

# CATCH-UP MATH

Get your child back on track!

## Lessons and Activities

5th Grade

### Table of Contents

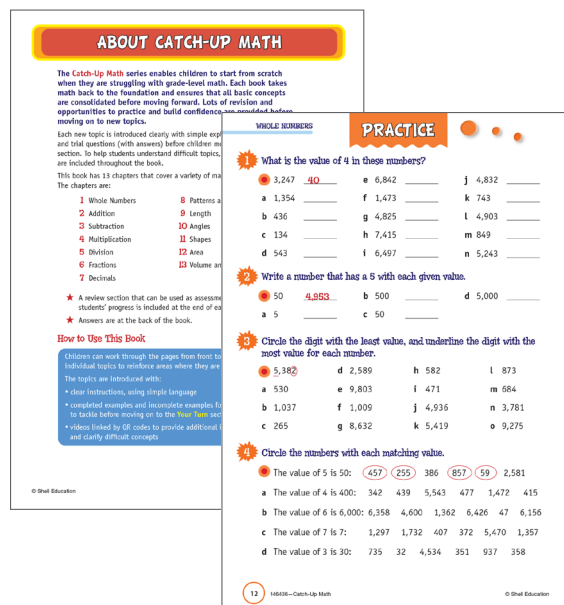
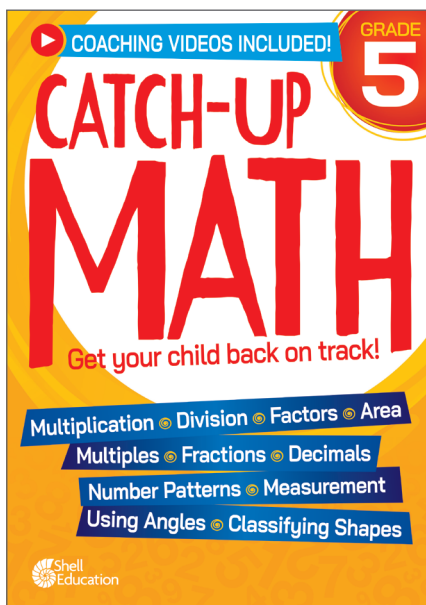
Cover (1 page)

Table of Contents (2 pages)

About Catch-Up Math (1 page)

How to Use the QR Codes in Catch-Up Math (1 page)

Lesson Pages (6 pages)





COACHING VIDEOS INCLUDED!

GRADE

5

# CATCH-UP MATH

Get your child back on track!

Multiplication ⦿ Division ⦿ Factors ⦿ Area

Multiples ⦿ Fractions ⦿ Decimals

Number Patterns ⦿ Measurement

Using Angles ⦿ Classifying Shapes

# CONTENTS

About Catch-Up Math.....	5
How to Use the QR Codes in Catch-Up Math.....	6
Math Skills .....	7

## 1 WHOLE NUMBERS

Place Value Three-digit and Four-digit Numbers	9
Value three-digit and four-digit numbers .....	11
Expanded Form three-digit and four-digit numbers .....	13
Place Value five-digit numbers .....	15
Value five-digit numbers .....	17
Expanded Form five-digit numbers .....	19
Greater Than, Less Than, Equal To three-digit, four-digit, and five-digit numbers	21
Rounding to the Nearest 100, 1,000, and 10,000 .....	23
Factors .....	25
Greatest Common Factor (GCF) .....	27
Multiples .....	29
Least Common Multiples (LCM) .....	31
Whole Numbers Review .....	33

## 2 ADDITION

Adding with and without Regrouping Four-Digit Numbers .....	38
Rounding to Estimate Addition Answers .....	40
Addition Review .....	42

## 3 SUBTRACTION

Subtraction with Regrouping Three-Digit And Four-Digit Numbers .....	44
Subtraction with Regrouping Five-Digit Numbers .....	46
Regrouping from Larger Place Values .....	48
Rounding to Estimate Subtraction Answers ...	50
Subtraction Review .....	52

## 4 MULTIPLICATION

Product, Factors, and Multiples .....	56
Multiplying 2-Digit by 1-Digit Numbers .....	58
Standard Algorithms .....	60
Multiplying 3-Digit and 4-Digit Numbers by 1-Digit Numbers .....	62
Multiplying 2-Digit and 3-Digit Numbers by 2-Digit Numbers .....	66
Multiplication Review .....	70

## 5 DIVISION

Groups and Equal Rows .....	76
Relating $\times$ to $\div$ .....	78
Quotient, Divisor, and Dividend .....	80
Standard Algorithm .....	82
Different Ways to Write Division .....	84
Division with Remainders .....	86
Division of 2-Digit Numbers .....	88
Division of 3-Digit Numbers .....	90
Recording Remainders as Fractions and Decimals .....	92
Division Review .....	94

## 6 FRACTIONS

Comparing Fractions .....	102
Proper and Improper Fractions .....	104
Mixed Numbers .....	106
Improper Fractions and Mixed Numbers ....	108
Add and Subtract Fractions with the Same Denominator .....	110
Fractions Review .....	112



# CONTENTS

## 7 DECIMALS

Writing Decimals .....	114
Relating Tenths to Hundredths .....	116
Decimals and Fractions in Words .....	118
Thousandths .....	120
Place Value .....	122
Decomposing Decimals .....	124
Decimals Review .....	126

## 8 PATTERNS AND ALGEBRA

Number Patterns .....	132
Pattern Grids .....	135
Equivalent Expressions .....	137
Equations and Patterns with Fractions and Decimals .....	139
Patterns and Algebra Review .....	141

## 9 LENGTH

Meters and Feet .....	144
Centimeters and Inches .....	146
Millimeters and Quarter-Inches .....	148
Converting Measurements .....	150
Kilometers and Miles .....	152
Perimeter .....	154
Length Review .....	158

## 10 ANGLES

Angles .....	162
Right Angles .....	164
Acute and Obtuse Angles .....	166
Straight, Reflex, and Revolution Angles .....	168
Using a Protractor .....	170
Angle Sum of a Triangle .....	173
Angle Sum of Quadrilaterals .....	175
Angles Review .....	177

## 11 SHAPES

Shapes .....	182
Types of Lines .....	184
Triangles .....	186
Quadrilaterals .....	188
Polygons .....	190
Symmetry .....	192
Shapes Review .....	194

## 12 AREA

Square Centimeters and Inches .....	198
Square Meters and Feet .....	200
Square Kilometers and Miles .....	202
Area – Using Multiplication .....	204
Perimeter .....	206
Area Review .....	208

## 13 VOLUME AND CAPACITY

Volume .....	213
Capacity .....	215
Liters and Gallons .....	217
Milliliters and Fluid Ounces .....	221
Volume and Capacity Review .....	223

## ANSWERS

1 Whole Numbers Answers .....	228
2 Addition Answers .....	230
3 Subtraction Answers .....	231
4 Multiplication Answers .....	231
5 Division Answers .....	233
6 Fractions Answers .....	236
7 Decimals Answers .....	237
8 Patterns and Algebra Answers .....	239
9 Length Answers .....	240
10 Angles Answers .....	241
11 Shapes Answers .....	243
12 Area Answers .....	244
13 Volume and Capacity Answers .....	246

# ABOUT CATCH-UP MATH

The **Catch-Up Math** series enables children to start from scratch when they are struggling with grade-level math. Each book takes math back to the foundation and ensures that all basic concepts are consolidated before moving forward. Lots of revision and opportunities to practice and build confidence are provided before moving on to new topics.

Each new topic is introduced clearly with simple explanations, examples, and trial questions (with answers) before children move to the Practice section. To help students understand difficult topics, instructional videos are included throughout the book.

This book has 13 chapters that cover a variety of mathematical concepts. The chapters are:

- |                         |                               |
|-------------------------|-------------------------------|
| <b>1</b> Whole Numbers  | <b>8</b> Patterns and Algebra |
| <b>2</b> Addition       | <b>9</b> Length               |
| <b>3</b> Subtraction    | <b>10</b> Angles              |
| <b>4</b> Multiplication | <b>11</b> Shapes              |
| <b>5</b> Division       | <b>12</b> Area                |
| <b>6</b> Fractions      | <b>13</b> Volume and Capacity |
| <b>7</b> Decimals       |                               |

- ★ A review section that can be used as assessment and to check students' progress is included at the end of each chapter.
- ★ Answers are at the back of the book.

## How to Use This Book

Children can work through the pages from front to back or choose individual topics to reinforce areas where they are struggling.

The topics are introduced with:

- clear instructions, using simple language
- completed examples and incomplete examples for students to tackle before moving on to the **Your Turn** sections
- videos linked by QR codes to provide additional instruction and clarify difficult concepts



Each **Your Turn** section contains a **SELF CHECK** for students to reflect and give self-assessment on their understanding.

A QR code on a topic page provides access to the video.

# HOW TO USE THE QR CODES IN CATCH-UP MATH

A unique aspect of the **Catch-Up Math** series is the **instructional videos**.

The videos further explain and clarify various mathematical concepts. The videos are simply accessed via QR codes and can be watched on a phone or tablet. Or, view all the videos by following a link.

Access the video by scanning the QR code with your device

Each video shows the page from the book. An instructor talks through the concepts and examples and demonstrates what children need to do. The solutions to the examples are presented before children tackle the **Your Turn** sections. This careful instruction ensures that children can confidently move on to the following Practice questions. Children should be encouraged to check their **Your Turn** answers before moving on.

25 instructional videos included!

Scan to access the video.

After watching the video, children can confidently complete the **Your Turn** section.

WHOLE NUMBERS

## GREATEST COMMON FACTOR (GCF)

The Greatest Common Factor (GCF) is the highest number that is a factor of two other numbers.

**Example 1:**  
What is the Greatest Common Factor (GCF) of 8 and 12?  
8: 1, 2, 4, 8      • Write all the factors of each number.  
12: 1, 2, 3, 4, 6, 12      • Look for the highest number that is in both lists.  
4 is the Greatest Common Factor of 8 and 12.

**Example 2:**  
What is the Greatest Common Factor (GCF) of 15 and 45?  
15: 1, 3, 5, 15  
45: 1, 3, 5, 9, 15, 45  
15 is the GCF of 15 and 45.

**Example 3:** What is the Greatest Common Factor (GCF) of 3 and 9?  
3: 1, 3  
9: 1, 3, 9  
3 is the GCF of 3 and 9.

**Example 4:** What is the Greatest Common Factor (GCF) of 4 and 12?  
4: 1, 2, 4  
12: 1, 2, 3, 4, 6, 12  
4 is the GCF of 4 and 12.

**Your Turn** Circle the GCF for each pair of numbers.

8: 1, 2, 4, 8      b 3: 1, 3  
10: 1, 2, 5, 10      9: 1, 3, 9

a 12: 1, 2, 3, 4, 6, 12      c 25: 1, 5, 25  
16: 1, 2, 4, 8, 16      35: 1, 5, 7, 35

**SELF CHECK** Mark how you feel

Got it!	Need help...	I don't get it
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Check your answers**  
How many did you get correct?

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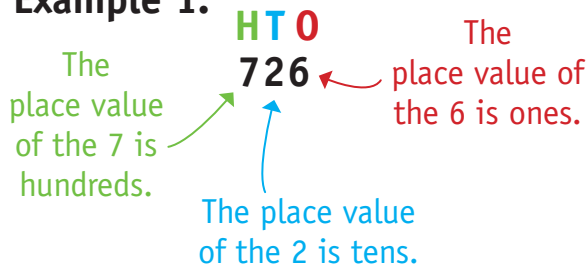
# PLACE VALUE

## THREE-DIGIT AND FOUR-DIGIT NUMBERS

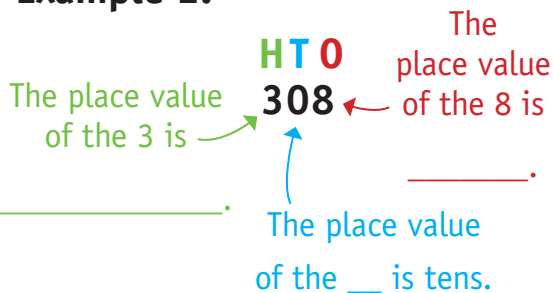
Where a digit is in a number is called the place value.

A three-digit number has a hundreds place, a tens place, and a ones place.

Example 1:

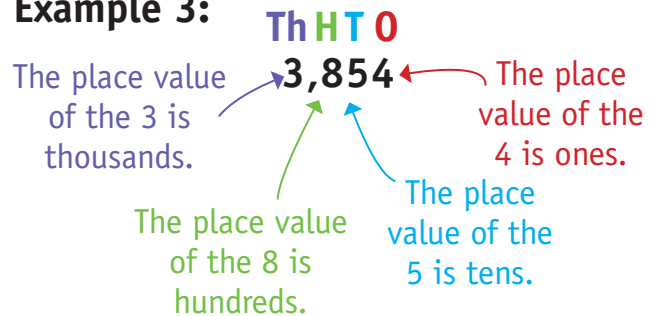


Example 2:

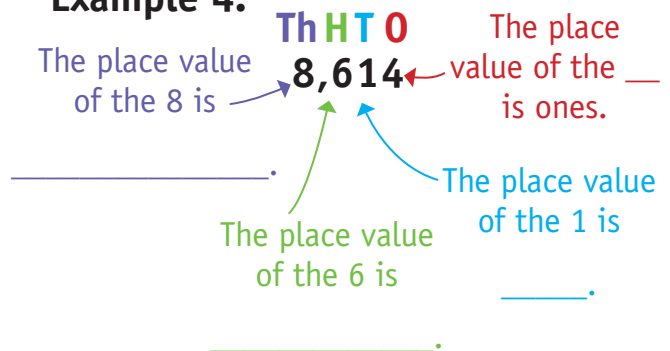


A four-digit number has a thousands place, a hundreds place, a tens place, and a ones place.

Example 3:



Example 4:



Your turn

1 What is the place value of the 5?

- 523 hundreds      c 152 \_\_\_\_\_  
 a 3,275 \_\_\_\_\_      d 2,053 \_\_\_\_\_  
 b 5,961 \_\_\_\_\_      e 1,295 \_\_\_\_\_

2 Circle the thousands in purple, hundreds in green, tens in blue, and ones in red.

- 2,897      a 5,921      b 253      c 320      d 4,815

SELF CHECK Mark how you feel

Got it!




Need help...

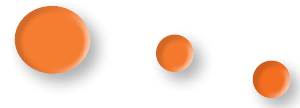



I don't get it




Check your answers

How many did you get correct?



**1** Write the place value of each underlined digit.

- |                                    |                        |
|------------------------------------|------------------------|
| ● 3,7 <u>2</u> 4 <b>tens</b> _____ | g <u>1</u> 08 _____    |
| a 5, <u>2</u> 36 _____             | h 64 <u>2</u> _____    |
| b <u>7</u> ,314 _____              | i <u>7</u> ,398 _____  |
| c 25 <u>7</u> _____                | j 2,4 <u>5</u> 0 _____ |
| d 1,2 <u>9</u> 3 _____             | k 3,7 <u>0</u> 6 _____ |
| e 1,0 <u>3</u> 6 _____             | l <u>5</u> 2 _____     |
| f 5,1 <u>3</u> 0 _____             | m 3,2 <u>5</u> 4 _____ |

**2** Write the numbers in standard form.

- 6 thousands, 2 tens, 3 hundreds, 0 ones 6,320
- a 5 tens, 8 ones, 3 thousands, 4 hundreds \_\_\_\_\_
- b 9 hundreds, 0 tens, 0 ones \_\_\_\_\_
- c 6 ones, 5 tens, 7 hundreds \_\_\_\_\_
- d 1 thousands, 4 ones, 8 hundreds, 3 tens \_\_\_\_\_
- e 2 hundreds, 3 tens, 5 ones \_\_\_\_\_

**3** Color the digits in the thousands purple, hundreds green, tens blue, and ones red.

- |  |   |   |   |  |  |   |   |   |  |  |   |   |   |   |
|--|---|---|---|--|--|---|---|---|--|--|---|---|---|---|
| ● <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>6</td><td>1</td><td>5</td><td>3</td></tr></table> | 6 | 1 | 5 | 3  | e <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>8</td><td>3</td><td>7</td></tr></table>           | 8 | 3 | 7 | j <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>2</td><td>1</td><td>9</td></tr></table>           | 2  | 1 | 9 |   |   |
| 6  | 1 | 5 | 3 |  |  |   |   |   |  |  |   |   |   |   |
| 8  | 3 | 7 |   |  |  |   |   |   |  |  |   |   |   |   |
| 2  | 1 | 9 |   |  |  |   |   |   |  |  |   |   |   |   |
| a <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>8</td><td>4</td><td>3</td><td>5</td></tr></table> | 8 | 4 | 3 | 5  | f <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>4</td><td>5</td><td>8</td><td>7</td></tr></table> | 4 | 5 | 8 | 7  | k <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>2</td><td>0</td><td>1</td><td>3</td></tr></table> | 2 | 0 | 1 | 3 |
| 8  | 4 | 3 | 5 |  |  |   |   |   |  |  |   |   |   |   |
| 4  | 5 | 8 | 7 |  |  |   |   |   |  |  |   |   |   |   |
| 2  | 0 | 1 | 3 |  |  |   |   |   |  |  |   |   |   |   |
| b <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>4</td><td>7</td><td>5</td><td>6</td></tr></table> | 4 | 7 | 5 | 6  | g <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>9</td><td>2</td><td>6</td></tr></table>           | 9 | 2 | 6 | l <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>3</td><td>2</td><td>4</td></tr></table>           | 3  | 2 | 4 |   |   |
| 4  | 7 | 5 | 6 |  |  |   |   |   |  |  |   |   |   |   |
| 9  | 2 | 6 |   |  |  |   |   |   |  |  |   |   |   |   |
| 3  | 2 | 4 |   |  |  |   |   |   |  |  |   |   |   |   |
| c <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>6</td><td>6</td><td>5</td></tr></table>           | 6 | 6 | 5 | h <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>8</td><td>1</td><td>7</td><td>0</td></tr></table> | 8  | 1 | 7 | 0 | m <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>5</td><td>9</td><td>6</td></tr></table>           | 5  | 9 | 6 |   |   |
| 6  | 6 | 5 |   |  |  |   |   |   |  |  |   |   |   |   |
| 8  | 1 | 7 | 0 |  |  |   |   |   |  |  |   |   |   |   |
| 5  | 9 | 6 |   |  |  |   |   |   |  |  |   |   |   |   |
| d <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>7</td><td>5</td><td>6</td></tr></table>           | 7 | 5 | 6 | i <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>6</td><td>1</td><td>0</td><td>9</td></tr></table> | 6  | 1 | 0 | 9 | n <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>4</td><td>9</td><td>2</td><td>3</td></tr></table> | 4  | 9 | 2 | 3 |   |
| 7  | 5 | 6 |   |  |  |   |   |   |  |  |   |   |   |   |
| 6  | 1 | 0 | 9 |  |  |   |   |   |  |  |   |   |   |   |
| 4  | 9 | 2 | 3 |  |  |   |   |   |  |  |   |   |   |   |



# VALUE

## THREE-DIGIT AND FOUR-DIGIT NUMBERS

The value of a number is how much a number is worth.  
To find the value of a digit, look at where it is in a number.

For example, what is the value of the 3 in 7,310?  
The 3 is in the hundreds column, so the value of 3 is 300.

Remember, the place value is where the digit is in a number.



The value is how much the digit is worth.

### Example 1:

In the number 593,  
the value of 5 is 500,  
the value of 9 is 90,  
and the value of 3 is 3.

### Example 3:

In the number 471,  
the value of 4 is \_\_\_\_\_,  
the value of \_\_\_\_\_ is 70,  
and the value of 1 is \_\_\_\_\_.

### Example 2:

In the number 1,729,  
the value of 1 is 1,000,  
the value of 7 is 700,  
the value of 2 is 20,  
and the value of 9 is 9.

### Example 4:

In the number 8,235,  
the value of 8 is \_\_\_\_\_,  
the value of 2 is \_\_\_\_\_,  
the value of \_\_\_\_\_ is 30  
and the value of 5 is \_\_\_\_\_.

**Your turn**

Circle the numbers where the value of 3 is 30.

537      634      3,921      8,231  
 1,325      1,813      432      13

**SELF CHECK** Mark how you feel

Got it!




Need help...

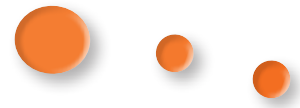



I don't get it




Check your answers

How many did you get correct?



**1** What is the value of 4 in these numbers?

- |  |               |               |
|--|---------------|---------------|
| <input checked="" type="radio"/> 3,247 <u>40</u> | e 6,842 _____ | j 4,832 _____ |
| a 1,354 _____                                    | f 1,473 _____ | k 743 _____   |
| b 436 _____                                      | g 4,825 _____ | l 4,903 _____ |
| c 134 _____                                      | h 7,415 _____ | m 849 _____   |
| d 543 _____                                      | i 6,497 _____ | n 5,243 _____ |

**2** Write a number that has a 5 with each given value.

- |  |             |               |
|--|-------------|---------------|
| <input checked="" type="radio"/> 50 <u>4,953</u> | b 500 _____ | d 5,000 _____ |
| a 5 _____  | c 50 _____  |               |

**3** Circle the digit with the least value, and underline the digit with the most value for each number.

- |   |         |         |         |
|---|---------|---------|---------|
| <input checked="" type="radio"/> <u>5,382</u> | d 2,589 | h 582   | l 873   |
| a 530   | e 9,803 | i 471   | m 684   |
| b 1,037                                       | f 1,009 | j 4,936 | n 3,781 |
| c 265   | g 8,632 | k 5,419 | o 9,275 |

**4** Circle the numbers with each matching value.

- The value of 5 is 50: 457 255 386 857 59 2,581
- a The value of 4 is 400: 342 439 5,543 477 1,472 415
- b The value of 6 is 6,000: 6,358 4,600 1,362 6,426 47 6,156
- c The value of 7 is 7: 1,297 1,732 407 372 5,470 1,357
- d The value of 3 is 30: 735 32 4,534 351 937 358

# EXPANDED FORM

## THREE-DIGIT AND FOUR-DIGIT NUMBERS

We expand a number by writing the value of each digit.

**Example 1:** Write 763 in expanded form.

$$763 = 700 + 60 + 3$$

(7 hundreds) (6 tens) (3 ones)

When a number is written this way, it is in expanded form.

**Example 2:** Write 2,852 in expanded form.

$$2,852 = 2,000 + 800 + 50 + 2$$

(2 thousands) (8 hundreds) (5 tens) (2 ones)



When a number has a zero in it, leave out that place value.

**Example 3:**

$$3,092 = 3,000 + 90 + 2$$

(3 thousands) (9 tens) (2 ones)

Leave out the hundreds.

**Example 4:**

Complete the expanded form.

$$8,243 = 8,000 + \underline{\quad} + 40 + \underline{\quad}$$

(8                     ) (2 hundreds) (     tens) (3 ones)

Your turn

Write these numbers in expanded form.

●  $347 = \underline{300} + \underline{40} + \underline{7}$   
 $= \underline{3} \text{ hundreds} + \underline{4} \text{ tens} + \underline{7} \text{ ones}$

a  $432 = \underline{\quad} + \underline{\quad} + \underline{\quad}$   
 $= \underline{\quad} \text{ hundreds} + \underline{\quad} \text{ tens} + \underline{\quad} \text{ ones}$

b  $3,065 = \underline{\quad} + \underline{\quad} + \underline{\quad}$   
 $= \underline{\quad} \text{ thousands} + \underline{\quad} \text{ tens} + \underline{\quad} \text{ ones}$

**SELF CHECK** Mark how you feel

Got it!




Need help...

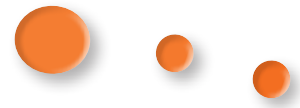



I don't get it




Check your answers

How many did you get correct?



**1** Write these numbers in expanded form.

**●**  $2,538 = \underline{2,000} + \underline{500} + \underline{30} + \underline{8}$

a  $857 = \underline{\quad} + \underline{\quad} + \underline{\quad}$

b  $329 = \underline{\quad} + \underline{\quad} + \underline{\quad}$

c  $1,093 = \underline{\quad} + \underline{\quad} + \underline{\quad}$

d  $1,834 = \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad}$

e  $506 = \underline{\quad} + \underline{\quad}$

f  $4,370 = \underline{\quad} + \underline{\quad} + \underline{\quad}$

**2** Write these numbers in expanded form.

**●**  $1,464 = \underline{1,000 + 400 + 60 + 4}$

a  $302 = \underline{\hspace{2cm}}$

b  $1,642 = \underline{\hspace{2cm}}$

c  $2,037 = \underline{\hspace{2cm}}$

d  $4,060 = \underline{\hspace{2cm}}$

e  $850 = \underline{\hspace{2cm}}$

**3** Match each number with its expanded form.

**●**  $282$   $6,000 + 800 + 9$

a  $1,463$   $200 + 80 + 2$

b  $707$   $400 + 20 + 4$

c  $1,490$   $1,000 + 400 + 60 + 3$

d  $540$   $1,000 + 400 + 90$

e  $6,809$   $500 + 40$

f  $424$   $700 + 7$