your child's work or bring a sample with you. Ask the teacher questions like:

- Is my child at the level where he/she should be at this point of the school year?
- Where is my child excelling?
- What do you think is giving my child the most trouble?
- How can I help my child improve in this area?
- What can I do to help my child with upcoming work?

Helping Your Child Learn Outside of School

1. Use everyday objects to allow your child to count and group a collection of objects.
2. Encourage your child to construct numbers in multiple ways. For example, what are some ways that you can make 10? Answers might include 5+5, 6+4, 8+2, etc. Have your child explain his or her thinking.
3. Have your child create story problems to represent addition and subtraction of small numbers. For example, "Ann had eight balloons. Then she gave three away, so she only had five left."