
MULTI-DIGIT DIVISION FLUENCY BOOT CAMP

Standard Algorithm Mastery

DMSB Method • Grade 6



RECRUIT TO LIEUTENANT

50 Problems • 4 Training Weeks • Final Mission

Aligned to CCSS 6.NS.B.2

Fluently divide multi-digit numbers using the standard algorithm.

UM Printables

DMSB ANCHOR CHART

The DMSB method is the standard algorithm for long division. Follow these four steps in order, repeating until the division is complete.

[D] DIVIDE

Divide the working number by the divisor. Write the result in the quotient.

How many times does the divisor go into the working number?

[M] MULTIPLY

Multiply the quotient digit by the divisor. Write the product under the working number.

This is the number you will subtract.

[S] SUBTRACT

Subtract the product from the working number. Write the difference below.

The difference must be less than the divisor.

[B] BRING DOWN

Bring down the next digit from the dividend. This creates the new working number.

Repeat from [D] with the new working number.

Special Case: Zero in the Quotient

If the working number is less than the divisor, write **0** in the quotient and bring down the next digit. This is common in Week 4 problems.

Example: If working number is 10 and divisor is 52, then $10 < 52$, so write 0 in the quotient and bring down the next digit.

BASIC TRAINING — WEEK 1

1-digit divisors • No remainders

1. $144 \div 6 =$ _____

3. $315 \div 5 =$ _____

5. $729 \div 9 =$ _____

7. $504 \div 7 =$ _____

9. $952 \div 8 =$ _____

2. $256 \div 8 =$ _____

4. $492 \div 4 =$ _____

6. $368 \div 4 =$ _____

8. $846 \div 6 =$ _____

10. $276 \div 3 =$ _____

BASIC TRAINING — WEEK 3

2-digit divisors

1. $1152 \div 24 =$ _____

3. $5775 \div 75 =$ _____

5. $3920 \div 56 =$ _____

7. $4956 \div 84 =$ _____

9. $2184 \div 28 =$ _____

2. $3696 \div 42 =$ _____

4. $8256 \div 64 =$ _____

6. $6552 \div 36 =$ _____

8. $7344 \div 68 =$ _____

10. $9405 \div 95 =$ _____

STUDENT PROGRESS TRACKER

Track your progress through the boot camp! Mark each problem as you complete it. Earn rank promotions as you master each level.

Rank Promotions

Problems	Rank	Milestone
0	Recruit	Start of training
10	Private	Week 1 complete
20	Private First Class	Week 2 complete
30	Corporal	Week 3 complete
40	Sergeant	Week 4 complete
45	Staff Sergeant	Final Mission halfway
50	Lieutenant	All missions accomplished!

Weekly Completion

Week 1: Problems 1–10

Week 2: Problems 11–20

Week 3: Problems 21–30

Week 4: Problems 31–40

Final Mission: Problems 41–50

Current Rank: _____ Total Problems Completed: _____ / 50

FINAL MISSION

Apply your division skills to real-world scenarios.

1. A military base received 8,463 MRE (Meal Ready-to-Eat) packs to distribute equally among 9 platoons. How many MRE packs does each platoon receive, and how many are left over for the commanding officer?

$$8463 \div 9 = \underline{\hspace{2cm}}$$

2. During a training exercise, soldiers marched a total of 7,296 meters over 8 days, covering the same distance each day. How many meters did they march per day?

$$7296 \div 8 = \underline{\hspace{2cm}}$$

3. The quartermaster issued 5,775 rounds of ammunition equally to 75 soldiers for target practice. How many rounds did each soldier receive?

$$5775 \div 75 = \underline{\hspace{2cm}}$$

4. A convoy transported 53,040 pounds of supplies across 52 vehicles, each carrying the same load. How many pounds did each vehicle carry?

$$53040 \div 52 = \underline{\hspace{2cm}}$$

5. Recruits completed 9,556 push-ups in total during a 7-week fitness program, doing the same number each week. How many push-ups did they complete per week, and how many extra push-ups were needed to make the total exact?

$$9556 \div 7 = \underline{\hspace{2cm}}$$

6. A supply depot stored 73,440 gallons of fuel in 36 identical fuel drums. How many gallons does each drum hold?

$$73440 \div 36 = \underline{\hspace{2cm}}$$

7. During a 28-day field operation, a battalion consumed 2,184 meals total. If the same number of meals was consumed each day, how many meals were served daily?

$$2184 \div 28 = \underline{\hspace{2cm}}$$

8. A communications unit laid 90,720 feet of cable along 18 separate trench lines of equal length. How many feet of cable were laid in each trench?

$$90720 \div 18 = \underline{\hspace{2cm}}$$

9. The motor pool serviced 6,552 vehicle parts over 36 work days, processing the same number each day. How many parts were serviced per day?

$$6552 \div 36 = \underline{\hspace{2cm}}$$

10. An ammunition depot stores 48,960 bullets in 12 crates of equal size. If each crate has internal dividers creating 40 equal compartments, how many bullets are in each compartment?

Then divide the quotient by 40 to find bullets per compartment.

$$48960 \div 12 = \underline{\hspace{2cm}}$$

$$\begin{array}{r}
 5 \overline{) 315} \\
 \underline{30} \\
 15 \\
 \underline{15} \\
 0
 \end{array}$$

[D] Divide: $31 \div 5 = 6$ (5 goes into 31 6 times)

[M] Multiply: $6 \times 5 = 30$ (write 30 under 31)

[S] Subtract: $31 - 30 = 1$

[B] Bring down 5 → new working number is 15

[D] Divide: $15 \div 5 = 3$ (5 goes into 15 3 times)

[M] Multiply: $3 \times 5 = 15$ (write 15 under 15)

[S] Subtract: $15 - 15 = 0$

Answer: $315 \div 5 = 63$

Check: $63 \times 5 = 315$ [CORRECT]

4. $492 \div 4$

$$\begin{array}{r}
 4 \overline{) 492} \\
 \underline{4} \\
 9 \\
 \underline{8} \\
 12 \\
 \underline{12} \\
 0
 \end{array}$$

[D] Divide: $4 \div 4 = 1$ (4 goes into 4 1 time)

[M] Multiply: $1 \times 4 = 4$ (write 4 under 4)

[S] Subtract: $4 - 4 = 0$

[B] Bring down 9 → new working number is 9

[D] Divide: $9 \div 4 = 2$ (4 goes into 9 2 times)

[M] Multiply: $2 \times 4 = 8$ (write 8 under 9)

[S] Subtract: $9 - 8 = 1$

[B] Bring down 2 → new working number is 12

[D] Divide: $12 \div 4 = 3$ (4 goes into 12 3 times)

[M] Multiply: $3 \times 4 = 12$ (write 12 under 12)

[S] Subtract: $12 - 12 = 0$

Answer: $492 \div 4 = 123$

Check: $123 \times 4 = 492$ [CORRECT]

5. $729 \div 9$

ERROR ANALYSIS GUIDE

Use this guide to diagnose and correct common division errors.

1. Incorrect Quotient Digit

Symptom: Student chooses a quotient digit that is too large or too small.

Check: Always verify: $\text{partial_q} \times \text{divisor} \leq \text{working number}$, and $(\text{partial_q} + 1) \times \text{divisor} > \text{working number}$.

Fix: Remind student: the quotient digit is the LARGEST number where the product doesn't exceed the working number.

2. Subtraction Error

Symptom: Student makes an arithmetic mistake when subtracting.

Check: Check each subtraction: $\text{working number} - \text{product} = \text{difference}$. Difference must be $< \text{divisor}$.

Fix: Practice basic subtraction facts. Encourage writing the subtraction step explicitly.

3. Forgotten Zero in Quotient

Symptom: Student skips a position when the working number is less than the divisor.

Check: If $\text{working number} < \text{divisor}$, a 0 must be placed in the quotient before bringing down the next digit.

Fix: Use Week 4 problems for targeted practice. Emphasize that every digit position in the quotient must be filled.

4. Wrong Bring-Down

Symptom: Student brings down the wrong digit or forgets to bring down.

Check: Each digit of the dividend must be brought down exactly once, in order from left to right.

Fix: Have the student point to each digit as they bring it down.

5. Remainder Too Large

Symptom: The remainder is greater than or equal to the divisor.

Check: If $\text{remainder} \geq \text{divisor}$, the last quotient digit was too small.

Fix: Increase the last quotient digit and recalculate. The remainder must ALWAYS be less than the divisor.

WHAT'S INSIDE

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Full Resource: 40 Practice Problems + 10 Word Problems + Complete Answer Key

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10

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KEY FEATURES

- ✓ DMSB Step-by-Step Worked Solutions for Every Problem
- ✓ Long Division Visual Notation with Bracket Format
- ✓ Military Boot Camp Theme with Rank Promotions
- ✓ CCSS 6.NS.B.2 Aligned with Detailed Standards Mapping
- ✓ Error Analysis Guide for Common Division Mistakes
- ✓ Student Progress Tracker with 4 Promotion Ranks