



Caregiver Guide

Math Learning (K-8)



UNIFIED
SCHOOL
DISTRICT
of DE PERE



1700 CHICAGO ST.
DE PERE, WI 54115

PH (920) 337-1032
FAX (920) 337-1033



Table of Contents

Letter to Caregivers 2

Mathematical Practices 3 - 4

Cornerstones of K-8 Math Learning 5

Vocabulary 6

Number Sense and Conceptual Understanding 7 - 8

Math Fluency 9 - 10

Making Math Meaningful 11 - 12

Supporting Your Learner at Home 13 - 14

Resources 15

Copyright 2026 by the Unified School District of De Pere. All Rights Reserved. The information contained in this program may not be reproduced in whole or in part, by any means, without permission.

Dear Caregivers,

You play an essential role in shaping how your child feels about learning mathematics. The purpose of this resource is to offer you practical, reassuring, and easy-to-use ideas to help your child(ren) discover enjoyment, confidence, and curiosity in math - whether during homework time, in everyday routines, or through simple conversations at home.

Inside, you will find information about fostering a positive mathematical mindset to help math feel natural and relevant in daily life. It highlights ways to encourage productive struggle and perseverance. Additionally, it celebrates thinking rather than speed to support your child without pressure, frustration, or anxiety.

This guide is not about teaching math the “right way”. Instead, it is designed to empower you with strategies that build connection - because when students feel safe to explore, make mistakes, and try again, their understanding grows. Math is naturally part of your daily life in multiple ways:

- games (especially dice and cards)
- counting objects
- clocks and timers
- number scavenger hunts
- reading books
- money
- calendars and schedules
- Legos and building blocks
- addresses and speed limits
- making groups
- comparing sizes
- finding shapes
- noticing patterns
- cooking/baking
- comparing more or less
- speed and distances
- measurement
- estimating values
- sports statistics
- maps and directions
- percents
- temperature

Thank you for helping your child(ren) view math as interesting, creative, and achievable. Together, we can encourage all students to see themselves as mathematicians - curious thinkers who explore, question, and make sense of the world through numbers and patterns. With your support, we can nurture learners who feel capable, confident, and excited to engage with mathematics.

Happy Mathing!
USDD Math Team

Mathematical Practices



Mathematical Practices are habits and ways of thinking that help students become confident problem-solvers in math. **They focus on how students reason, explain, and make sense of problems - not just follow steps.**

Integrating these practices helps students understand *why* math works, not just *how* to get an answer - while developing critical thinking and flexible problem-solving skills that support success in math and beyond. This naturally happens when playing games.

Make sense of problems and persevere in solving them.

- Take the time to understand what a problem is asking.
- Try different strategies, even if they get stuck.
- Keep working, even when it's challenging.



Reason abstractly and quantitatively.

- Moving flexibly between concrete numbers/quantities and abstract symbols.
- Students think about what the numbers represent in context, not just manipulating symbols mechanically.
- It's the practice of understanding what it is you're calculating and why.



Construct viable arguments and critique others' reasoning.

- Students should be able to clearly explain how they solved a problem.
- Encourage them to listen to and consider the ideas of others.
- Ask questions and give respectful feedback about solutions.



Model with Mathematics.

- Take situations about everyday life and translate it with math to answer questions.
- Use equations, drawings, tables, charts, diagrams, graphs, or build structures.
- Capturing the problem's relationships. It's the practice of turning a messy real-world scenario into a mathematical system.
- Use reasonable estimation.
- Interpret results and see if the solution makes sense.



Mathematical Practices



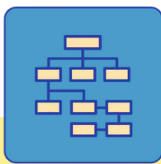
Use appropriate tools strategically.

- Students choose the math tools that best help them solve a problem.
- Use tools to explore ideas and check their work.
- Decide when a tool is helpful and when it isn't needed.



Attend to precision.

- Students use clear language, labels, and units so others understand their thinking.
- They calculate carefully and check their work for accuracy.
- They pay attention to details so their answers make sense.



Look for and make use of structure.

- Notice patterns or shortcuts that make problems easier to solve.
- Break problems into parts to understand how they work.
- Use what they already know to solve new or more complex problems.



Look for and express regularity in repeated reasoning.

- Notice patterns as they solve problems.
- Use those patterns to work more efficiently and make predictions.
- Check whether the patterns always hold true.

Cornerstones of K-8 Math Learning

Strong math learning is built on four key cornerstones: vocabulary, number sense and conceptual understanding, fluency, and making math meaningful. When students understand math language, know *why* strategies work, can calculate accurately, and see how math connects to real life, they gain confidence and flexibility as problem-solvers. **Together, these foundations help children move beyond memorization and develop skills they can use for a lifetime.**

Vocabulary

Math vocabulary builds precise understanding, supports clear reasoning, and helps students communicate mathematical ideas accurately, deepening comprehension and problem-solving skills.



Number Sense and Conceptual Understanding



Conceptual understanding and number sense help students grasp how math ideas connect, enabling flexible thinking, accurate reasoning, and effective problem-solving across varied situations.

Fluency

Math fluency is the ability to accurately utilize facts, perform calculations, and apply mathematical skills flexibly to solve problems.



Making Math Meaningful



Applying math in daily life builds practical problem-solving, strengthens understanding, and helps students see math's relevance, fostering confidence and lifelong mathematical readiness.

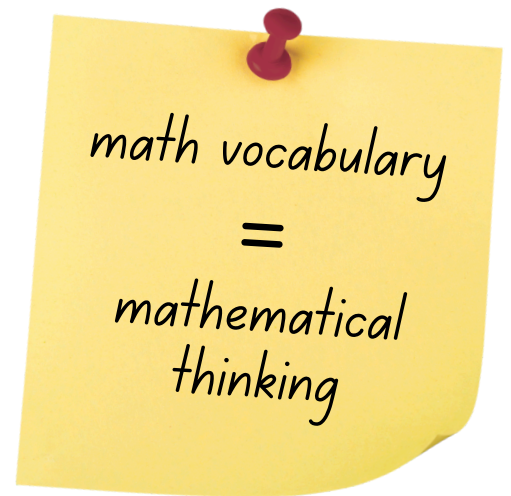
Vocabulary

Math vocabulary isn't just about memorizing definitions.

When students learn the precise language of mathematics, they develop deeper understanding and can solve new problems with confidence.

Just like learning to read requires knowing what words mean, learning math requires an understanding of mathematical terms. When a student can say, *"I need to find the factors of 12,"* they're thinking differently than if they just say, *"I need to find the numbers that work."*

Precise language leads to precise thinking.



Three Key Benefits

1. Builds Confidence

Students who know mathematical vocabulary feel more confident asking questions and explaining their thinking. They can follow directions, understand what their teacher is asking, and participate in class discussions.

2. Connects Ideas Across Topics

Math vocabulary helps students see how ideas are related. For example, understanding that "factor," "divisor," and "makes equal groups" all describe the same concept, helps students recognize patterns and transfer their learning to new situations.

3. Prepares for Future Math

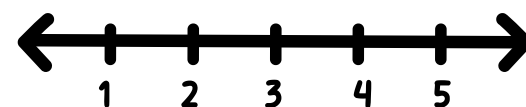
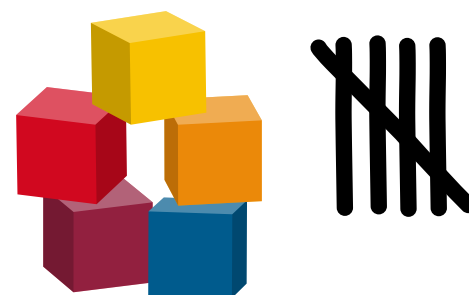
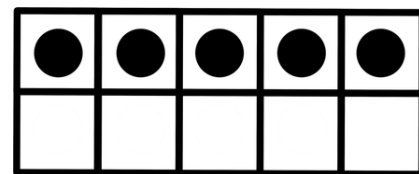
Each grade builds on vocabulary learned before. If a student misses key terms early on, later topics become much harder. Strong vocabulary in elementary math makes middle school algebra more manageable, which opens doors to higher math courses.



What NOT to Worry About

Your child doesn't need to memorize dictionary definitions. The goal is understanding - knowing what a word means, recognizing it in different contexts, and being able to use it. Over time and with practice, mathematical vocabulary becomes as natural as everyday language.

Number Sense and Conceptual Understanding



What is Number Sense?

Number sense is an intuitive understanding of numbers, their relationships, and how they can be used flexibly. It's knowing that 7 is close to 10, understanding that 26×4 should give you about 100, or recognizing that you have enough money to buy two items when you see the prices.

Students with strong number sense can:

- Estimate answers before calculating exactly
- Recognize when an answer doesn't make sense
- Choose efficient strategies for solving problems
- See connections between different numbers and operations

What is Conceptual Understanding?

Conceptual understanding is knowing why mathematical ideas work, not just how to perform steps.

For example:

- Understanding that multiplication is repeated groups (not just memorizing $3 \times 4 = 12$)
- Knowing why dividing by a fraction is the same as multiplying by its reciprocal
- Seeing that area is length $\times$ width because you're counting square units
- Understanding one ten is made up of ten ones
- $8 + 4$ can be thought of as $8 + 2 + 2$ because $8+2$ makes a ten

**When students understand the "why,"
they can apply their knowledge to new situations.**

Number Sense and Conceptual Understanding



Why This Matters for Your Child's Future

Problem-Solving in New Situations

Every year brings new math topics. Students with conceptual understanding can figure out how to approach unfamiliar problems. Students who only memorize feel helpless when they encounter something they haven't seen before.

Catching Mistakes

When students understand what they're doing, they can check if their answer makes sense. A student might calculate $24 \times 3 = 46$ and think, "That can't be right - 24 times 3 should be close to 75" (since $25 \times 3 = 75$). Number sense catches the error.

Reduced Anxiety

Students who understand math feel more confident and less anxious. They know they can figure things out, rather than depending on memorized rules they might forget.

Success in Higher Math

Algebra, geometry, and advanced math all require conceptual thinking. Students who memorized their way through elementary math often hit a wall in later grades because they can't think flexibly about new concepts.



What NOT to Worry About



Your child may take longer to solve some problems because they're thinking deeply about them. That's a good thing! Speed matters less than understanding. A child who thinks carefully and gets it right is learning more than a child who quickly memorizes but doesn't understand.

Also, your child's strategies may look different from how you learned math. **That's okay!** If they can explain their thinking and get the right answer, they're learning.

Fluency Develops In Stages

Fact fluency develops gradually through repeated exposure and practice, not through memorization alone. Students move from using strategies to support their understanding to **eventually recalling facts automatically**. This is an important progression from understanding to automaticity.



Stage 1: Understanding With Models

Students use objects, base 10 blocks, drawings, number lines, tape diagrams, and manipulatives to understand what an operation means. A student adding $29 + 15$ uses base 10 blocks to see 2 tens + 1 ten and 9 ones + 5 ones.

Stage 2: Using Multiple Strategies

Students develop different ways to solve the problem. For $29 + 15$, a student might: break apart both numbers ($20 + 10 = 30$, $9 + 5 = 14$, total 44), use a number line, or adjust numbers ($30 + 14$) for easier mental computation. Understanding that multiple strategies work builds deeper understanding.

Stage 3: Selecting Efficient Strategies

Students learn which strategy is most efficient for different problems. For $29 + 15$, adjusting the problem to $30 + 14$ might be easier. Whereas, for $32 + 14$ breaking apart both numbers by place value ($30 + 10 = 40$, $2 + 4 = 6$, total 46) may be more effective.

Stage 4: Automatic Execution

With repeated practice, students execute the operation fluently, accurately, and without having to think through each step.

Math Fluency

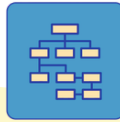
Fluency is NOT just speed.

Many people think fluency means being fast.
That's part of it, but true fluency has three components:



ACCURACY

getting the answer right,
consistently



EFFICIENCY

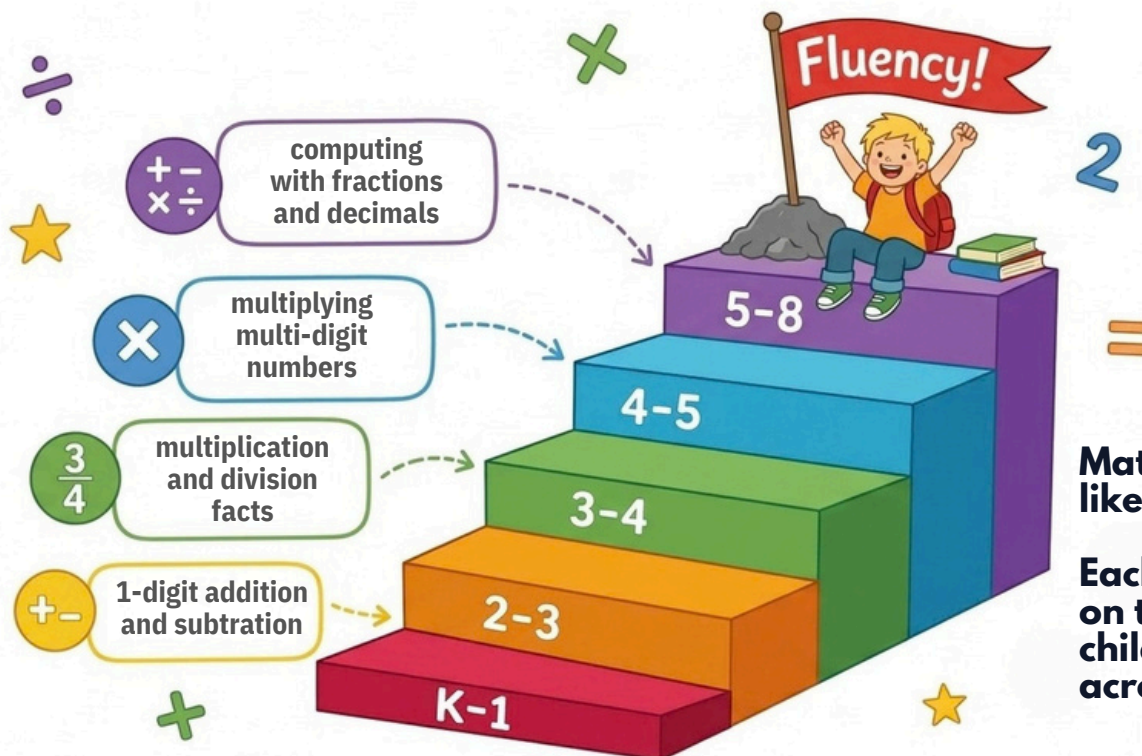
recalling the fact without
having to count or use a
strategy every time



FLEXIBILITY

understanding that facts
connect (if $7+5=12$, then
 $5+7=12$ and $12-5=7$)

A student who is fast but often wrong is not fluent. A student who is accurate but takes a long time is developing fluency but isn't there yet.

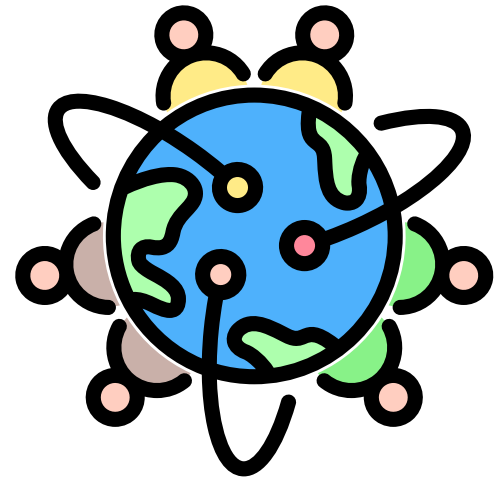


**Math fluency is
like a staircase.**

**Each step builds
on the last as
children learn
across grades.**

Making Math Meaningful

Why Real-World Connections Matter



1. Math Makes Sense

When a student measures ingredients for a recipe and sees why they need to double fractions - fractions become real. When they calculate how many pizzas to order for a party, division becomes purposeful. Abstract math suddenly has meaning.

2. Motivation Increases

Students are more engaged when they see the WHY. "*Why do I need to learn percentages?*" is answered when they compare sale prices, calculate tips, take out a loan, and pay taxes. Relevance fuels motivation.

3. Understanding Deepens

When students apply math to real situations, they develop deeper conceptual understanding. They're not just following procedures - they're thinking about what makes sense. A student who calculates the best deal at the grocery store learns more about ratios and proportions than one who just practices division problems.

4. Problem-Solving Skills Develop

Real-world problems are messy. They require deciding what information matters, which math tools to use, and whether an answer makes sense. These skills transfer to new situations and are exactly what employers need.

5. Math Becomes a Habit of Mind

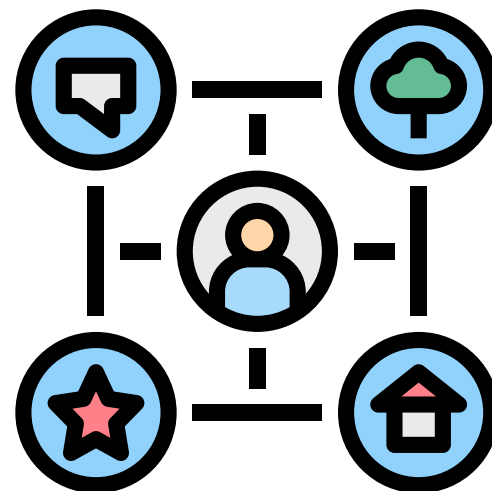
When students regularly notice math in their surroundings, they start thinking mathematically about the world. They naturally ask questions like, "*I wonder what percentage that is?*" or "*How much would a streaming subscription cost for a year?*" This mathematical thinking extends far beyond the classroom.

Making Math Meaningful



Math isn't just for math class.

When students see math in their daily lives - and actively use it to solve real problems - they understand its value. They develop deeper understanding, stronger motivation, and the ability to think mathematically about the world around them. By pointing out and engaging with math at home, you're helping your child see math as a practical, powerful tool - not just a subject to get through.



What Are Real-World Applications?

Real-world applications are authentic situations where math is used to solve problems.



- **Cooking and baking** (fractions, ratios, measurements)
"A recipe calls for $\frac{1}{2}$ cup of flour. How much do we need if we doubled the recipe?"



- **Shopping and budgeting** (money, comparison, discounts)
"If you save \$5.50 each week, how much money would you save in a month? Year?"



- **Building and crafting** (area, perimeter, proportions)
"We're painting a wall that's 4 feet by 6 feet. How much paint do we need?"



- **Sports and games** (statistics, probability, scoring)
"What score of the football game is greater and by how much?"



- **Travel** (distance, time, speed, maps)
"How long will it take to get to our destination if our average speed is 65 mph?"



- **Video games and apps** (coordinates, patterns, logic)
"How could you adjust the angle of your character's movement to be successful?"

Supporting Your Math Learner at Home



Supporting Math Learning at Home

helps students develop confidence, reinforce what they're learning in class, and see math as a tool they use in everyday life. Regular conversations about math strengthens students' understanding that math thinking is valuable and achievable for everyone.

1. Talk About Math in Daily Life

Math is all around you. Use counting, comparing, and estimating during routine activities. **Talk about math naturally during these activities:**

- **Cooking and baking** - This is one of the best ways to teach fractions, measurements, and ratios. When cooking together, say *"We're dividing the recipe in half,"* instead of just *"We're making it smaller."*
- **Go shopping together** - Have your child help compare prices, calculate totals, figure out change, or find the best deal.
- **Plan a trip or event** - Calculate distances, times, and costs. Budget for activities.
 - Compare options: *"The party starts at 1:30 and it takes us 14 minutes to get there, what time do we need to leave?"*
 - Sports: Keep score, track statistics, calculate averages, understand probability. Ask: *"What's your batting average?"* or *"How many points do you need to win?"*
- **Explore data together** - Look at weather forecasts, sports stats, population data. Ask: *"What does this graph tell us?"* or *"Is that percentage higher or lower than last year?"*
- **Build and create** - Woodworking, gardening, decorating, and crafts all involve measurement, area, and spatial reasoning. Involve your child in planning dimensions and calculating materials needed.
- **Manage money** - Give an allowance and have your child budget it. Calculate savings goals. Understand how money grows with interest. Ask: *"If you save \$5 each week, how much will you have in a month?"*
- **Notice math everywhere** - Point out math in the world: time on clocks, temperatures, prices, patterns in nature, symmetry in buildings. Ask: *"What shapes do you see in that building?"*

Supporting Your Math Learner at Home



2. Play Math-Rich Games

Board games, card games, dice games, and puzzles strengthen number relationships, patterns, spatial and strategic reasoning.

3. Praise Effort and Reasoning, Not Speed

Celebrate different strategies and thoughtful explanations to build confidence and flexible understanding: *"I noticed how hard you worked on that."* or *"You didn't give up."*

4. Let Them Struggle Productively

When your child gets stuck, resist the urge to tell them the answer immediately. Instead ask questions: *"What do you know for sure?"* or *"Could you try drawing that?"* Notice *what they did* (tried, asked, noticed, persisted, explained) and celebrate the process *"I'm glad you asked when you were stuck"* or *"It's great that you are trying the strategy you learned."* Know when to stop: It's okay to say: *"This is tough. Let's take a break and come back to it."*

5. Use Real Objects

Let kids count, group, and move objects like toys, snacks, or coins to make abstract ideas concrete. Seeing and touching math makes it "real" and builds number sense.

6. Ask Open-Ended Questions

- *"Does your answer make sense? How do you know?"*
- *"Can you find another way to solve the problem?"*
- *"What math did you use at school this week? Can you show me?"*
- *"Can you show me how you figured that out?"*

These interactions build deep number sense and strengthen long-term math success.

UNIFIED
SCHOOL
DISTRICT
of DE PERE



1700 CHICAGO ST.
DE PERE, WI 54115

PH (920) 337-1032
FAX (920) 337-1033



Learning math is **NOT** a straight line...
It's messy and it's a
PROCESS!



Resources

IM Family Hub

<https://ilclassroom.com/resources/24002515>

USDD Curriculum

<https://www.deperek12.org/teaching-and-learning/curriculum>

For more information, please contact your child's teacher.