



SimpleSteps

for Fifth Grade

Grade
5

**Your
step-by-step
guide to
learning
success**

**Skill building
for math and
language arts**

**Clear, simple
explanations
with color-coded
examples**

**Activities and
problems
designed to
reinforce school
concepts**

Multi-Digit Multiplication

Multiplication is the way to find sums of equal groups of numbers. Follow these steps to multiply numbers with more than one digit. Be careful to regroup as needed. Use zeros as placeholders to help you line up partial products correctly.

Solve: 54×37

First, write the problem vertically. Place the factor with the most digits on top.

$$\begin{array}{r} 2 \\ 54 \\ \times 37 \\ \hline 378 \end{array}$$

Next, use **place value** to break the smaller factor up. 37 can be broken up into **30** and **7**.

$$\begin{array}{r} 54 \\ \times 30 \\ \hline \end{array}$$

$$\begin{array}{r} 54 \\ \times 7 \\ \hline \end{array}$$

Then, **multiply** 54 by 30 and by 7. Work right to left.

$$\begin{array}{r} 54 \\ \times 30 \\ \hline 1620 \end{array}$$

$$\begin{array}{r} 54 \\ \times 7 \\ \hline 378 \end{array}$$

Finally, **add** the results to find the **final product**.

$$\begin{array}{r} 1620 \\ + 378 \\ \hline 1998 \end{array}$$

$$\begin{array}{r} 54 \\ \times 37 \\ \hline 1,998 \end{array}$$

Practice

1.
$$\begin{array}{r} 73 \\ \times 21 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 45 \\ \times 44 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 76 \\ \times 32 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 93 \\ \times 39 \\ \hline \end{array}$$

Multi-Digit Multiplication

Follow these steps to multiply by larger numbers.

When you multiply by a three-digit number, you also add a row with two zeros to align your third product starting in the **hundreds** column.

$$\begin{array}{r} 872 \\ \times 494 \\ \hline 3488 \\ 78480 \\ + 348800 \\ \hline 430,768 \end{array}$$

When you multiply by a four-digit number, you will also insert another row with three zeros to align your answer starting in the **thousands** column.

$$\begin{array}{r} 2312 \\ \times 1341 \\ \hline 2312 \\ 92480 \\ 693600 \\ + 2312000 \\ \hline 3,100,392 \end{array}$$

Practice

Solve the following problems. Show your work.

1.
$$\begin{array}{r} 143 \\ \times 142 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 1503 \\ \times 741 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 4610 \\ \times 1239 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 1225 \\ \times 242 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 774 \\ \times 455 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 1811 \\ \times 1021 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 3789 \\ \times 532 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 5925 \\ \times 1112 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 596 \\ \times 589 \\ \hline \end{array}$$

Dividing by 2-Digit Numbers

To divide by two-digit numbers, set up the division problem using a long division symbol. Be careful to keep columns aligned correctly, and remember to write the remainder at the top when you finish.

Solve: $14 \overline{)718}$

First, estimate to find the first digit in the **quotient**. Think: How many times does the **divisor** go into the hundreds and tens place of the **dividend**?

Then, multiply the **tens digit** of the quotient by the **divisor**. Subtract the result from the hundreds and tens place of the **dividend**. Bring down the ones place from the dividend to get the total number of ones left in the dividend.

Finally, repeat the process for the ones digit. Estimate how many times the **divisor** goes into the ones. Multiply the **ones digit** of the quotient by the divisor. Subtract the result from the total number of ones to get the **remainder**. Record the remainder with the rest of the **quotient**.

Hint: The remainder must always be less than the divisor.

$$\begin{array}{r} 5 \\ 14 \overline{)718} \end{array}$$

14 goes into **71** at least **5** times. The tens digit of the **quotient** is **5**.

$$\begin{array}{r} 5 \\ 14 \overline{)718} \\ -70 \downarrow \\ \hline 18 \end{array}$$

14 \times **5** = **71**.
71 - **70** = **1**
 There are 18 ones left in the dividend.

$$\begin{array}{r} 51r4 \\ 14 \overline{)718} \\ -70 \downarrow \\ \hline 18 \\ -14 \\ \hline 4 \end{array}$$

14 goes into 18 at least **1** time. The ones digit of the **quotient** is **1**.
14 \times **1** = **14**
18 - **14** = **4**
14 cannot divide 4, so the remainder is **4**.

1. $17 \overline{)770}$

2. $29 \overline{)850}$

3. $52 \overline{)989}$

Dividing by 2-Digit Numbers

For longer dividends, continue repeating the steps of division until there are no digits left in the dividend to divide.

Solve: $32 \overline{)7980}$

First, estimate how many times the **divisor** goes into the thousands and hundreds place of the **dividend**.

Multiply the **hundreds digit** of the quotient by the **divisor**. Subtract the result from the thousands and hundreds place of the **dividend**. Bring down the tens place to get the total number of tens left in the dividend.

Then, continue to estimate, multiply, subtract, and bring down until there are no digits left in the dividend to divide. Finally, write the remainder at the top.

$$\begin{array}{r} 2 \\ 32 \overline{)7980} \\ - 64 \downarrow \\ \hline 158 \end{array}$$

32 goes into **79** at least **2** times. The hundreds digit of the **quotient** is **2**.

$$32 \times 2 = 64$$

$$79 - 64 = 15$$

There are 158 tens left in the dividend.

$$\begin{array}{r} 249 \text{ r}12 \\ 32 \overline{)7980} \\ - 64 \downarrow \\ \hline 158 \\ - 128 \downarrow \\ \hline 300 \\ - 288 \downarrow \\ \hline 12 \end{array}$$

32 goes into 158 at least **4** times.

$$32 \times 4 = 128$$

$$158 - 128 = 30.$$

There are 300 ones left in the dividend.

32 goes into 300 at least **9** times.

$$32 \times 9 = 288$$

$$300 - 288 = 12$$

The remainder is **12**.

Practice

Solve the following problems.

1. $31 \overline{)1893}$

2. $33 \overline{)1095}$

3. $42 \overline{)2792}$

Dividing by 2-Digit Numbers

Practice

Solve the following problems.

1. $23 \overline{)264}$

2. $46 \overline{)857}$

3. $58 \overline{)2439}$

4. $32 \overline{)571}$

5. $28 \overline{)635}$

6. $21 \overline{)4,670}$

7. $21 \overline{)491}$

8. $19 \overline{)412}$

9. $17 \overline{)4,990}$

10. $38 \overline{)1460}$

11. $33 \overline{)1812}$

12. $42 \overline{)2792}$

Problem Solving

You can use the multiplication strategies you have learned so far to solve more difficult problems.

First, underline the **important information** that you will need to solve the problem.

Next, determine which **operation** is best for solving the problem.

Then, write the problem, with the digits aligned.

Finally, solve the problem.

Students in Thornton's schools are collecting cans and bottles for a charity drive. They are having a contest to see which students and which schools collect the most cans and bottles. The contest lasts **15 weeks**. One student, Raul, collects **33 cans per week**. How many cans does Raul collect during the contest?

Raul collects the same number of cans each week. So, we can **multiply** the number of cans collected per week, **33**, by the number of weeks, **15**.

$$\begin{array}{r} 33 \\ \times 15 \\ \hline \end{array}$$

Multiply by 5 ones and regroup 1 ten.

$$\begin{array}{r} 1 \\ 33 \\ \times 15 \\ \hline 165 \end{array}$$

Multiply by 1 ten. Use a zero as a placeholder.

$$\begin{array}{r} 33 \\ \times 15 \\ \hline 165 \\ + 330 \\ \hline 495 \end{array}$$

Raul collected 495 cans.

Practice

Solve the problem. Show your work in the space provided.

1. Elmhurst has 328 students. Each student collects 28 cans during the charity drive contest. How many cans do the students collect?

1.

You can use the division strategies you have learned so far to solve more difficult problems.

First, underline the **important information** that you will need to solve the problem.

Next, determine which **operation** is best for solving the problem.

Then, write the problem.

Finally, solve the problem.

Several students at Milton Middle School talk about the trips they took last summer. They compare the distances and times they spent traveling. Alice's family drove a **total of 495 miles** in **11 hours**. What was their **average speed** for the trip?

Speed compares the total distance traveled to the total time. To find the average speed in miles per hour, we will divide the distance, **495** miles, by the time, **11** hours.

$$11 \overline{)495}$$

45	Compare: $49 > 11$.
$11 \overline{)495}$	Multiply: 4×11
$\underline{-44}$ ↓	Subtract: $49 - 44$. Bring down 5.
55	Compare: $55 > 11$. Multiply: 5×11 .
$\underline{-55}$	Subtract: 55
0	No remainder

The average speed for the trip was 45 miles per hour.

Practice

Solve the problems. Show your work in the space provided.

1. Ming's family drove 900 miles in 12 days. What was the average distance they drove each day?
2. The Mendoza family drove 336 miles through national parks. It took them 14 hours to drive this distance. What was their average driving speed?

1.

2.

Chapter Review

Solve the multiplication and division problems.

S $243 \times 8 =$ _____ J $221 \times 628 =$ _____ T $5,432 \div 55 =$ _____

E $9 \times 6,418 =$ _____ U $2,720 \div 6 =$ _____ N $989 \times 62 =$ _____

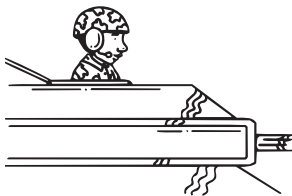
Y $289 \div 72 =$ _____ F $487 \times 12 =$ _____ C $4,277 \div 18 =$ _____

K $53 \times 28 =$ _____ L $420 \times 24 =$ _____ I $5,859 \div 55 =$ _____

A $2,566 \div 42 =$ _____

The soldier and the teacher are answering the question, "How's business?" To decode their answers, solve the problems above. Find the answers in the codes below. Write the letter of each problem above the answer.

Soldier



"Mine is

138,788 453 r2 1,944 98 r42

5,844 106 r29 61,318 57,762

98 r42 61 r4 61,318 1,484 1,944

_____."

Teacher



"Mine is

237 r11 10,080 61 r4 1,944 1,944 4 r1

_____."

Solve the word problems. Show your work in the space provided.

Athletes spend different amounts of times practicing. The number of hours that teams or individual athletes practice depends on the sport. Students at one school compared practice times for different sports.

1. A swim team has 31 swimmers. The total practice time for the team is 22,320 hours each season. How many hours per season does each swimmer practice?
2. There are 18 players on the soccer team. Each player spends 110 hours at practices and games during the season. How many hours in total are spent at practices and games?
3. There are 73 players on a football team. Each player practices 60 hours per season. What is the total practice time for the football team?
4. A baseball team spends 3,267 hours in practice each season. There are 27 players on the team. How many hours does each player practice per season?

1.

2.

3.

4.

Place Value

When you write a number, the position of a digit indicates the digit's value. The value of each place is 10 times the value of the place to the right.

Solve: Write the value of the underlined digit: 2,325,976

Visualize a place-value chart to see that **2** is in the **ten thousands** place. So, **2** has a value of **2 ten thousands**, or **20,000**.

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
2	3	2	5	9	7	6

Practice

Write the numerical value of the digit in the place named.

1. 5,363,246
hundred thousands

2. 952,418
thousands

3. 4,510,367
millions

4. 8,123,405
hundreds

5. 9,867,823
ten thousands

6. 567,345
ones

7. 1,328,976
tens

8. 5,004,002
millions

9. 2,982,023
ten thousands
