

MULTI MATHS

Textbook

3

Linawati Lauw




Ultimaths - Textbook 3

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Preface



ULTI MATHS is a mathematics learning series for primary school students. The contents are systematically arranged according to the ability of the child, which can be applied in everyday life, and can be used as preparation for the next level.



ULTI MATHS uses an international standard of mathematical teaching and learning approaches, which have been proven to bring children success in learning mathematics.

The Concrete-Pictorial-Abstract approach introduces new concepts with the use of appropriate manipulatives, before moving to pictorials and abstract representations. The development of topics across the levels in spiral progression approach helps learners acquire a new concept by building on previously learned concepts. The focus on Problem Solving by promoting the use of bar models, empowers students to develop visualization skills to better understand word problems before solving them.



ULTI MATHS provides active, fun, and collaborative mathematics learning with lots of activities and games. These learning experiences will enable students to acquire and apply concepts and skills, develop critical thinking skills, and positive attitudes towards mathematics.

Using This Book

Ultimaths has some special features to help students learn and use this book.



Let's Find Out

To check students' prior knowledge.



Lesson 3 Using \dots to Compare Numbers

Let's Find Out

Show 4072 and 2431 using \dots . Which number is greater? How do you know?

Let's Learn

4072				
2431				

Compare the thousands.

4 thousands is greater than 2 thousands.
So, 4072 is greater than 2431.
 $4072 > 2431$



Let's Learn

To introduce concepts, skills, or problem-solving strategies in an engaging way by using Concrete-Pictorial-Abstract approach.

Let's Learn

1 Which is smaller, 2136 or 2139?

2136 is before 2139.
So, 2136 is smaller than 2139.
 $2136 < 2139$

2 Which is greater, 3350 or 3520?

3350 is after 3520.
So, 3520 is greater than 3350.
 $3520 > 3350$

3 Which is smaller, 1200 or 4800?

1200 is before 4800.
So, 1200 is smaller than 4800.
 $1200 < 4800$



Let's Practise

To practise the concepts learned in Let's Learn section.

Let's Practise

1 Write the multiplication sentence.

$\times 2 = \square$

$\times 3 = \square$

2 Count in 9s.

9, 18, 27, \square , 54, \square , \square , 90

3 Write the missing numbers.

$3 \times 9 = \square$ $6 \times 9 = \square$

$4 \times 9 = \square$ $7 \times 9 = \square$

4 Use \dots to multiply.

$9 \times 9 = \square$

Something More Exciting!



More challenging practice to stimulate higher order thinking.

Something More Exciting!

What are the possible numbers for each below? Are there more than one answer?

$1583 + 15 = \square$

$9045 \div 3 = \square$

Let's Play

Players : 3-4
Materials needed : 2 sets of number cards

How to play:

- Player A shuffles the cards and gives cards to each player.
- Each player then arranges the cards to make a 4-digit number.



- All players show their numbers and compare. The player with the greatest number gets 1 point and shuffles the cards for the next round.
- Repeat steps 1-2, but this time the player with the smallest number gets 1 point.
- Alternate between comparing for the greatest and the smallest numbers.

The first player who gets 5 points is the winner.

Let's Play



Provide fun games to encourage collaboration and to deepen or extend understanding of concepts through the games.

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Lesson 1 Counting to 10 000



Let's Find Out

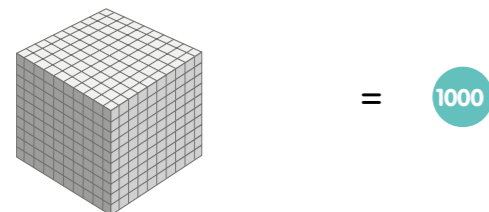
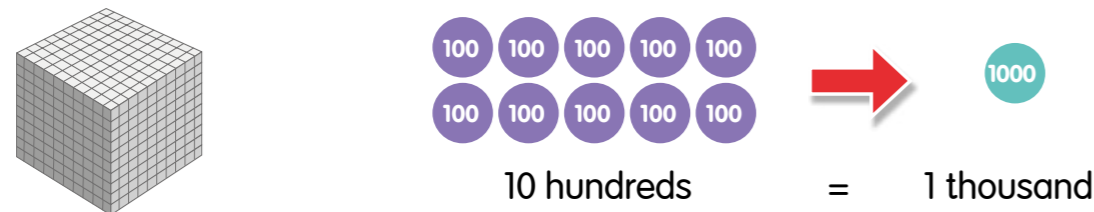
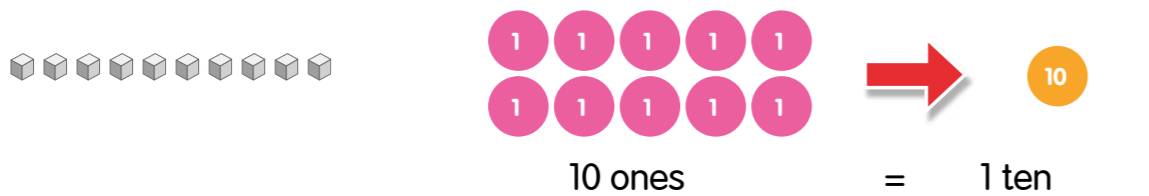
There are 2009 animals at Ragunan Zoo, Jakarta.

How can you show the number 2009 using 1000 100 10 1 ?



Let's Learn

We can show the ones, tens, hundreds, thousands and ten thousands in a number using 1000 100 10 1 .

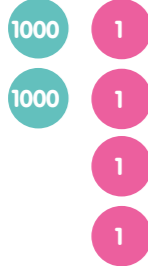


Let's count in thousands.

1000	1000 one thousand
1000 1000	2000 two thousand
1000 1000 1000	3000 three thousand
1000 1000 1000 1000	4000 four thousand
1000 1000 1000 1000 1000	5000 five thousand
1000 1000 1000 1000 1000 1000	6000 six thousand
1000 1000 1000 1000 1000 1000 1000	7000 seven thousand
1000 1000 1000 1000 1000 1000 1000 1000	8000 eight thousand
1000 1000 1000 1000 1000 1000 1000 1000 1000	9000 nine thousand
1000 1000 1000 1000 1000 1000 1000 1000 1000 1000	10 000 ten thousand

Let's count in thousands, hundreds, tens and ones.

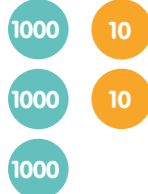
a



1000, ... 2000,
2001, 2002, 2003, **2004**

2004
two thousand and four

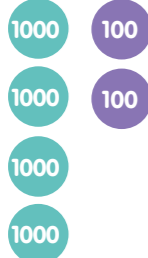
b



1000, ... 2000, ... 3000, ...
3010, ... **3020**

3020
three thousand and twenty


c



1000, ... 2000, ... 3000, ... 4000, ...
4100, ... **4200**

4200
four thousand and two hundred

d




1000, ... 2000, ...
2100, ... 2200, ...
2210, ... 2220, ... 2230, ... 2240,
2241, 2242, **2243**

2243
two thousand, two hundred and forty-three



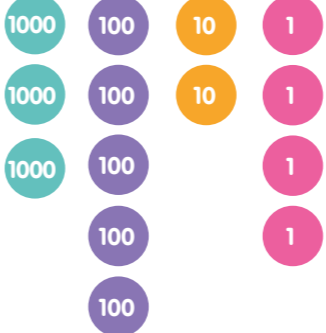
Let's Practise

1 Count in thousands, hundreds, tens and ones.



1000, ... , ...
2100, ... , ... , ...
2310, ... , ... , ... , ... , ...
2351, ,

2 Count and write the number.



3 Write in words.

a 4152

b 9105

c 7048

d 6003

4 Write in numbers.

a One thousand, seven hundred and thirty-six

b Four thousand, three hundred and one

c Two thousand and forty-eight

d Nine thousand and nine



Lesson 2 Using Place Value to Show Numbers



Let's Find Out

How do you use

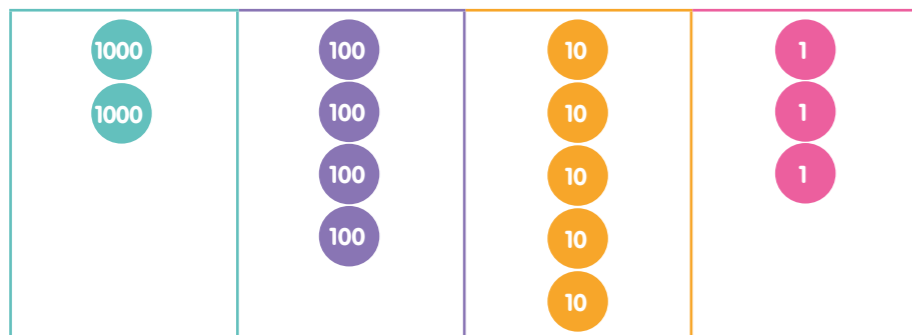
Thousands	Hundreds	Tens	Ones
-----------	----------	------	------

 to show 2453?



Let's Learn

We can show 2453 in different ways:



2 thousands 4 hundreds 5 tens 3 ones

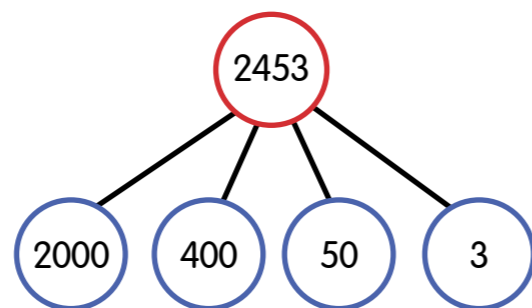
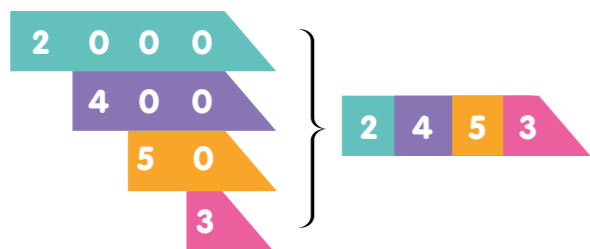
Thousands	Hundreds	Tens	Ones
2	4	5	3

The digit 2 is in the thousands place and the value is 2000.

The digit 4 is in the hundreds place and the value is 400.

The digit 5 is in the tens place and the value is 50.

The digit 3 is in the ones place and the value is 3.

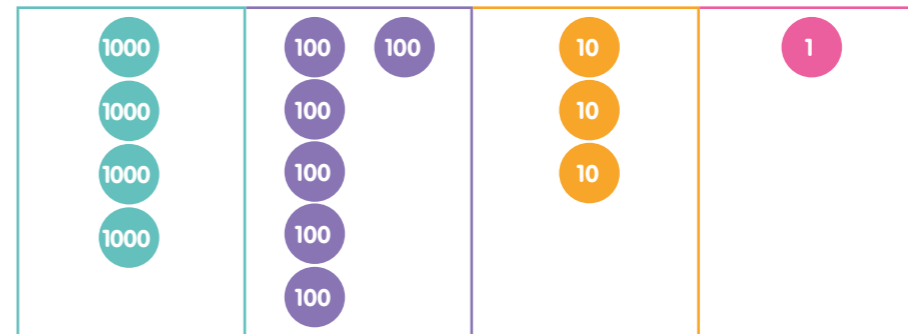


$$2453 = 2000 + 400 + 50 + 3$$



Let's Practise

1 Write the missing numbers.



Thousands	Hundreds	Tens	Ones
<input style="width: 40px; height: 20px;" type="text"/>	<input style="width: 40px; height: 20px;" type="text"/>	<input style="width: 40px; height: 20px;" type="text"/>	<input style="width: 40px; height: 20px;" type="text"/>

- a The digit is in the thousands place.
 The digit is in the hundreds place.
 The digit is in the tens place.
 The digit is in the ones place.

- b The value of the digit 4 is .
 The value of the digit 6 is .
 The value of the digit 3 is .
 The value of the digit 1 is .

2 In number 3710,

Thousands	Hundreds	Tens	Ones
<input style="width: 40px; height: 20px;" type="text"/>	<input style="width: 40px; height: 20px;" type="text"/>	<input style="width: 40px; height: 20px;" type="text"/>	<input style="width: 40px; height: 20px;" type="text"/>

- a the value of the digit is 3000.
 b the value of the digit is 700.
 c the value of the digit is 10.
 d the value of the digit is 0.



Workbook: Exercise 2, page 4-5

Lesson 3 Using 1000 100 10 1 to Compare Numbers

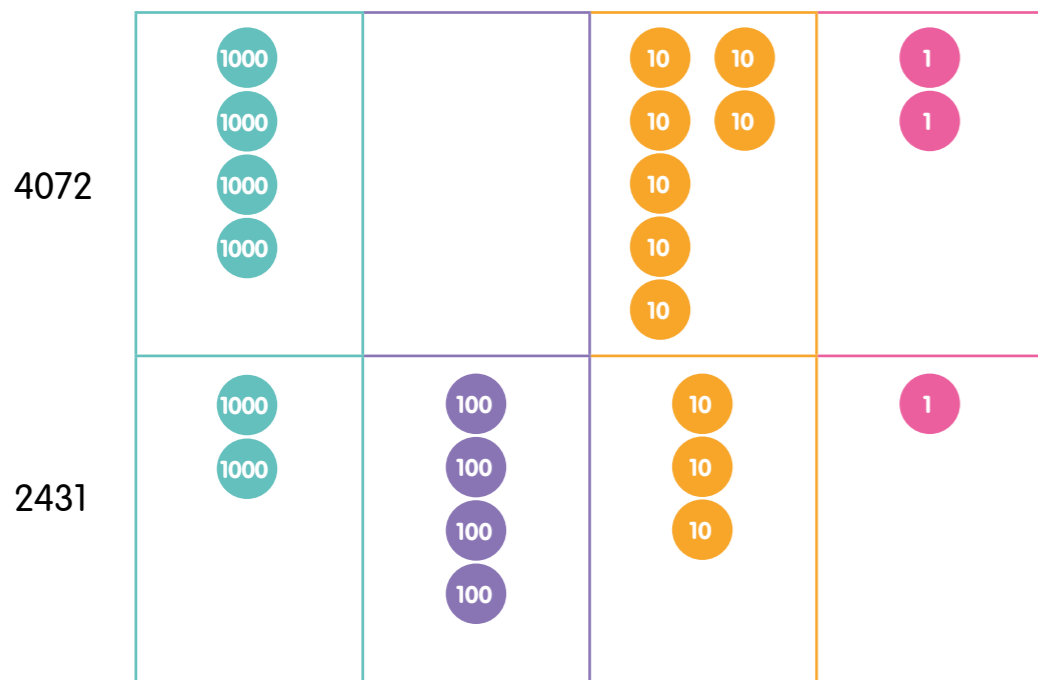


Let's Find Out

Show 4072 and 2431 using 1000 100 10 1.
Which number is greater?
How do you know?



Let's Learn



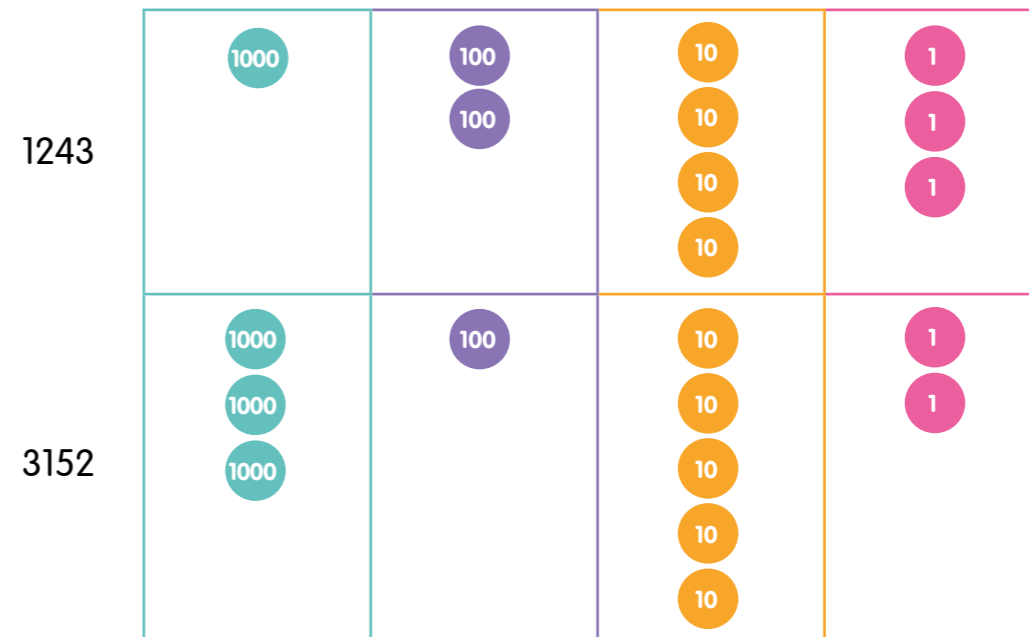
Compare the thousands.

4 thousands is greater than 2 thousands.
So, 4072 is greater than 2431.
 $4072 > 2431$

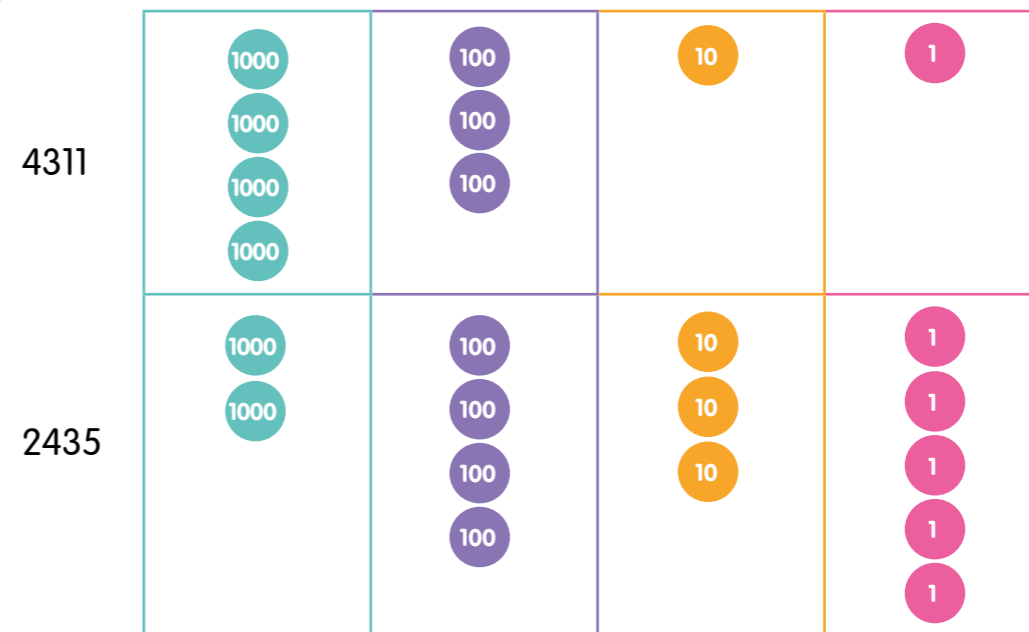


Let's Practise

1 Which number is greater?



2 Which number is smaller?



3 Fill in with < or >.

- a 3620 2360
- b 7193 6539
- c 2500 5002



Lesson 4 Using Place Value Chart to Compare Numbers



Let's Find Out

Show 3245 and 3850 using

Thousands	Hundreds	Tens	Ones

.



Let's Learn

Which number is smaller?
How do you know?

	Thousands	Hundreds	Tens	Ones
3245	3	2	4	5
3850	3	8	5	0



Compare the thousands.
They are equal.

Compare the hundreds.



2 hundreds is smaller than 8 hundreds.
So, 3245 is smaller than 3850.
 $3245 < 3850$

Which number is greater, 4360 or 4329?

	Thousands	Hundreds	Tens	Ones
4360	4	3	6	0
4329	4	3	2	9

The thousands and hundreds are equal. Compare the tens.



6 tens is greater than 2 tens.
So, 4360 is greater than 4329.
 $4360 > 4329$



Let's Practise

1 Which number is greater?

	Thousands	Hundreds	Tens	Ones
2352	2	3	5	2
2241	2	2	4	1

2 Which number is smaller?

	Thousands	Hundreds	Tens	Ones
5249	5	2	4	9
5461	5	4	6	1

3 Fill in with $<$ or $>$.

a 5275 5572

b 8435 8453

c 1576 1571



Workbook: Exercise 4, page 7

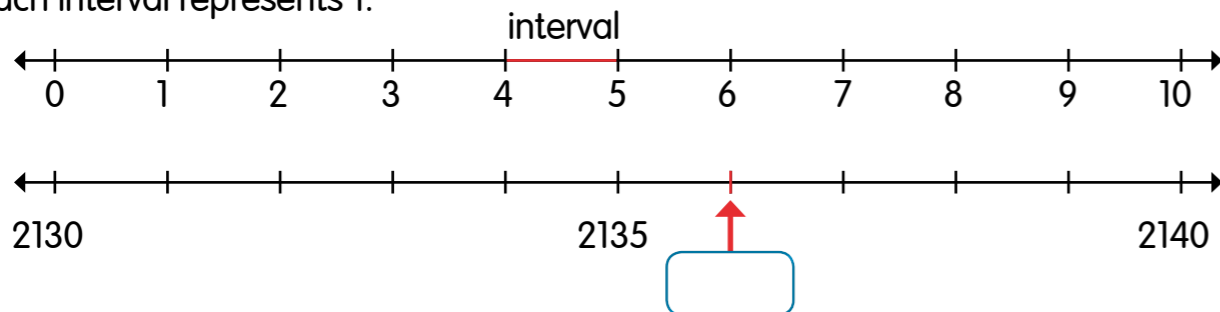
Lesson 5 Using Number Lines to Compare Numbers



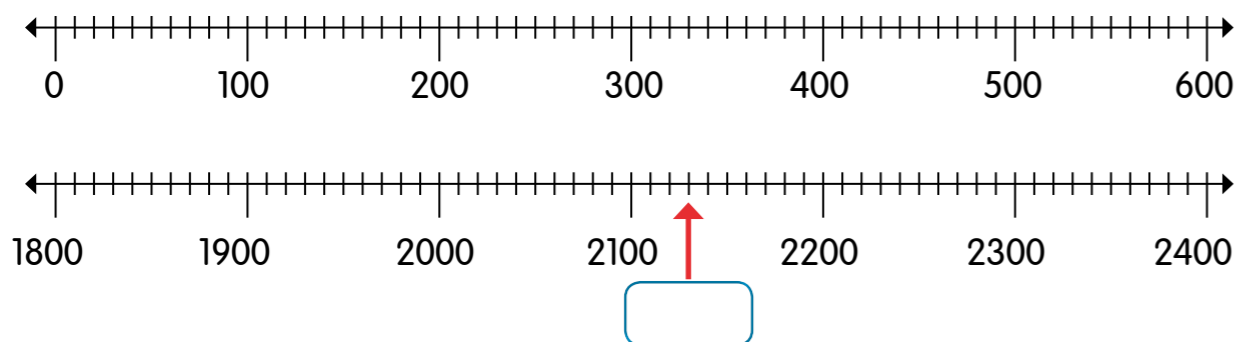
Let's Find Out

What number is shown in the following number line?
How do you know?

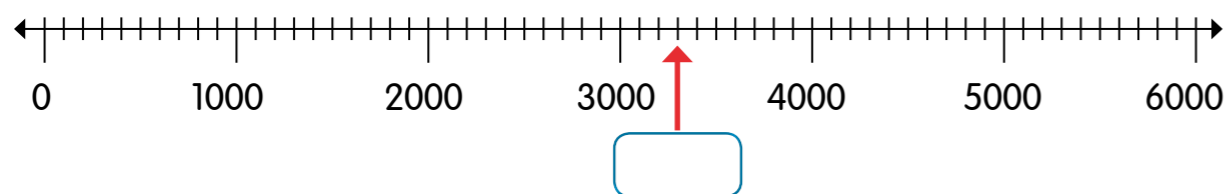
Each interval represents 1.



Each interval represents 10.



Each interval represents 100.

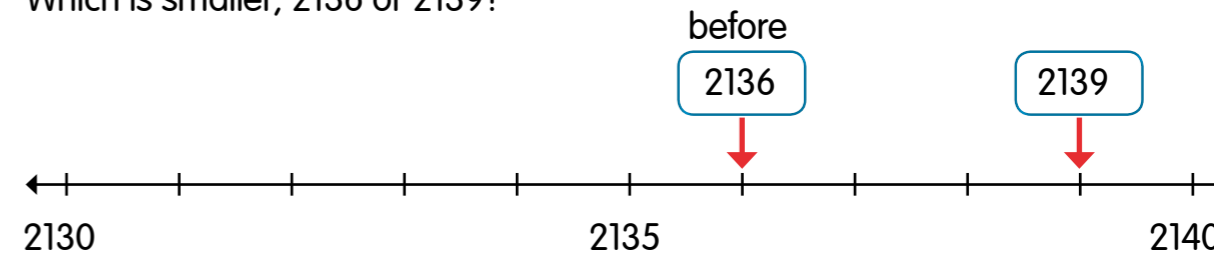


What do you observe about the number arrangement on each number line?



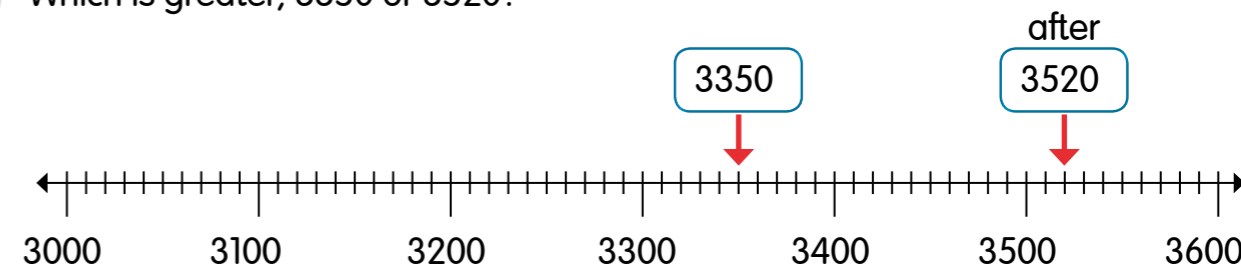
Let's Learn

1 Which is smaller, 2136 or 2139?



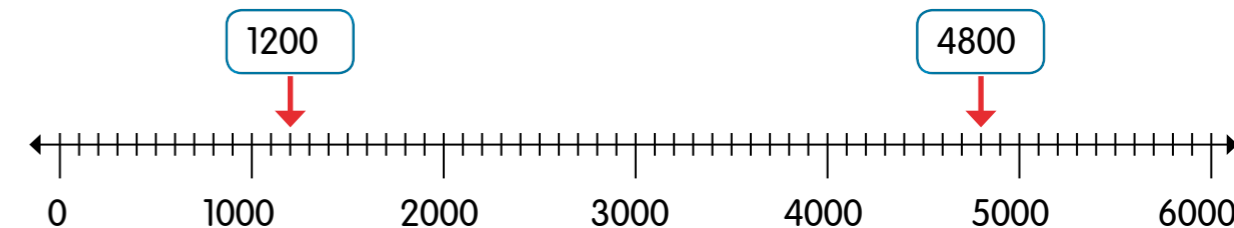
2136 is before 2139.
So, 2136 is smaller than 2139.
 $2136 < 2139$

2 Which is greater, 3350 or 3520?



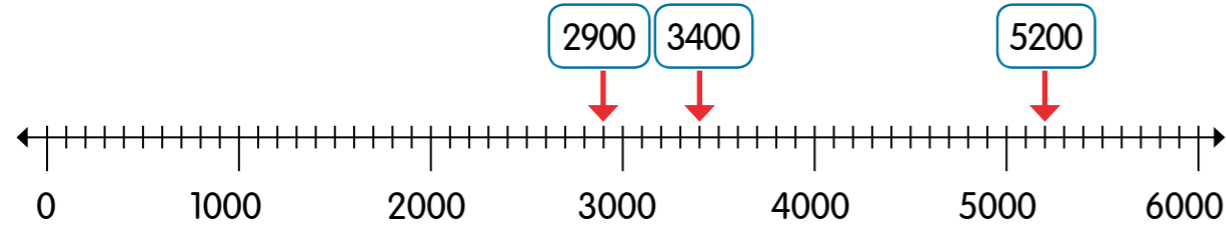
3520 is after 3350.
So, 3520 is greater than 3350.
 $3520 > 3350$

3 Which is smaller, 1200 or 4800?



1200 is before 4800.
So, 1200 is smaller than 4800.
 $1200 < 4800$

- 2 Arrange 2900, 5200 and 3400 in order, from the smallest to the greatest. Use a number line to compare.



The order of numbers from the smallest to the greatest is 2900, 3400, 5200.



Let's Practise

- 1 Use the place value chart to compare the following numbers.

a 4712, 4172, and 4721

Thousands	Hundreds	Tens	Ones

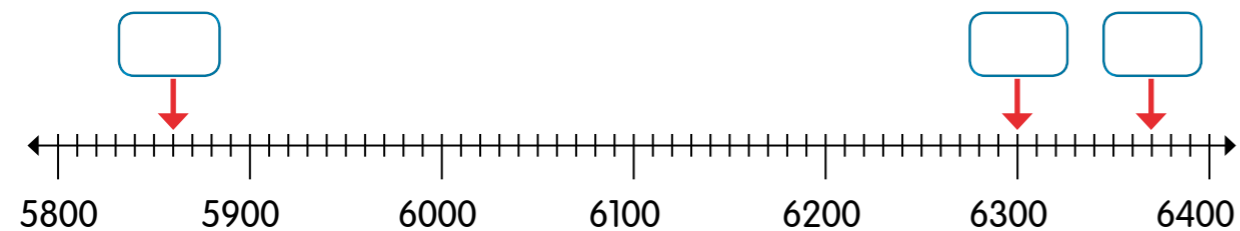
is the greatest.

is the smallest.

The order of numbers from the greatest to the smallest is

, , .

- 2 Use the number line to arrange 6300, 5860, and 6370 in order, from the smallest to the greatest.



The order of numbers from the smallest to the greatest is

, , .



Workbook: Exercise 6, page 9

Lesson 7 Number Patterns



Let's Find Out

What number comes after 3142 in the following number pattern?

3102 3112 3122 3132 3142 ? 3162 3172 3182 3192

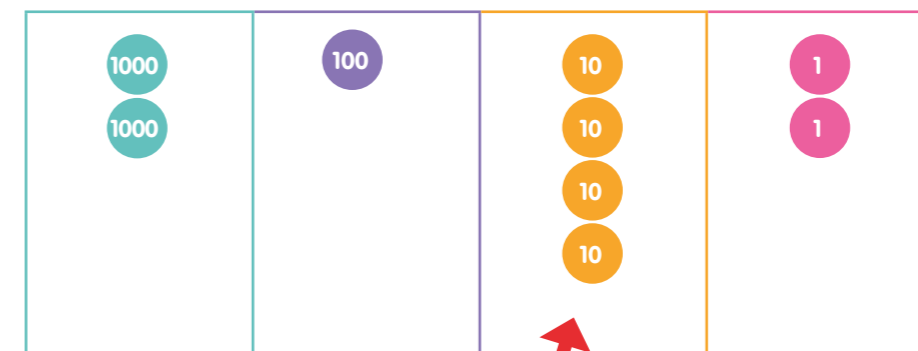
Use 1000 100 10 1 if needed.



Let's Learn

1 3102 3112 3122 3132 3142 ? 3162 3172 3182 3192

10 more

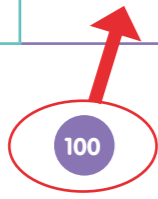
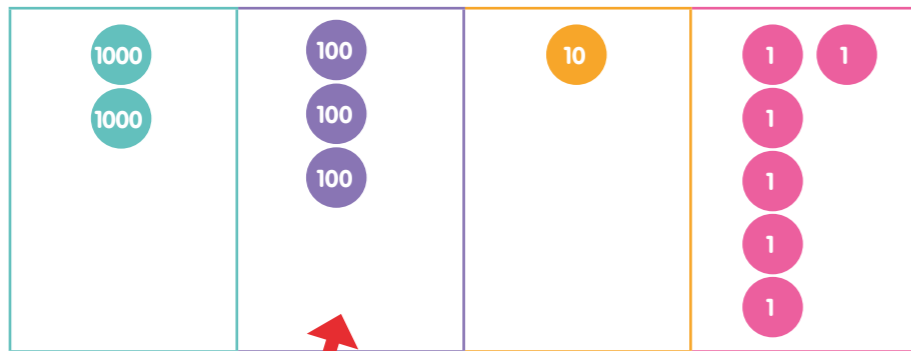


10 more than 3142 is 3152.



2 2116 2216 2316 ? 2516 2616 2716 2816 2916 3016

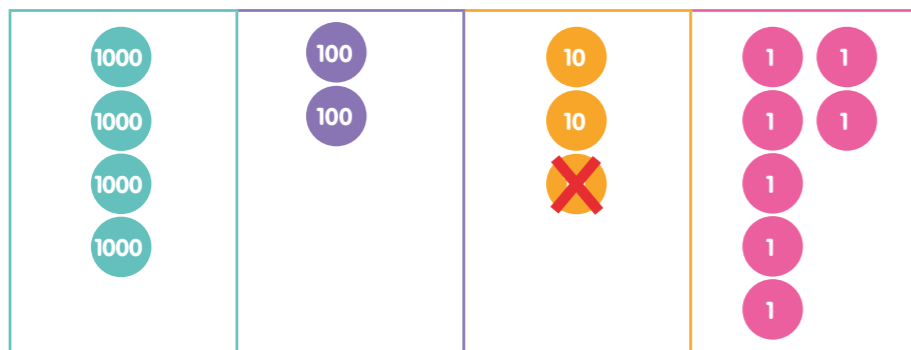
100 more



100 more than 2316 is 2416.

3 4297 4287 4277 4267 4257 4247 4237 ? 4217 4207

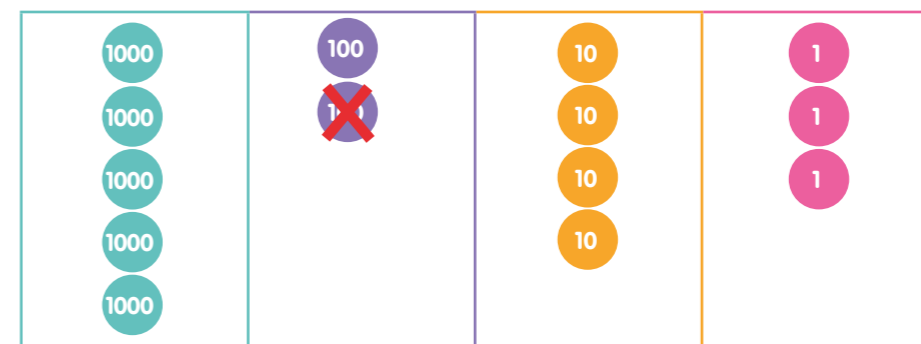
10 less



10 less than 4237 is 4227.

4 5543 5443 5343 5243 ? 5043 4943 4843 4743 4643

100 less



100 less than 5243 is 5143.



Let's Practise

1 Complete the number patterns.

- a 6293, 6294, 6295, , , 6298, 6299
- b 2844, 2843, , , 2840, 2839, 2838
- c 1315, 1325, , , 1355, 1365, 1375
- d 8766, 8776, 8786, , , 8816
- e 5387, 5377, , , 5347, 5337, 5327
- f 3088, 3089, , , 3092, 3093



Workbook: Exercise 7, page 10

Lesson 8 Finding the Number Patterns



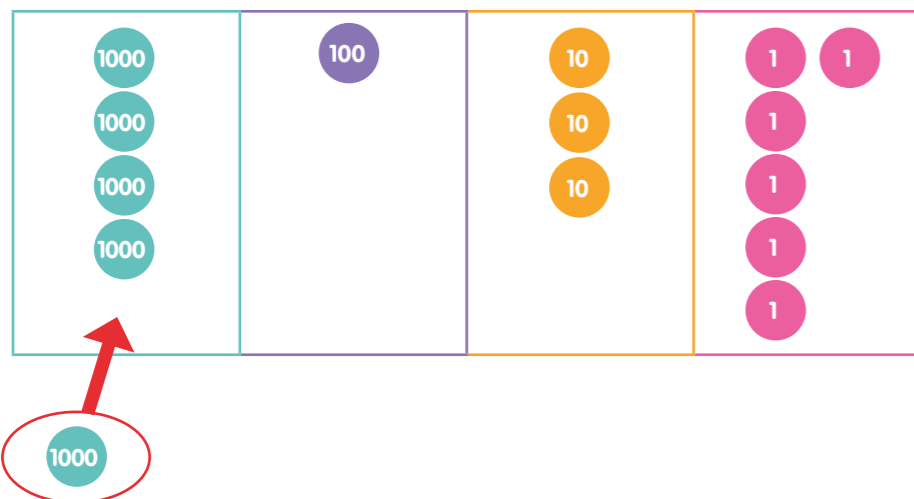
Let's Find Out

Show the number 4136 using 1000 100 10 1.
 How do you show 1000 more than 4136?
 How do you show 1000 less than 4136?



Let's Learn

1 What is 1000 more than 4136?

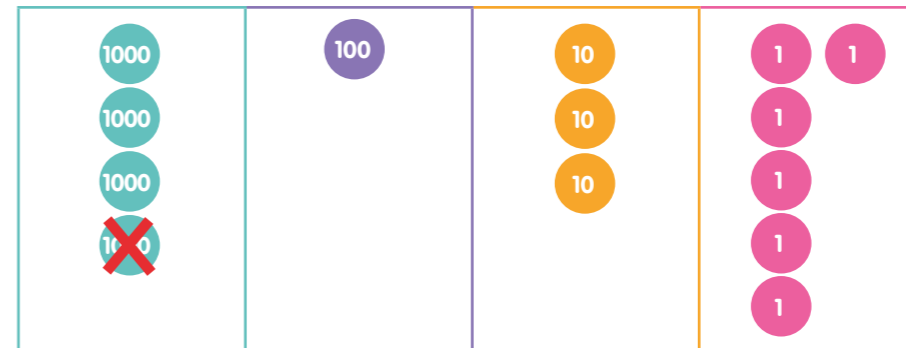


1000 more than 4136 is 5136.



1000 more than 4136 is same as $4136 + 1000$.

2 What is 1000 less than 4136?



1000 less than 4136 is 3136.



1000 less than 4136 is same as $4136 - 1000$.



Let's Practise

1 Write the missing numbers.

- a 1000 more than 4000 is .
- b 1000 more than 2910 is .
- c 1000 more than 5800 is .
- d 1000 less than 8000 is .
- e 1000 less than 6340 is .
- f 1000 less than 9999 is .



Workbook: Exercise 8, page 11



What are the possible numbers for each below? Are there more than one answer?

a $1583 > 15$ 3

b $3046 < 3$ 46



Answer



Players : 3-4

Materials needed : 2 sets of number cards



How to play:

- 1 Player A shuffles the cards and gives cards to each player.
- 2 Each player then arranges the cards to make a 4-digit number.



- 3 All players show their numbers and compare. The player with the greatest number gets 1 point and shuffles the cards for the next round.
- 4 Repeat steps 1 - 3, but this time the player with the smallest number gets 1 point.
- 5 Alternate between comparing for the greatest and the smallest numbers.



The first player who gets 5 points is the winner.