Oklahoma OSTP Grade 4 Math Step by Step

A Beginner Friendly Guide to Learning Math

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PREVIEW

ONE STEP AT A TIME

Grade 4 Math Step-by-Step

Every math problem can be broken into steps.

This book shows you exactly how to solve every type of Grade 4 math problem. Each topic is broken into clear, numbered steps with examples that walk you through the process from start to finish.

Read the Steps ***Follow Along*** ***Try It Yourself***

> *When you learn the steps, you can solve any problem — even ones you've never seen before!*

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How to Use This Book

Every topic follows the same road map. Here's what to expect.

Step Goal

Each topic tells you upfront what skill you're building. This helps you know where you're headed.

Road Map

A visual overview of the steps you'll follow. Think of it as your problem-solving recipe.

Major Steps

The numbered steps that show you exactly what to do. Each step has a clear action and an example.

Step Example

After the steps, a full worked example puts everything together so you can see the steps in action.

Owlbert's Tips

Shortcuts, memory tricks, and advice to make each step easier to remember.

Step Practice

Practice problems to try. Follow the steps you just learned!

***Answers** to every practice problem are in the **Answer Key** at the back of the book!*

PREVIEW

How Every Topic Works

Every topic follows this flow. You'll get the hang of it fast!

Step Goal — *What you'll learn*

Road Map — *Overview of all steps*

Major Steps (1, 2, 3...) — *Do this, then this*

Step Example — *See all steps in action*

Step Practice — *Now you try!*

Check Your Answers — *Answer Key at the back*

Pro tip: *When you hit a tricky problem, go back to the* ***Major Steps*** *and follow them one at a time. The steps work for every problem of that type!*

PREVIEW

X^1 Math Symbols You Should Know X^1

You'll see these symbols throughout this book!

Symbol	Name	What It Means	Example
$+$	Plus (Add)	Combine amounts together.	$3{,}456 + 1{,}234 = 4{,}690$
$-$	Minus (Subtract)	Find the difference.	$5{,}000 - 2{,}378 = 2{,}622$
$\times$	Times (Multiply)	Repeated groups.	$43 \times 12 = 516$
$\div$	Divide	Split into equal groups.	$84 \div 7 = 12$
$=$	Equals	Both sides have the same value.	$\frac{2}{4} = \frac{1}{2}$
$>$	Greater Than	The left side is larger.	$\frac{3}{4} > \frac{1}{2}$
$<$	Less Than	The left side is smaller.	$0.25 < 0.5$
$\frac{a}{b}$	Fraction Bar	a parts out of b equal parts.	$\frac{3}{8} = 3$ *out of* 8
$.$	Decimal Point	Separates whole from parts.	$3.75 = 3$ *and* $\frac{75}{100}$
$\angle$	Angle	Two rays sharing an endpoint.	$\angle ABC = 90°$
$\parallel$	Parallel	Lines that never cross.	$\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$
$\perp$	Perpendicular	Lines that form a $90°$ angle.	$\overleftrightarrow{EF} \perp \overleftrightarrow{GH}$

PREVIEW

Key Math Words for Grade 4

- ***Factor*** — *a number you multiply by*
- ***Product*** — *the answer when you multiply*
- ***Quotient*** — *the answer when you divide*
- ***Remainder*** — *what's left over after dividing*
- ***Prime*** — *divisible only by* 1 *and itself*
- ***Composite*** — *has more than two factors*
- ***Numerator*** — *top number of a fraction*
- ***Denominator*** — *bottom number of a fraction*
- ***Mixed Number*** — *whole part + fraction part*
- ***Decimal*** — *a number with a decimal point*
- ***Equivalent*** — *fractions with the same value*
- ***Perimeter*** — *distance around a shape*
- ***Area*** — *space inside a shape*
- ***Acute Angle*** — *less than* $90°$
- ***Right Angle*** — *exactly* $90°$
- ***Obtuse Angle*** — *greater than* $90°$

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CHAPTER

1

Multiply, Divide, and Patterns

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1.1 Multiplication as a Comparison

What You'll Learn

- Understand what "times as many" means
- Write multiplication equations from comparison sentences

Words to Know

- ***Times as many*** — One group is multiplied to get the other. "3 times as many as 5" means 3×5.
- ***Multiplicative comparison*** — Comparing two amounts by asking how many **times** bigger one is.
- ***Equation*** — A math sentence with an equal sign, like $3 \times 5 = 15$.

How to Solve "Times As Many" Problems

1. Read the problem. Find the two amounts being compared.
2. Find the words "times as many" or "times as much." The number before those words is the **multiplier**.
3. Write a multiplication equation: multiplier $\times$ smaller amount $=$ answer.
4. Multiply to find the answer.

Example: Jake has 5 toy cars. Emma has 4 times as many. How many does Emma have?

Step 1 *Two amounts: Jake has 5, Emma has more.*

Step 2 *The multiplier is 4 ("4 times as many").*

Step 3 *Equation: $4 \times 5 = ?$*

Step 4 *Multiply: $4 \times 5 = 20$.*

✔ *Emma has 20 toy cars.*

Example: "42 is 6 times as many as what number?"

Step 1 *Two amounts: the big number is 42, the small number is unknown.*

Step 2 *The multiplier is 6.*

Step 3 *Equation: $6 \times ? = 42$. Divide to find the unknown: $42 \div 6$.*

Step 4 $42 \div 6 = 7$.

✔ *42 is 6 times as many as 7.*

⚠ ***Watch Out!*** *"More than" means ADD. "Times as many" means MULTIPLY. Don't mix them up!* 5 ***more than*** 3 *is* 8*, but* 5 ***times as many as*** 3 *is* 15.

Multiplication as a Comparison Practice

Write the Equation

1. 6 times as many as 3 = _____

2. 4 times as many as 7 = _____

Find the Missing Number

3. $5\times$ _____ $= 35$

4. _____ $\times 8 = 48$

Put It All Together

5. A giraffe is 6 meters tall. A tree is 3 times as tall as the giraffe. How tall is the tree?

Answer: _____ meters

6. Sam has 56 stickers. That is 8 times as many as Lily. How many stickers does Lily have?

Answer: _____ stickers

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CHAPTER

2

Adding, Subtracting, Multiplying, and Dividing Whole Numbers

What's Inside

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2.1 Add Whole Numbers

What You'll Learn

- Add multi-digit whole numbers using the standard algorithm
- Regroup (carry) when a column adds to 10 or more

Words to Know

- **Sum** — The answer when you add numbers together.
- **Regroup (Carry)** — When a column adds to 10 or more, write the ones digit and carry the tens digit to the next column.
- **Standard Algorithm** — The step-by-step method of adding column by column from right to left.

How to Add Multi-Digit Numbers

1. Write the numbers stacked, lined up by place value (ones under ones, tens under tens).
2. Add the **ones** column. If the sum is 10 or more, write the ones digit and carry the tens digit.
3. Add the **tens** column, including any carried digit.
4. Continue left through each column (hundreds, thousands) until done.

Example: Add $2{,}465 + 3{,}287$.

Step 1 *Write the numbers stacked:* $2{,}465$ *on top,* $3{,}287$ *below, digits lined up.*

Step 2 *Ones:* $5 + 7 = 12$. *Write* 2, *carry* 1.

Step 3 *Tens:* $6 + 8 + 1 = 15$. *Write* 5, *carry* 1.

Step 4 *Hundreds:* $4 + 2 + 1 = 7$. *Thousands:* $2 + 3 = 5$.

✔ $2{,}465 + 3{,}287 = 5{,}752$

Example: Add $4{,}596 + 1{,}738$.

Step 1 *Stack the numbers, lined up by place value.*

Step 2 *Ones:* $6 + 8 = 14$. *Write* 4, *carry* 1.

Step 3 *Tens:* $9 + 3 + 1 = 13$. *Write* 3, *carry* 1.

Step 4 *Hundreds:* $5 + 7 + 1 = 13$. *Write* 3, *carry* 1. *Thousands:* $4 + 1 + 1 = 6$.

✔ $4{,}596 + 1{,}738 = 6{,}334$

⚠ ***Watch Out!*** *Don't forget to add the carried digit! Write it small above the next column so you don't miss it.*

Addition Practice

Set Up the Problem

1. *Write* $3{,}572 + 4{,}689$ *stacked by place value. Which column do you start adding from?*

Add Step by Step

2. $547 + 386 =$ _____

3. $2{,}835 + 4{,}697 =$ _____

Put It All Together

4. $6{,}284 + 3{,}957 =$ _____

5. $15{,}463 + 7{,}849 =$ _____

6. *A library has* $3{,}478$ *fiction books and* $2{,}965$ *non-fiction books. How many books does the library have in all?*

Answer: _____ *books*

PREVIEW

THANK YOU

Enjoyed This Preview?

Get the Full Book!

This preview shows just a small sample of what's inside.

The complete book includes:

- *All chapters and topics*
- *Hundreds of practice problems*
- *Complete answer key with explanations*
- *Colorful visuals and step-by-step examples*
- *Reference sheets and progress trackers*

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