



UPONLY LEARNING · FREE FOR PARENTS

The Parent's Math Guide

A practical guide for parents

How to help with math homework without being a math person, without tears, and without doing it for them.

Dr. Evan J. Hasson, DC

One step at a time.

Contents

The 5-minute version: a summary for busy parents	3
Start here	4
1 · You're not alone	6
2 · Mindset first: how to talk about math at home	8
3 · How math is taught today, in plain English	10
Kindergarten to 2nd grade: counting, making ten, place value	11
3rd to 5th grade: multiplication, division, fractions	13
6th to 8th grade: ratios, negatives, equations	15
High school: algebra, geometry and beyond	17
Word problems, at every age	19
4 · The questions that matter more than the answers	20
5 · Spotting and filling gaps	22
6 · Five-to-ten-minute everyday math	25
7 · Homework without the battles	27
8 · When to get extra help	29
The grade-by-grade map, K–12	31
Math words, translated for parents	32
The fridge card: what to say when they're stuck	34

Short on time? Start here

We know parents are busy. If you can't find time to read the whole guide, this summary covers the main points so you can start helping tonight. Each point names the chapter to read when you have more time.

1. You don't have to know the math. Your job is to stay calm, ask good questions and notice early when something isn't clicking. You can do that even with high school math. **Ch. 1**

2. Your words shape their confidence. Praise effort and strategy, not "smarts." Add "yet": "You can't do fractions yet." Never say "I was never good at math either." Treat mistakes as clues: "Interesting mistake. Let's find out what happened." **Ch. 2**

3. The new methods are the same math, shown step by step. Number bonds, making ten, area models and bar models show *why* before the shortcut. Ask your student to show you their way before you show yours. Two methods at once causes most homework tears. **Ch. 3**

4. Ask questions instead of giving answers. "What is the question asking?" "What have you tried?" "Can you draw it?" "How could you check?" Then wait ten seconds in silence. Ask the same questions when the answer is right, so a question never means "you're wrong." **Ch. 4**

5. Today's struggle often started years ago. Math is a staircase. Weak place value, slow multiplication facts and shaky fractions are the most common hidden gaps, all the way into high school. Check the earlier skill with two or three easy problems; fix it with ten minutes a day, without calling it "baby work." **Ch. 5**

6. Small, everyday math beats long sessions. Counting at the store, doubling recipes, figuring tips and sale prices, comparing phone plans with a teenager: five to ten minutes, a few times a week, builds number sense without feeling like homework. **Ch. 6**

7. Fix the routine and most fights stop. Same time, same place, start with an easy problem, stay nearby without hovering, and don't fix every mistake: the teacher needs to see what your student can't do. Set a time limit; if homework regularly runs long, send the teacher a short note. **Ch. 7**

8. Know when to get help. Home help is enough if your student improves over a few weeks. Get more help if grades keep slipping, gaps keep appearing or homework keeps ending in tears. Start with the teacher (free). If you suspect a learning difference, you can request a free school evaluation in writing. **Ch. 8**

IF YOU DO JUST ONE THING

Tonight, when your student gets stuck, don't explain. Ask "What is the question asking you to find?" and wait ten seconds. Then keep the fridge card (last page) where you'll see it.

START HERE

You don't have to be good at math to help

You need three things: a calm voice, a few good questions, and a rough idea of what your student is being taught. This guide gives you all three.

Most parents who pick up a guide like this have had the same evening. A worksheet comes home that looks nothing like the math you learned. You show your student the way you were taught, and they say "That's not how my teacher does it." Ten minutes later somebody is crying, and it might be you.

Nothing went wrong in that evening except the plan. You were trying to be the teacher. You don't have to be. Your job is smaller and more important: to be the calm adult who keeps your student thinking, notices when something is missing, and makes sure math never becomes the thing your family fights about.

WHAT THIS GUIDE IS

A practical handbook for the parent, not the student. It explains how math is taught now in plain words, gives you exact sentences to say when your student is stuck, shows you how to tell a small gap from a big one, and helps you decide when home help is enough. It covers kindergarten all the way through high school, because the job changes as your student grows.

WHAT THIS GUIDE IS NOT

It is not a textbook, and it will not turn you into a math teacher. You will not need to relearn algebra. Even in high school, where the math may truly be past what you remember, there is a lot you can do, and Chapter 3 shows you what.

How to read it

If you have...	Read first	Then
Ten minutes tonight	The fridge card (last page) and Chapter 4	Chapter 2 this weekend
Homework fights every night	Chapter 7	Chapters 2 and 4
A student who "just doesn't get it"	Chapter 5	Chapter 8
A worksheet you don't understand	Chapter 3, the part for their grade	The glossary at the back
A teenager in high school math	Chapter 3, high school section	Chapters 7 and 8

Every chapter is short and stands on its own. Skip what you don't need.

ONE PROMISE BEFORE WE BEGIN

You don't need to buy anything to use this guide. The ideas work with a pencil, the kitchen table and whatever homework came home today. Where we mention UpOnly workbooks, it's because they are built on the same methods explained here, and many of them are free.

CHAPTER 1

You're not alone

If math homework makes you tense, you are in very good company. Plenty of capable, educated parents feel the same way at the kitchen table.

There are good reasons for that, and none of them is that you are "not a math person."

Why math feels harder to help with than reading

Math looks different now. Reading a bedtime story is the same activity it was when you were young. Math worksheets are not. Your student may be drawing boxes to multiply, or "decomposing" numbers, or writing a sentence to explain an answer. When the page looks foreign, even a confident adult hesitates.

Math is a chain. Every topic is built on an earlier one. If a link is weak, the trouble shows up a year or two later, on a topic that looks unrelated. That makes it hard to see what is actually wrong. Chapter 5 is about exactly this.

Math has right and wrong answers. A wrong answer feels like a verdict, to your student and to you. That is where a lot of the stress comes from, and it is the easiest part to fix. Chapter 2 shows how.

Many of us carry our own math stories. A teacher who made you feel slow. A timed test you dreaded. Those memories come back at the kitchen table, and students pick up on them quickly.

"I'm not a math person" is not true, and it's catching

Almost everyone can learn the math taught in school, through high school, with enough time and good teaching. What looks like a talent gap is usually a gap in practice, in confidence, or in one early skill that never got solid.

Here is the part that matters for your family. Students listen closely to how the adults around them talk about math. If a parent says "I was never good at math either," a student can hear permission to give up. You can still be honest about finding it hard. Chapter 2 gives you better words for that.

THE ONE IDEA TO KEEP

You don't need to know the answer to help. Your student needs an adult who stays calm, asks good questions, and believes they can figure it out. You can do all three tonight, even if the homework is calculus.

What success looks like

Success is not that you can solve every problem. Success looks like this:

- Your student starts homework without a fight most nights.
- When stuck, they try something before asking for help.

- They can explain, in their own words, what they did.
- Mistakes are treated as information, not as failure.
- You know roughly what they are learning, and you notice early when something isn't clicking.

Every chapter that follows works toward one of those five things.

Mindset first: how to talk about math at home

The words you use about math matter more than any method. Change a few sentences and homework gets calmer, often within a week.

Praise the effort and the strategy, not the "smarts"

"You're so smart" feels kind, but it teaches a student that being good at math is something you either are or aren't. The first time a problem is hard, that student concludes they aren't. Praise what they *did* instead. That is something they can do again.

Instead of	Try
"You're a natural at this!"	"You kept going when that one got tricky. That's how it's done."
"That's easy, you know this."	"This one takes some thinking. Where could you start?"
"No, that's wrong."	"Walk me through how you got that."
"I was never good at math either."	"Math was hard for me too, and I wish I'd kept at it. Let's figure this out together."
"Just memorize it."	"Let's see why it works. Then it's easier to remember."
"Hurry up."	"Take your time. Getting it right matters more than getting it fast."
"Why don't you get this?"	"Which part makes sense so far? Let's start there."

Use the word "yet"

When your student says "I can't do fractions," add one word: "You can't do fractions *yet*." It sounds small. It changes the sentence from a fact about who they are to a description of where they are right now.

Treat mistakes as clues

Most wrong answers in math aren't random. They come from a rule the student believes that is almost right. A student who writes $\frac{1}{2} + \frac{1}{3} = \frac{2}{5}$ isn't careless; they believe you add tops and bottoms. That belief is the thing to fix, and you only find it by asking how they got the answer.

Try saying, sincerely: "Ooh, interesting mistake. Let's find out what happened." Some families keep a "best mistake of the week" on the fridge. It sounds silly, and it works, because it makes being wrong safe.

Watch your face and your voice

Students read a sigh, a pause or a raised eyebrow as fast as any word. If you feel yourself tensing up, it is fine to step away: "Let me get a glass of water and I'll be right back." Coming back calm is worth more than staying frustrated.

Speed is not the goal

Some math does need to be quick. Addition and multiplication facts should eventually come in a couple of seconds, because slow facts crowd out thinking later. But being fast is not the same as being good at math. Many strong mathematicians are slow, careful thinkers. Timed tests make some students anxious; if yours is one of them, practice facts in relaxed ways (Chapter 6) and keep the timer out of your home.

For teenagers: respect, not cheerleading

A fifteen-year-old does not want a pep talk. What works with teens:

- **Ask, don't tell.** "What's the plan for the test Friday?" lands better than "You need to study."
- **Be honest about not knowing.** "I don't remember how to do this. Show me what your teacher did."
Explaining it to you is one of the best ways for them to learn it.
- **Connect math to what they care about.** Their car insurance, their phone plan, their sports stats, their first paycheck. Chapter 6 has ideas.
- **Separate the grade from the person.** "A C on a test is information about what to work on. It's not a grade on you."

TRY THIS WEEK

Pick one sentence from the "Try" column above and use it every time math comes up for seven days. Just one. Notice what changes.

CHAPTER 3

How math is taught today, in plain English

The new methods aren't new math. They are the same math, with the thinking written down instead of hidden inside a shortcut.

When you learned to add $38 + 47$, you probably "carried the one" without knowing why. Today's methods ask students to show *why* the one gets carried before they use the shortcut. Once the reason is solid, most classrooms do teach the traditional method. It just comes second instead of first.

That is the whole secret. Almost every strange-looking worksheet is doing one of three things:

- **Breaking numbers into friendly pieces** (tens and ones, hundreds, a "ten" and some extra).
- **Drawing the math** (boxes, number lines, bars) so the student can see it.
- **Asking for an explanation**, because a student who can explain an answer understands it.

IF YOU ONLY REMEMBER ONE RULE

Don't teach your way over the teacher's way, at least not at first. Ask your student to show you their method. If they truly can't, look at the class notes or the textbook example together. Two methods taught at once is the most common cause of homework tears.

This chapter goes grade band by grade band. Read the part for your student's grade, plus the band before it. That earlier band is where most gaps hide.

Kindergarten to 2nd grade: counting, making ten, place value

Counting is more than saying numbers

A four-year-old who can recite "one, two, three... twenty" may not yet understand counting. Real counting means touching each object once, and knowing that the last number said is how many there are. Ask "How many?" after they count. If they count again instead of answering, that idea isn't solid yet. It's normal in kindergarten, and practice with real objects fixes it.

Number bonds: parts and wholes

A **number bond** shows a number broken into two parts: 7 is 5 and 2, or 4 and 3, or 6 and 1. Students learn all the ways to make each number up to 10, and especially all the pairs that make 10 (1 and 9, 2 and 8, 3 and 7, 4 and 6, 5 and 5). Those "make ten" pairs are the foundation for almost everything in first and second grade.

Making ten

To add $8 + 5$, students are taught to "make a ten": 8 needs 2 more to be 10, so take 2 from the 5. Now it's $10 + 3$, which is easy: 13.

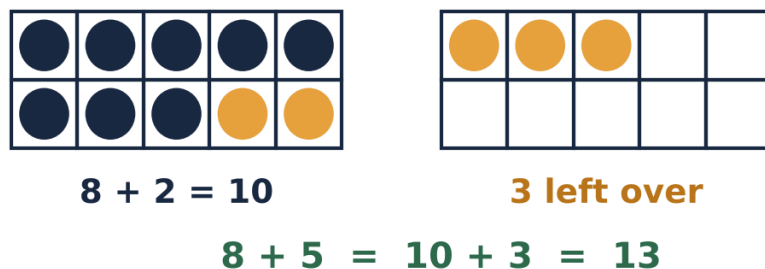


Figure 3.1. Making ten with ten-frames. Two of the five counters fill the first frame; three are left over. $8 + 5$ becomes $10 + 3$.

This looks slower than just knowing $8 + 5 = 13$, and at first it is. But it's a strategy that works for *every* problem, and it's exactly the move a student uses later for $38 + 5$ or $98 + 7$. The goal is still fast recall. Making ten is how they get there with understanding.

Place value: tens and ones

The single most important idea in early math is that 47 means **4 tens and 7 ones**. Not "a four and a seven." Students build numbers with bundles of ten sticks, base-ten blocks or drawings of tens (a line) and ones (a dot).

A quick test: ask your student "In 63, what does the 6 mean?" The answer you want is "six tens," or "sixty." If they say "six," spend time here. Weak place value causes more trouble in grades 2 through 5 than any other gap.

Adding and subtracting bigger numbers

Teachers now say **regroup** instead of "carry" and "borrow." It's the same thing, named for what actually happens: ten ones become one ten, or one ten is broken back into ten ones.

You'll also see **counting up** for subtraction. For $52 - 38$, a student might think: 38 to 40 is 2, 40 to 50 is 10, 50 to 52 is 2. Add the jumps: $2 + 10 + 2 = 14$. It's how a cashier makes change, and it's a perfectly good method.

WATCH OUT

A common second-grade mistake: $52 - 38 = 26$. The student subtracted the smaller digit from the larger in each column ($8 - 2 = 6$, $5 - 3 = 2$) instead of regrouping. If you see answers like this, place value is the gap, not subtraction.

What you can do at home

- Count real things: steps, grapes, cars. Ask "How many?" at the end.
- Play "make ten": you say 6, they say 4. You say 3, they say 7.
- Ask "How do you know?" after any answer, right or wrong.
- Use money: dimes are tens, pennies are ones. 47 cents is 4 dimes and 7 pennies.

3rd to 5th grade: multiplication, division, fractions

Multiplication starts as equal groups

Third graders learn that 4×6 means 4 groups of 6. They draw it as an **array**, rows and columns of dots, 4 rows of 6. Arrays make it obvious that 4×6 and 6×4 are the same amount, just turned sideways, which halves the facts to learn.

By the end of third grade, students are expected to know all products of one-digit numbers from memory. That is still the goal. Strategies (doubling, "a 9 is a 10 minus one group") get them there faster.

Bigger multiplication: the area model

For 36×7 , students split 36 into $30 + 6$, multiply each part by 7, and add. They draw it as a rectangle cut into pieces. This is called the **area model**, or **partial products**.

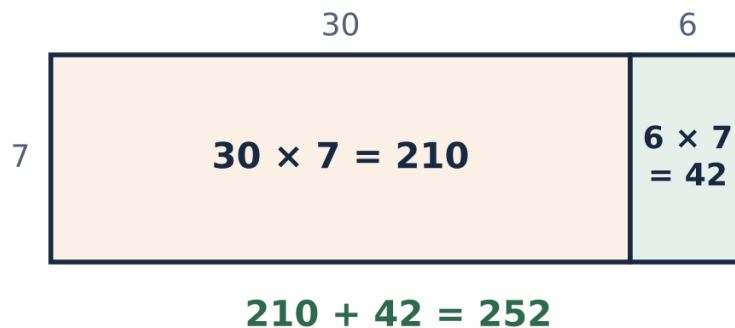


Figure 3.2. 36×7 as an area model. The big box is $30 \times 7 = 210$, the small box is $6 \times 7 = 42$. Together, 252.

This is the same math as the stacked method you learned: the "carried" 4 in that method is the 4 tens from 42. Most students move to the standard method in fourth or fifth grade. If the standard method keeps going wrong, the boxes are a reliable place to go back to.

Division: sharing and "how many groups?"

Division is taught as two questions: sharing (12 cookies shared by 3 people, how many each?) and grouping (12 cookies in bags of 3, how many bags?). Both give 4.

For bigger numbers, many schools teach **partial quotients** before long division. For $156 \div 6$, take away easy chunks of 6s:

- 10 sixes is 60. $156 - 60 = 96$ left.
- 10 more sixes is 60. $96 - 60 = 36$ left.
- 6 sixes is 36. Nothing left.

Add up the groups: $10 + 10 + 6 = 26$. Check by multiplying back: $26 \times 6 = 156$. ✓ It's long division with friendlier steps, and students who understand it pick up the standard method easily.

Fractions: the big one

Fractions are where many students first decide they are "bad at math," so it helps to know what's being taught.

A fraction is a number, with a place on the number line. Third graders learn that $\frac{3}{4}$ is a point between 0 and 1, three of four equal jumps from 0. This matters because a student who sees fractions only as "pieces of pizza" struggles later to compare, add or put them in order.

Equivalent fractions are different names for the same point. On a number line, $\frac{2}{3}$ and $\frac{4}{6}$ land in the same place.

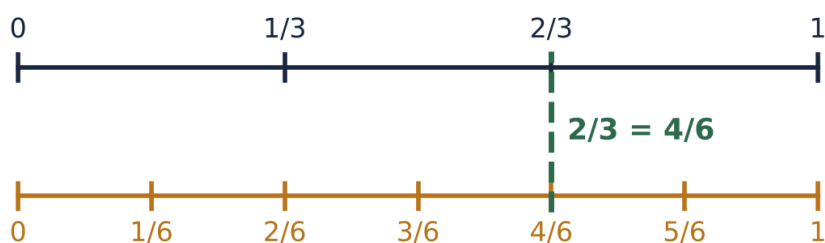


Figure 3.3. Thirds on top, sixths below. $\frac{2}{3}$ and $\frac{4}{6}$ land on the same spot, so they are the same number.

Adding fractions needs equal-sized pieces. You can't add halves and thirds directly, any more than you can add inches and feet without converting. So $\frac{1}{2} + \frac{1}{3}$ becomes $\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$.

WATCH OUT

The most common fraction mistake at every age: $\frac{1}{2} + \frac{1}{3} = \frac{2}{5}$, adding tops and bottoms. A quick reality check catches it: $\frac{2}{5}$ is less than $\frac{1}{2}$, but we added something to $\frac{1}{2}$. The answer has to be bigger.

Decimals

Decimals are taught as another way to write tenths and hundredths: 0.7 is seven tenths, 0.25 is twenty-five hundredths. A common confusion is thinking 0.45 is bigger than 0.5 "because 45 is bigger than 5." Write 0.5 as 0.50 and compare: 50 hundredths beats 45 hundredths. Money helps here: 50 cents is more than 45 cents.

What you can do at home

- Practice multiplication facts a few minutes at a time, not in long sessions. Focus only on the ones that are slow.
- Use measuring cups for fractions: "How many quarter cups make a half cup?"
- Ask "Is that answer reasonable?" before checking if it's right.

6th to 8th grade: ratios, negatives, equations

Middle school is where math stops being mostly about calculating and starts being about relationships between quantities. It's also where letters show up. Your role starts shifting from helper to coach here.

Ratios and rates

A **ratio** compares two amounts: 3 cups of flour for every 2 eggs. Students use **ratio tables** to scale it: 6 cups for 4 eggs, 9 cups for 6 eggs. A **unit rate** is the amount for one: if 3 pounds of apples cost \$4.50, one pound costs $\$4.50 \div 3 = \$1.50$. That is the math behind every "price per ounce" label in a grocery store.

Percents

Percent means "out of 100." Students are taught to find 10% first (move the decimal one place left) and build from there. 20% of 45: 10% is 4.5, so 20% is 9. This is the same mental math you use to figure a tip.

Negative numbers

Negative numbers are taught with a number line and with real things below zero: temperatures, money owed, floors below ground. "It's -3° and the temperature drops 5 more degrees" gives -8° .

The rule that confuses everyone is subtracting a negative: $4 - (-2) = 6$. One way to see it: the temperature is 4° , and a cold front that was going to take away 2° is canceled. Removing a drop is the same as a rise. Or think of the gap on a number line: from -2 up to 4 is 6 steps.

Variables and expressions

A letter in math is just a number we don't know yet, or a number that can change. $3n$ means "3 times some number." Students learn to write expressions from words: "five more than twice a number" is $2n + 5$.

Solving equations: keep it balanced

An equation is a balance scale. Both sides weigh the same, and whatever you do to one side you must do to the other to keep it level.

Whatever you do to one side, do to the other.

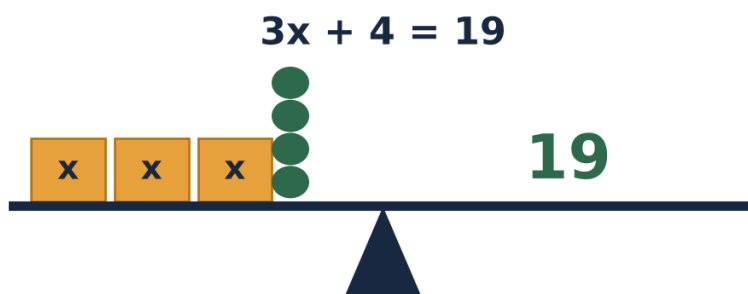


Figure 3.4. $3x + 4 = 19$ as a balance. Take 4 off both sides: $3x = 15$. Split both sides into 3 equal parts: $x = 5$.

Students are taught to check by putting the answer back in: $3 \times 5 + 4 = 19$. ✓ If your student checks every answer this way, they will rarely hand in a wrong one, and you can help with this step even if you don't remember how to solve it.

Eighth grade: functions and the Pythagorean theorem

By eighth grade, students graph straight lines, solve two equations at once, and learn the **Pythagorean theorem**: in a right triangle, $a^2 + b^2 = c^2$. A triangle with sides 3 and 4 has a long side of 5, because $9 + 16 = 25$. Builders use exactly this to check that a corner is square.

WATCH OUT

Many middle school struggles are really fraction struggles in disguise. A student who can't solve $\frac{x}{4} = 3$ or work with a ratio of $\frac{2}{3}$ often understands the algebra fine but is shaky on fractions from fourth and fifth grade. Check there first (Chapter 5).

High school: algebra, geometry and beyond

A typical US high school sequence is **Algebra 1**, **Geometry**, **Algebra 2**, then often **Precalculus**, and for some students **Calculus** or **Statistics**. Some schools combine these into "Integrated Math 1, 2, 3," which covers the same topics mixed together. Some students take Algebra 1 in eighth grade.

You may not remember much of this, and that's fine. In high school your job is not to teach the math. It is to manage the conditions that let your teenager learn it: time, habits, resources and asking for help early.

Algebra 1: functions and straight lines

The big idea is the **function**: a rule that turns one number into another. A lot of Algebra 1 is about straight-line functions, written $y = mx + b$. The b is where you start; the m (the **slope**) is how much it changes each step.

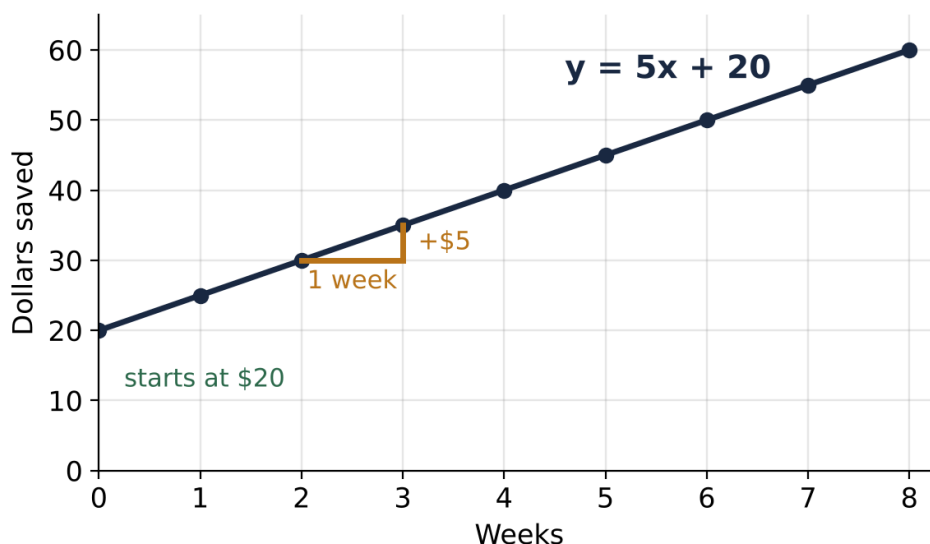


Figure 3.5. Starting with \$20 and saving \$5 a week: $y = 5x + 20$. The line starts at 20 and climbs 5 for every week. That climb is the slope.

A phone plan with a flat fee plus a cost per gigabyte, a taxi fare with a base charge plus a cost per mile: these are all $y = mx + b$. Algebra 1 also introduces **quadratics** (curved graphs like the arc of a thrown ball) and **exponents**.

Geometry: reasons, not just answers

High school geometry is often a student's first experience of **proof**: writing step-by-step reasons for why something must be true. Students who are used to "just getting the answer" can find this frustrating. You can help by asking the question proofs are built on: "How do you know that?" It's the same question from Chapter 2, at a higher level.

Algebra 2 and Precalculus: growth, cycles and models

These courses add **exponential functions** (things that double or grow by a percent, like savings with interest or a spreading rumor), **logarithms** (which answer "what power?" For example, 2 to what power is 8? The answer, 3, is

written $\log_2 8 = 3$), and **trigonometry** (triangles and repeating patterns like sound waves and tides).

Calculus and Statistics

Calculus is the math of change: how fast something is changing at an instant, and how changes add up. **Statistics** is the math of data and uncertainty: averages, spread, surveys and how sure we can be about a conclusion. Statistics is one of the most useful courses for everyday adult life, and it's a good option for students who aren't headed to calculus.

What a parent can do in high school

- **Ask to be taught.** "Show me what you're working on" is a real help. Explaining it is one of the best study methods there is.
- **Point to the resources.** The textbook's worked examples, the teacher's office hours or extra-help sessions, free video lessons online, a study group. A stuck teenager often hasn't tried these.
- **Watch the homework pattern, not the problems.** Is it getting done? Is it taking much longer than it used to? Are quiz grades sliding? Those are your early signals.
- **Get the right calculator.** Many courses expect a graphing calculator, and many classes use the free Desmos calculator online. The digital SAT has a Desmos calculator built in, so practice with it pays off.
- **Encourage asking questions in class.** Many teens would rather fail quietly than ask. Tell yours that teachers generally respect the student who asks.
- **Know the stakes.** High school math grades go on transcripts, and the courses build on each other. A weak Algebra 1 makes Algebra 2 much harder. Chapter 8 covers when to get help.

Word problems, at every age

Word problems are where students most often say "I don't know what to do." The arithmetic is usually fine. The trouble is turning words into math. The same five steps work from first grade to high school:

1. **Read it twice.** The first time for the story, the second time for the numbers.
2. **Say what's being asked.** "What are we trying to find?" in their own words.
3. **Draw it.** A quick sketch, a bar, a table. Anything.
4. **Estimate.** "About how big should the answer be?"
5. **Solve, then check it makes sense.** Read the question again with the answer in it.

The bar model

Many schools teach **bar models** (also called tape diagrams) to picture word problems. Here's one:

EXAMPLE

Maya has 3 times as many stickers as Leo. Together they have 48. How many does Leo have?

Draw one bar for Leo, and three bars of the same size for Maya. That's 4 equal bars making 48, so each bar is $48 \div 4 = 12$. Leo has 12. (Maya has 36, and $12 + 36 = 48$. ✓)

A sixth grader might solve this with a bar. A ninth grader writes $x + 3x = 48$. It's the same thinking, and the bar is often what makes the equation make sense.

WATCH OUT

Don't teach "key words" like "*altogether* means add" or "*left* means subtract." They fail often. "Sam has 5 apples. How many more does he need to have 12 altogether?" contains "altogether," but it's a subtraction problem. Understanding the story beats hunting for words.

The questions that matter more than the answers

When you give the answer, your student learns one problem. When you ask a good question, they learn how to get unstuck, and that works on every problem after it.

These questions work whether or not you know how to do the problem yourself. That's what makes them so useful. Pick two or three that feel natural to you and use them until they become habit.

When they say "I don't get it"

- "What is the question asking you to find?"
- "What do you know already? What information does it give you?"
- "Have you done a problem like this before? What did you do then?"
- "Can you draw it?"
- "What would you try first if you had to guess?"
- "Which part makes sense? Let's start there."

When they're partway through and stuck

- "Tell me what you've done so far."
- "What's the next step your teacher showed you?"
- "Is there an example in your notes or the book that looks like this?"
- "What if the numbers were smaller? Try it with easy numbers first."
- "Can you break it into smaller pieces?"

When they have an answer (right or wrong)

Ask the same questions whether the answer is right or wrong. If you only ask when it's wrong, your student will learn that your question means "you made a mistake," and they'll panic.

- "How did you get that?"
- "How could you check it?"
- "Does that answer make sense? Is it about the size you expected?"
- "Could you solve it a different way?"
- "Can you explain it to me like I'm in your class?"

When they're upset

- "This one's frustrating. Want to take a two-minute break and come back?"
- "You've figured out hard things before. Remember when [specific example]?"
- "Let's skip it, do the next one, and come back."
- "It's okay not to finish this one. Let's write down what you tried so your teacher knows where you got stuck."

THE WAIT

After you ask a question, count silently to ten before you say anything else. Most parents (and teachers) jump in after two or three seconds. The thinking happens in those quiet seconds. It will feel long. Do it anyway.

When you should just tell them

Questions aren't always the answer. It's fine to just explain when:

- It's a fact or a definition, not a skill ("What's a quotient?" "The answer to a division problem.").
- They've tried hard and are close to tears. Show one example, then let them do the next one alone.
- It's late and everyone is tired. A note to the teacher is better than a meltdown.

Questions by age

Age band	Questions that work well
K–2	"How many?" · "How do you know?" · "Show me with your fingers (or blocks)." · "Which is more?"
3–5	"Can you draw it?" · "Is that reasonable?" · "What's another way?" · "What's the same about these two problems?"
6–8	"What does the letter stand for?" · "How could you check?" · "What would happen if...?" · "What's your plan?"
9–12	"Teach me this part." · "Where in your notes is an example like this?" · "What would your teacher say first?" · "What's the question really asking?"

CHAPTER 5

Spotting and filling gaps

When a student struggles with today's math, the problem is often not today's math. It's something from one or two years ago that never got solid.

Math is built like a staircase. Each step stands on the one below. If a step is missing, a student can sometimes jump over it for a while, using memory and tricks, until the steps above it get too high. Then everything seems hard at once, and nobody can tell why.

Signs of a gap

- Homework takes much longer than it used to, and longer than classmates report.
- They can do it in class with help but not alone at home.
- The same kind of mistake keeps happening, on different topics.
- They count on fingers for facts they "should" know (past second grade for addition, past fourth grade for multiplication).
- They can follow steps but can't explain why.
- Grades drop suddenly in a new unit after being fine.
- They say "I hate math" when they used to be okay with it. Often this means "I'm lost and embarrassed."

Where today's struggle usually starts

Find what your student is struggling with in the left column. The right column is where to look first.

Struggling with...	Check this foundation	Usually taught in
Adding and subtracting 2- and 3-digit numbers	Place value (tens and ones), make-ten facts	K–1
Multiplication facts	Skip-counting, addition facts, equal groups	2–3
Multi-digit multiplication and long division	Multiplication facts, place value	3
Fractions (adding, comparing)	Multiplication facts, fractions on a number line, equivalent fractions	3–4
Decimals and percents	Place value, fractions as division	4–5
Ratios and proportions	Multiplication, division, fractions	4–6
Negative numbers	Number line, subtraction meaning	6
Solving equations	Order of operations, fractions, negative numbers	6–7

Graphing lines, slope	Coordinate plane, ratios, negative numbers	6–8
Algebra 1 overall	Fractions, negative numbers, equations	5–8
Geometry proofs	Angle facts, reasoning, algebra	7–9
Algebra 2, Precalculus	Algebra 1: factoring, exponents, functions	8–9

Notice how often fractions and multiplication facts appear. They are the two most common hidden gaps from elementary school through high school.

How to check for a gap, in fifteen minutes

1. **Find the foundation.** Use the table above to choose the earlier skill.
2. **Give two or three easy problems from that skill.** Not from today's homework. Write them yourself, or take them from a free workbook for the earlier grade.
3. **Watch, don't help.** Notice: are they fast and sure? Slow but right? Guessing?
4. **Ask them to explain one.** "How did you get that?" tells you more than the answer does.

Fast, sure and able to explain: that foundation is solid; look one step earlier or later. Slow, unsure or guessing: you've found something to work on.

How to fill a gap

- **Go back without making it a big deal.** Never say "this is third-grade stuff." Say "Let's warm up with some of these," or "Let's make sure the basics are rock solid."
- **Short and often beats long and rare.** Ten minutes, four or five days a week, for a few weeks will do more than a two-hour Saturday session.
- **Use pictures and objects again,** even with older students. Coins, measuring cups, graph paper and drawings are not babyish when they work.
- **Connect it forward.** Once the old skill is solid, show how it helps with today's homework. "See? That's the same fraction move you just practiced."
- **Tell the teacher.** A short, friendly note: "We noticed she's unsure about equivalent fractions and we're practicing at home." Teachers can watch for it and often have materials to share.

FREE PRACTICE BY GRADE

UpOnly's free workbooks and practice sets are organized by subject and grade, K–5, in English, Spanish and Portuguese. If you need problems from an earlier grade to check or fill a gap, that's what they're for. For students moving up a grade, the UpOnly Prepare books start with a short Readiness Check that sorts topics into solid, shaky and needs work.

Gaps versus a learning difference

Most struggles are gaps, and they fill with time and practice. Sometimes, though, a student works hard, gets good teaching, and still has unusual trouble with numbers: trouble telling which of two numbers is bigger, telling time, or remembering facts despite lots of practice, well past the age when classmates manage. That can be a sign of a learning difference such as **dyscalculia**. It's not about intelligence, and it's very treatable with the right support. Chapter 8 explains how to ask your school about it.

CHAPTER 6

Five-to-ten-minute everyday math

The most useful math practice often doesn't look like homework. It happens in the car, the kitchen and the grocery store, a few minutes at a time.

Everyday math does two jobs. It builds number sense, the feel for numbers that makes school math easier. And it shows your student, without a lecture, that math is something real people use. Keep it light. If it starts to feel like a quiz, stop and try again another day.

Kindergarten to 2nd grade

Where	Try this
Kitchen	Count spoons, eggs, crackers. "We have 7 crackers. If I eat 2, how many are left?"
Car	Find numbers on signs and license plates. "Which is bigger?" Count red cars to 20.
Store	"We need 6 apples. Count them into the bag." Weigh fruit: "Which bag is heavier?"
Games	Board games with dice (adding the two dice), card games like War (which is more?) and Go Fish for pairs that make 10.
Anywhere	"Make ten" call and answer: you say 3, they say 7.

3rd to 5th grade

Where	Try this
Kitchen	Double or halve a recipe. "We need $\frac{3}{4}$ cup, but we only have a $\frac{1}{4}$ cup. How many scoops?"
Store	Estimate the total before checkout. Who gets closest? Compare: "Is the big box really a better deal?"
Money	Give a small budget for snacks or a gift. They plan, add and make change.
Time	"We leave at 3:45 and it takes 25 minutes. When do we arrive?"
Games	Card games for multiplication (flip two cards, multiply), Yahtzee, dominoes, cribbage.
Sports	Points per game, laps and distances, batting averages as fractions.

6th to 8th grade

Where	Try this
Restaurant	Figure the tip. 10% first, then 20%. Split the bill evenly.

Store	Sale prices: "30% off \$40, what's the price?" Unit prices: price per ounce on two sizes.
Travel	"We're going 60 miles per hour and have 150 miles left. How long?" Read maps and scales.
Home	Measure a room to see if a piece of furniture fits. Area of a wall for paint.
Sports and games	Shooting percentages, win-loss ratios, probability in board games ("What are the chances of rolling a 7?").

High school

Topic	Try this
First paycheck	Hourly rate times hours, then compare with the take-home pay. Where did the rest go?
Phone plans and subscriptions	Compare two plans with different flat fees and per-unit costs. When does one become cheaper? (That's two lines crossing, straight out of Algebra 1.)
Cars	Gas cost for a road trip, the real cost of a car loan with interest, insurance quotes.
Saving and interest	How long to save for something? What does interest do over 10 years? Exponential growth, in their own money.
Data in the news	Look at a chart or poll together. "What does this actually show? What's missing?"
Cooking for a crowd	Scale a recipe from 4 servings to 10. Ratios and fractions together.

KEEP IT A GAME

Let your student catch *you*. Make an occasional deliberate mistake ("So 20% off \$50 is \$45, right?") and let them correct you. Students love it, and checking someone else's math is real math.

Homework without the battles

Most homework fights aren't about the math. They're about timing, energy, and who's in charge. Fix the routine and many of the fights go away.

Set up a routine

- **Same time, same place.** A predictable routine removes the daily negotiation. Some students need a snack and a break after school first; others do better starting right away. Find what works and stick to it.
- **A calm spot.** Pencils, paper, eraser, and for older students a calculator, all in one place. Screens off unless the homework needs them.
- **Start with something doable.** Do one easy problem first to get going. Momentum matters.
- **Short breaks for younger students.** For a young student, a few minutes of movement every 15 to 20 minutes can help.

Know your role

It's their homework, not yours. Your job is to be nearby, available and calm. That means:

- Don't sit over their shoulder unless they need it. Be in the room, doing your own thing.
- Don't correct every mistake. Homework shows the teacher what the student can and can't do. If you fix it all, the teacher learns nothing.
- Don't do problems for them, even when it would be faster.
- Do help them get unstuck with the questions in Chapter 4.

When they're stuck for real

1. Ask two or three questions from Chapter 4.
2. Look at class notes or the textbook example together.
3. Try the problem with smaller, easier numbers.
4. Skip it and come back after the others.
5. Still stuck? Write a note on the page: "Tried this for 10 minutes; stuck on the second step." That's useful information for the teacher, not a failure.

Set a time limit

Ask the teacher roughly how long math homework should take. If your student regularly takes much longer, stop at a sensible point and send a short note. Homework that takes two hours every night is a signal that something needs to change: a gap, a mismatch with the class, or too much work. The teacher needs to know.

When there are tears

- Stop. Nothing useful happens while a student is crying.
- Name it: "This is really frustrating. That's okay."
- Take a real break: water, a walk, a snack.
- Come back to an easier problem, or decide together to stop for tonight.
- Later, when calm, ask: "What was the hardest part?" That answer is often the gap.

For teens: step back gradually

- Agree on expectations together: when homework happens, where, and what happens with the phone.
- Check the school's online gradebook once a week, not every day. Talk about patterns, not single assignments.
- Let them handle their own teacher emails and extra-help sessions. Coach them on what to say if they need it.
- Stay curious: "What are you working on in math right now?" over dinner is a fine check-in.

Calculators and apps

Follow the teacher's rules. In elementary school, calculators usually aren't allowed for homework, because the point is the arithmetic. From middle school on, calculators are often fine for checking answers. Photo-solving apps can show a correct answer and steps, but a student who copies them learns nothing and is caught out on the test. Use them, if at all, to check after trying.

Working with the teacher

The teacher is your best ally. A short, friendly email works best:

A NOTE THAT WORKS

"Hi Ms. Rivera, Jordan has been taking about an hour on math homework and gets stuck on the multi-step word problems. We're practicing at home. Is there anything you'd recommend, or anything you're seeing in class?
Thank you!"

It describes what you see, says what you're doing, and asks for their view. No blame on either side.

CHAPTER 8

When to get extra help

Parent help is enough most of the time. But sometimes a student needs more than a parent can give, and knowing when is part of the job.

Home help is probably enough when...

- Your student struggles with a topic but improves with practice over a few weeks.
- Grades are steady or getting better.
- They can usually explain what they did.
- Homework is hard sometimes, but not every night.
- The gap you found (Chapter 5) is filling.

Consider extra help when...

- Grades keep slipping across several weeks or units, even with practice at home.
- Homework regularly causes tears or fights despite a good routine.
- You've filled one gap, and another and another keep appearing.
- Your student is past what you can follow and isn't using school help.
- Your student is anxious about math in a way that affects school or sleep.
- The relationship is suffering. Sometimes another adult can say the same thing and be heard. That's not a failure; it's normal.

Your options, roughly from free to costly

Option	Good for
The teacher (extra help, office hours, a conference)	The first step, always. Free, and they know exactly what's being taught.
School supports (math intervention, homework club, peer tutoring)	Many schools have these. Ask the teacher or counselor what's available.
Free practice and video lessons online	Filling specific gaps; reviewing a topic explained a second way.
Library programs, community centers, older students	Low-cost homework help; a high school student who's good at math can be a great helper for a younger one.
A private tutor or learning center	Bigger gaps, test preparation, a student who needs one-on-one attention or a fresh voice.
A school evaluation	When you suspect a learning difference (see below).

Choosing a tutor

If you do go that route, look for someone who:

- Starts by finding out what your student knows and doesn't, not just helping with tonight's homework.
- Asks your student to explain their thinking, rather than doing problems for them.
- Knows the methods your student's school uses, or is willing to learn them.
- Gets along with your student. A good relationship matters as much as expertise.
- Tells you what they're working on and how it's going.

If you suspect a learning difference

If your student has persistent, unusual difficulty with numbers despite good teaching and lots of practice, talk to the teacher and ask about an evaluation. In the United States, parents can request in writing that their public school evaluate their student for a learning disability, at no cost to the family. The school, a pediatrician or a psychologist can explain the process. Students with dyscalculia or other learning differences can do very well with the right support, and getting it early makes a real difference.

Math anxiety

Some students understand the math but freeze on tests or panic at the sight of a worksheet. Signs include stomachaches before math class, blanking on tests despite knowing the material, and avoiding anything with numbers. The ideas in Chapter 2 help. So does practicing in low-stakes ways and talking to the teacher about what you're seeing. If anxiety is affecting your student's daily life, talk to the school counselor or your pediatrician.

THE BOTTOM LINE

Getting help is not a sign that you, or your student, have failed. It's what good parents do when a problem is bigger than the kitchen table. The earlier, the easier.

The grade-by-grade map, K–12

What most US schools teach each year, based on the Common Core State Standards and the usual high school course sequence. Your state or school may differ a little; the order of ideas is very similar everywhere.

Grade	The big ideas
Kindergarten	Counting to 100 by ones and tens; how many objects; comparing numbers; adding and subtracting within 10; flat and solid shapes.
1st	Adding and subtracting within 20; tens and ones; counting to 120; comparing two-digit numbers; measuring length; telling time to the half hour.
2nd	Fast addition and subtraction within 20; adding and subtracting within 100 and 1,000; hundreds, tens and ones; money; time to 5 minutes; bar graphs.
3rd	Multiplication and division within 100; all multiplication facts from memory; fractions as numbers; area and perimeter; rounding.
4th	Multi-digit multiplication; division with remainders; equivalent fractions; adding fractions with like denominators; decimals to hundredths; angles.
5th	Adding fractions with unlike denominators; multiplying fractions and simple fraction division; decimals to thousandths; volume; the coordinate plane.
6th	Ratios and rates; percents; dividing fractions; negative numbers; expressions and one-step equations; area and surface area; statistics.
7th	Proportional relationships; operations with negative numbers; multi-step equations and inequalities; circles; probability.
8th	Linear equations and graphs; functions; systems of equations; exponents and scientific notation; the Pythagorean theorem; transformations. (Some students take Algebra 1.)
Algebra 1	Functions; slope and lines; systems; exponents; quadratics and factoring; basic statistics.
Geometry	Proof; congruence and similarity; right triangles and basic trigonometry; circles; area and volume.
Algebra 2	Polynomials; exponential and logarithmic functions; more trigonometry; sequences; probability and statistics.
Precalculus	Functions in depth; trigonometry; vectors; preparation for calculus.
Calculus / Statistics	Rates of change and accumulation (calculus); data, sampling and inference (statistics).

Math words, translated for parents

Area model

Multiplying by drawing a rectangle split into parts, one part for each place (tens, ones). See Figure 3.2.

Array

Objects in equal rows and columns. 3 rows of 5 shows 3×5 .

Bar model / tape diagram

Rectangles drawn to show the quantities in a word problem.

Coefficient

The number in front of a letter. In $7x$, the coefficient is 7.

Decompose

Break a number into parts. 47 decomposed is $40 + 7$.

Denominator / numerator

Bottom / top of a fraction. The denominator says how many equal parts make a whole; the numerator says how many of them you have.

Equivalent fractions

Different names for the same amount: $\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$.

Expression vs. equation

An expression has no equal sign ($2x + 5$). An equation says two things are equal ($2x + 5 = 11$).

Fact fluency

Knowing basic facts quickly and accurately, without counting.

Function

A rule that gives exactly one output for each input.

Integer

A whole number, or its negative, or zero: ..., -2, -1, 0, 1, 2, ...

Number bond

A picture showing a number split into two parts: 10 is 6 and 4.

Number sense

A feel for numbers: what's bigger, about how much, whether an answer is reasonable.

Partial products / partial quotients

Multiplying or dividing in friendly chunks and then adding them up.

Place value

The value of a digit by its position. In 352, the 5 means 50.

Product, quotient, sum, difference

The answers to multiplication, division, addition and subtraction.

Regroup

The new word for "carry" and "borrow": trading ten ones for one ten, or the reverse.

Slope

How steep a line is: how much it goes up for each step to the right.

Unit rate

The amount for one: miles per hour, dollars per pound.

Variable

A letter that stands for a number that's unknown or can change.

CUT OUT AND KEEP ON THE FRIDGE

When they're stuck, say...

To get started

"What is the question asking?"

"What do you already know?"

"Can you draw it?"

"What would you try first?"

When they have an answer

"How did you get that?"

"How could you check it?"

"Does it make sense?"

"Explain it to me like I'm in your class."

When they're stuck

"Show me what you've done so far."

"Is there an example in your notes?"

"Try it with smaller numbers."

"Skip it and come back."

When it's hard

"You can't do it yet."

"Interesting mistake. Let's find out what happened."

"Let's take a two-minute break."

"You've figured out hard things before."

Remember: ask, then wait ten seconds. Praise effort and strategy. Calm beats correct.



UPONLY LEARNING

Your next step starts here

Free workbooks, practice sheets and parent guides, plus printable books for every grade we cover, in English, Spanish and Portuguese. We keep adding new grades and subjects, so see what's new on our website.

Visit uponlylearning.com



Scan with your phone's camera

Also free: **The Parent's Reading Guide**, the companion to this guide.

HELP US MAKE THIS GUIDE BETTER

We are constantly updating our material so it keeps getting better. If you spot a mistake, or something that didn't make sense, photograph the page and email it to support@uponlylearning.com. We read every message.

The Parent's Math Guide. © 2026 UpOnly Learning, LLC. Free to download and to print for your own family. This guide offers general educational information; it is not a substitute for advice from your student's teacher, school, or a qualified professional.

One step at a time.