Overview

Students will learn how to recognise, count, write and compare numbers up to 1000.

Key Concepts

- Counting relates to finding how many
- Relative value of a number can be known through comparing it with other numbers

Thinking Skills

- Sequencing
- Identifying patterns
- Comparing

Core Vocab

- thousand
- greater than
- less than
- even
- odd

Teaching Note

Draw on students' experiences with respect to buying items from supermarkets.

Ask: Have you seen items in packs of different values?

Extension

Ask: What are some things that comes in 10s or 100s?

Key SIOs

- To interpret numbers within 100 in terms of tens and ones

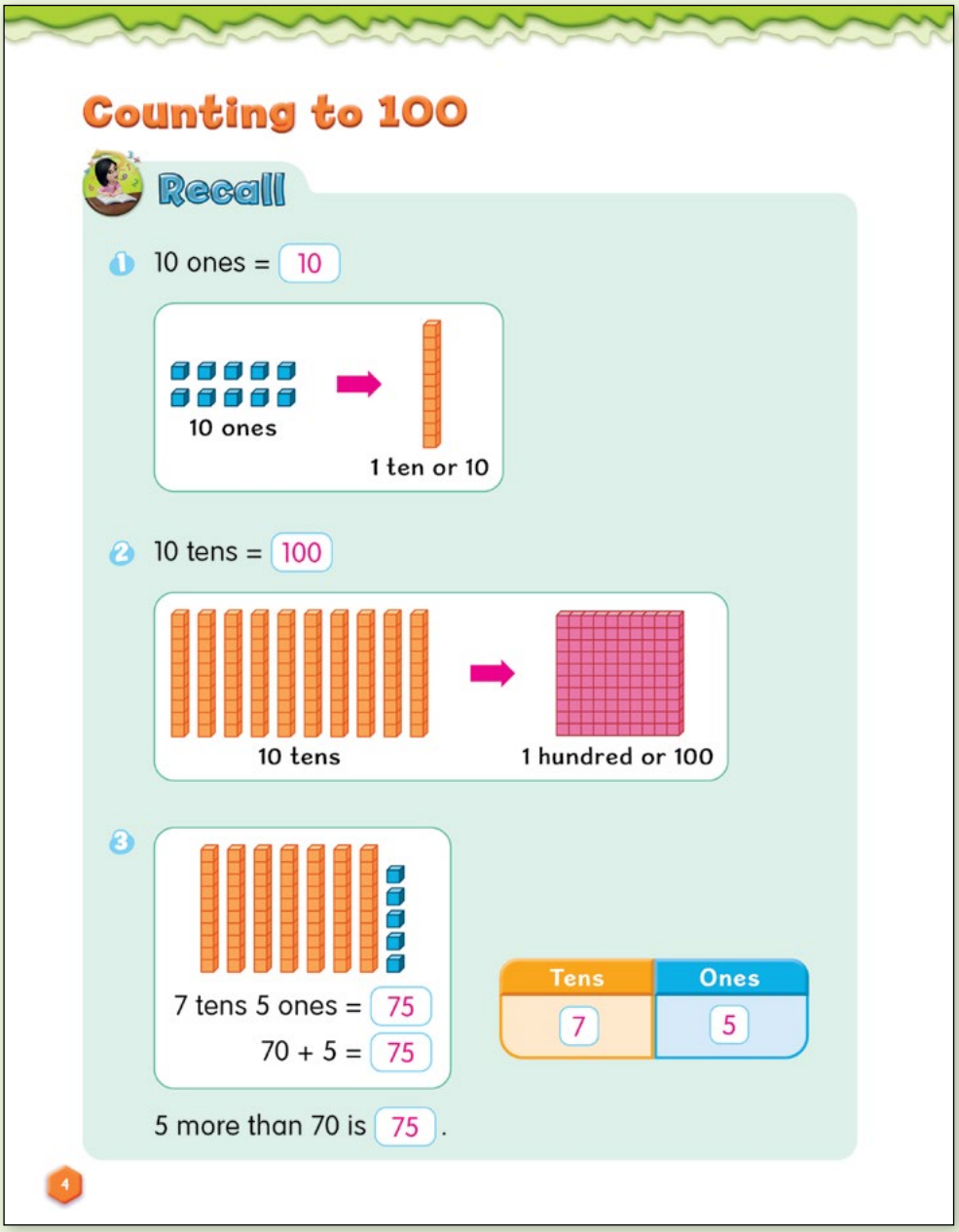
Teaching Note

For 1, demonstrate using base-10 blocks/sets. Invite your students to count aloud with you, one cube at a time (shown physically, or on the visualiser) until you count 10 cubes. Ask students what they can do with 10 ones and elicit the term 'rename'.

Help students recall that 10 ones are renamed to make 1 ten. Replace 10 one cubes with a ten cube.

Extension

Include asking students what if they have 20 ones or 30 ones. Invite students to demonstrate exchanging 20 ones for 2 tens, etc.



Teaching Note

For 2, demonstrate in a similar way as done in 1 but show 10 tens can be renamed to make 100 instead.

For 3, use base-10 blocks/sets. Place some tens and ones on a piece of paper on the visualiser. Invite your students to count aloud in tens and ones as you place them in the place value chart and the number notation. Relate the number notation to the respective value of each digit and also as the addition of tens and ones.

For example,

35 = 3 tens 5 ones

35 = 30 + 5

Recall

1. 10

2. 100

3. 75, 75, 7, 5, 75

4

The Hundred Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

10 more than 55 is 65.

Tens	Ones
6	5

(a) What number is 1 less than 65? 64

(b) What number is 10 more than 65? 75

(c) 63 is 2 less than 65.

(d) 67 is 2 more than 65.

Go to PB 2A Practice 1

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Teaching Note

Use the Hundred Chart to help students answer the questions given in 4.

Recall

4. **(a)** 64
(b) 75
(c) 63
(d) 2

Key SIOs

- To count up to 1000
- To count in ones, tens and hundreds
- To find the number that is 1 more/10 more/100 more than a given number by counting on
- To find the number that is 1 less/10 less/100 less than a given number by counting on

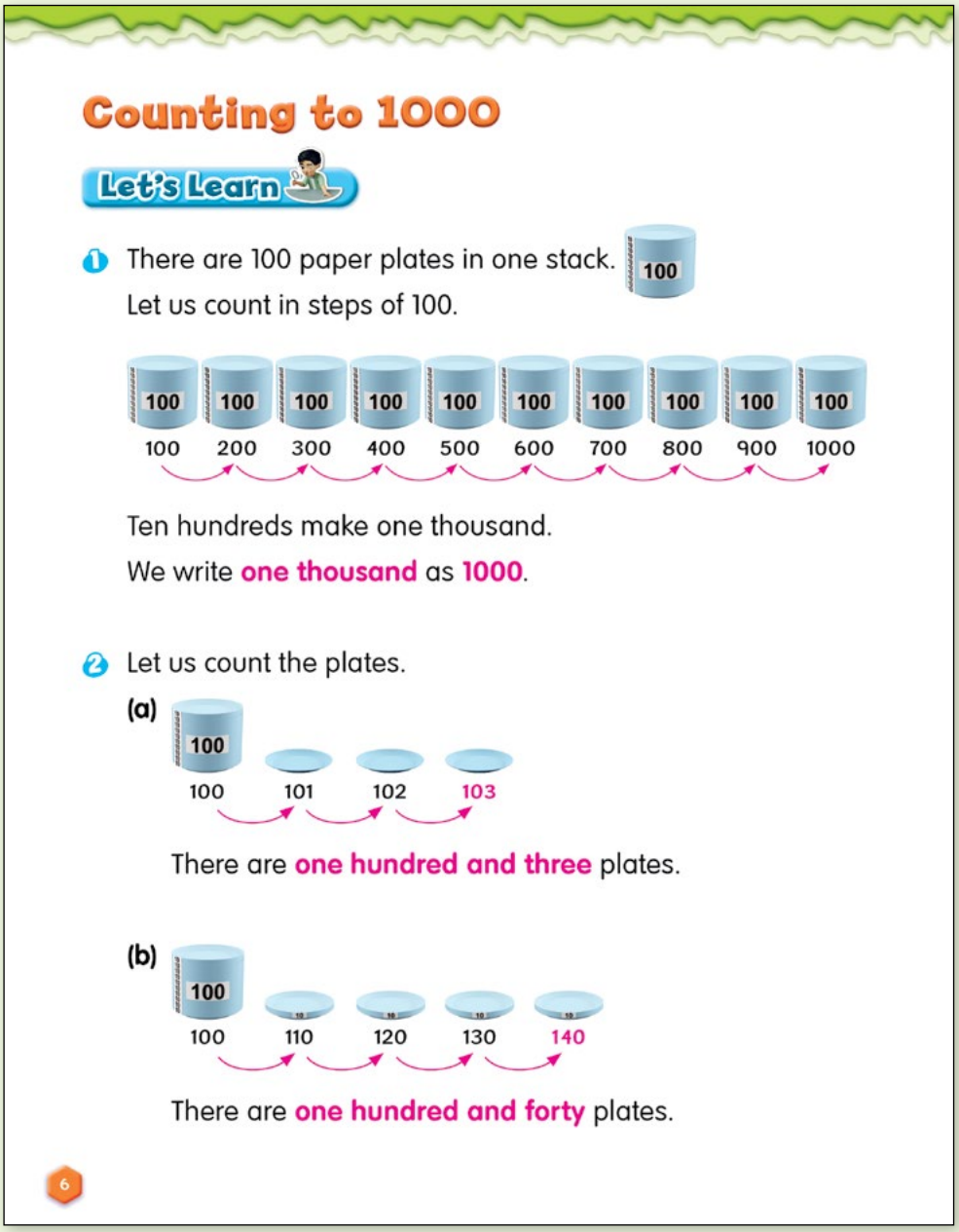
Teaching Note

For 1, count aloud in 100s (using an item to represent 100 quantity of an item, e.g., paper plates). Help students to relate how the numbers are written and read.

Upon reaching 10 hundreds, let students know that 10 hundreds is the same as 1 thousand.

For 2, show 100 paper plates (or other countable items such as beans or paper clips) to students, or on a visualiser. Count aloud to find the number of items and write the number. Have students read the number.

Repeat the demonstration several times using different numbers of items (or base-10 blocks) for students to count in hundreds, tens and ones. Help students relate the number of countable items counted to its number notation. Get students to read and recognise the numbers.



Counting to 1000

Let's Learn

1 There are 100 paper plates in one stack. 100

Let us count in steps of 100.

100 200 300 400 500 600 700 800 900 1000

Ten hundreds make one thousand.

We write **one thousand** as **1000**.

2 Let us count the plates.

(a) 100 101 102 103

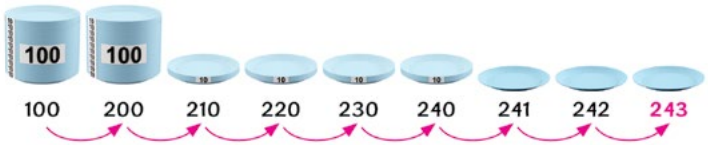
There are **one hundred and three** plates.

(b) 100 110 120 130 140

There are **one hundred and forty** plates.

6

(c)

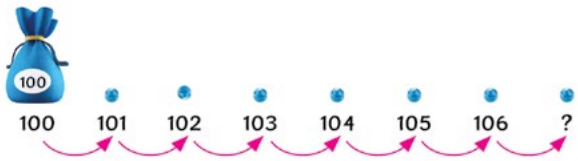


There are **two hundred and forty-three** plates.

Let's Practise

How many marbles are there?
Express your answers in numerals and in words.

(a)



There are 107 marbles.

one hundred and seven

(b)

There are 450 marbles.

four hundred and fifty

(c)

There are 238 marbles.

two hundred and thirty eight

Go to PB 2A Practice 2

Let's Practise

(a) 107, one hundred and seven

(b) 450, four hundred and fifty

(c) 238, two hundred and thirty eight

Key SIOs

- To read and write 3-digit numbers in numerals and in words
- To express 3-digit numbers in expanded form
- To express a given 3-digit number in ones, tens and hundreds
- To identify a digit in a given place value of a 3-digit number

Teaching Note

Show a place value chart (up to hundreds) on the board or visualiser.

Place 1 box (labelled with 100 of a same item), 2 boxes (labelled with 10 of the same item) and 3 same items on the place value chart in the respective hundreds, tens and ones column.

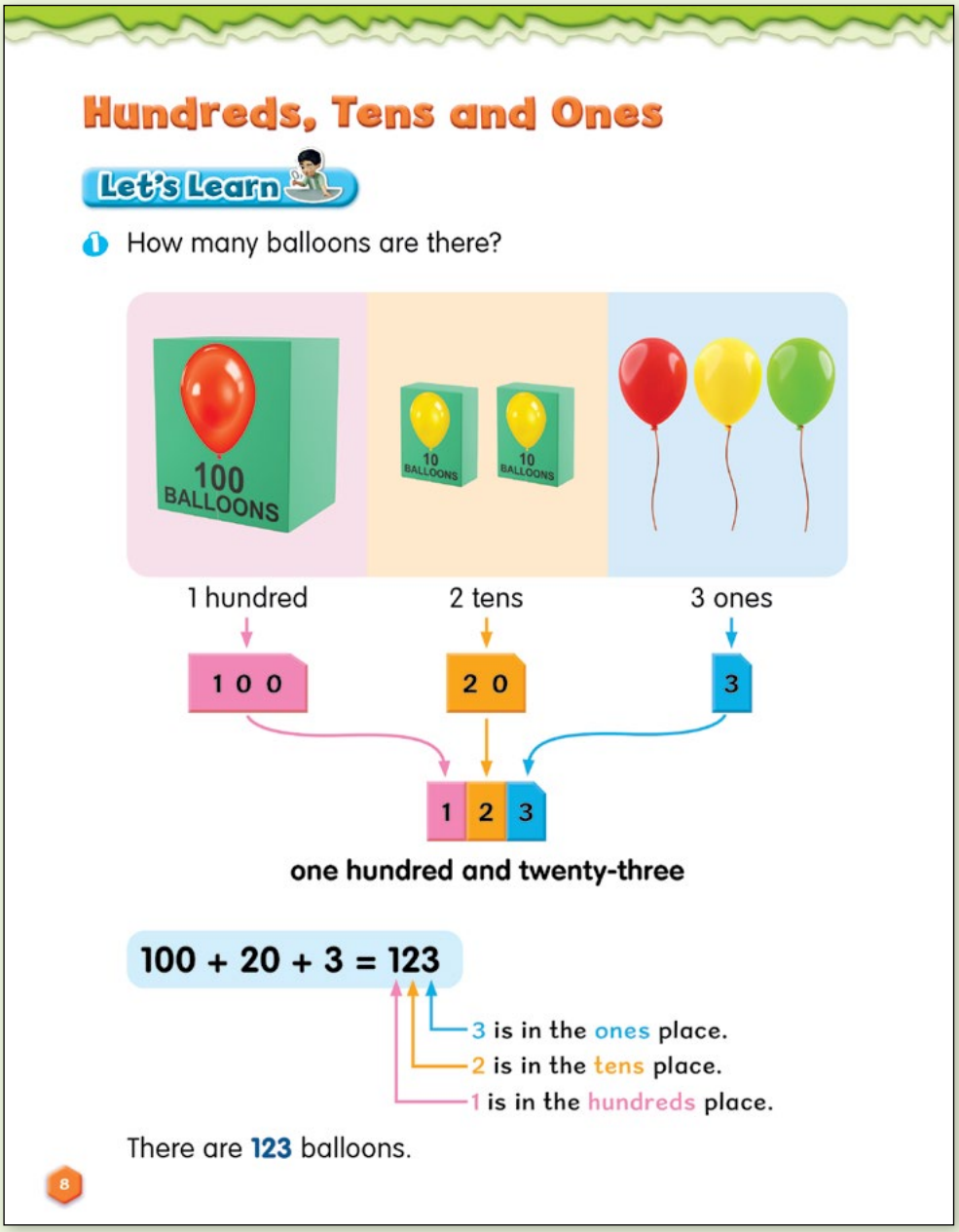
Count the number of items starting with the hundreds and write 1 below the containers in the hundreds column.

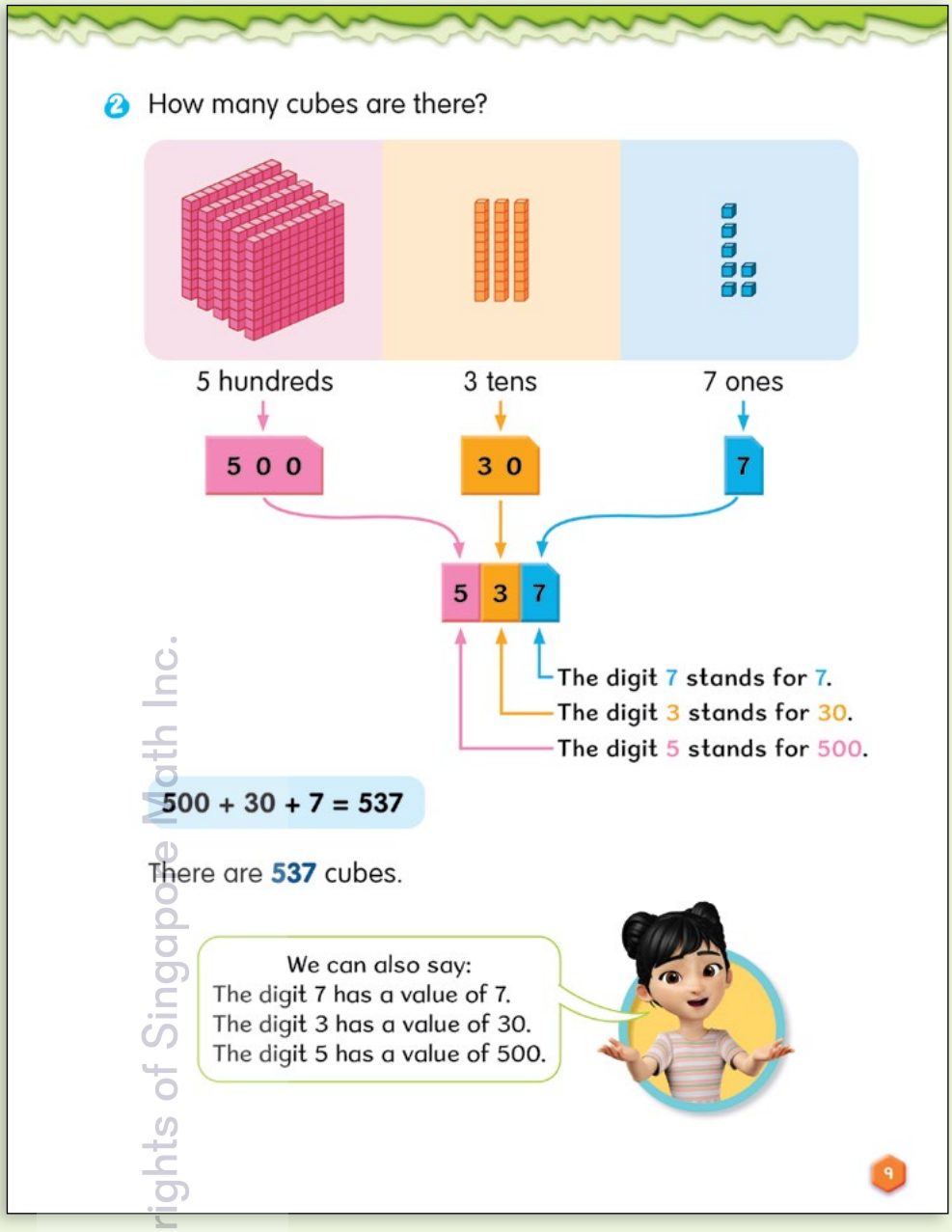
Say: There is 1 hundred.

Do likewise for the number of tens and ones.

Relate the number of items shown as 123 items. Stress what each digit stands for: For example, the digit 2 in the tens column stands for 2 tens, or 20.

Next, make use of the place value cards and overlap them to show 123 is made up of 100, 20 and 3. Help students to be familiar with the positional value of each digit.





Teaching Note

Show another example such as 537 using base-10 blocks/sets, using the same instructional approach.

Teaching Note

For 1, students in each group will take turns to represent the number using base-10 sets or place value cards.

Extension

Ask another member to say the number and the place value representation of the digits aloud. Other members will check if the representation and verbalisation are correct.

Students can also pair up within a group of 4. Each pair can write a number and ask the other pair place value related questions.

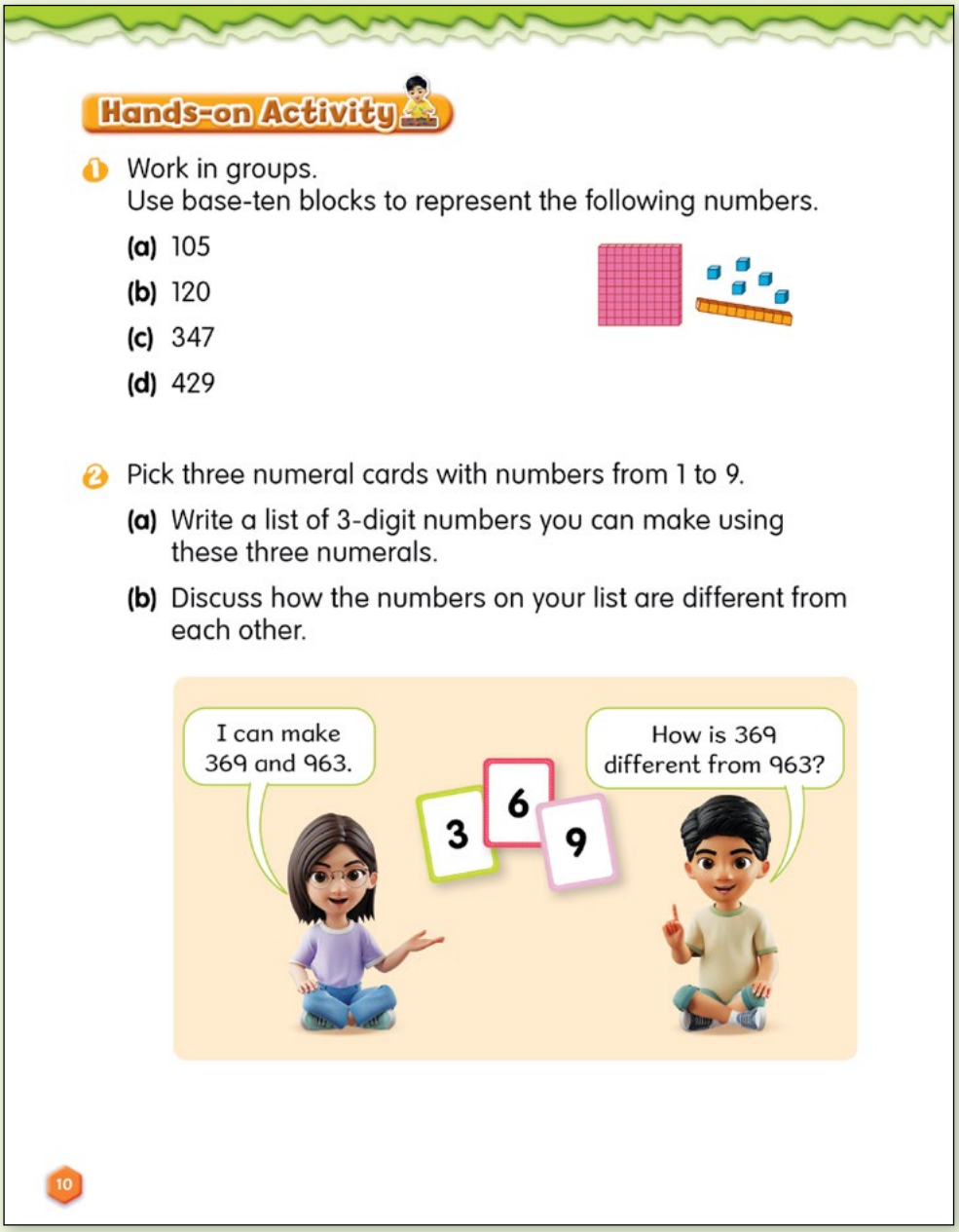
For example, one pair can ask the other pair to identify the digit given the place or state the value of the digit through recognising the place.

Teaching Note

For 2, have students read out loud the numbers that they have made.

Ask: What is the value of each number in your numeral?

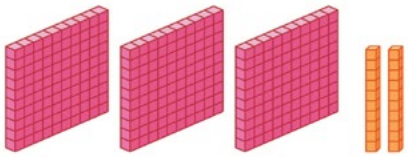
For example, the value of 3 in 123 is different from that in 132.



Let's Practise

1 How many cubes are there?

(a)

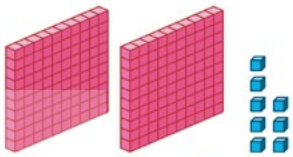


3 hundreds [2] tens [0] ones = [320]

[300] + [20] + [0] = [320]

There are [320] cubes.

(b)

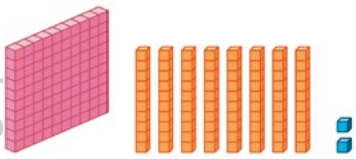


[2] hundreds [0] tens [8] ones = [208]

[200] + [0] + [8] = [208]

There are [208] cubes.

(c)



[1] hundred [8] tens [4] ones = [182]

[100] + [80] + [4] = [184]

There are [184] cubes.

11

Let's Practise

1. **(a)** 2, 0, 320
   300 + 20 + 0 = 320
   320

   (b) 2, 0, 8, 208
   200 + 0 + 8 = 208
   208

   (c) 1, 8, 2, 182
   100 + 80 + 2 = 182
   182

2 

Which digit is in the **(a)** ones place? 0

(b) tens place? 1

(c) hundreds place? 8

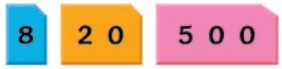
3 In 975,

(a) the digit 9 stands for 900.

(b) the digit 7 stands for 70.

(c) the digit 5 stands for 5.

4 Put the place-value cards together.
What number do you get?

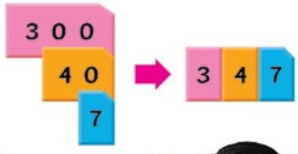
(a) 

528

(b) 

609

Example:



5 Fill in the missing numbers.

(a) 539 = 500 + 30 + 9

(b) 708 = 700 + 8

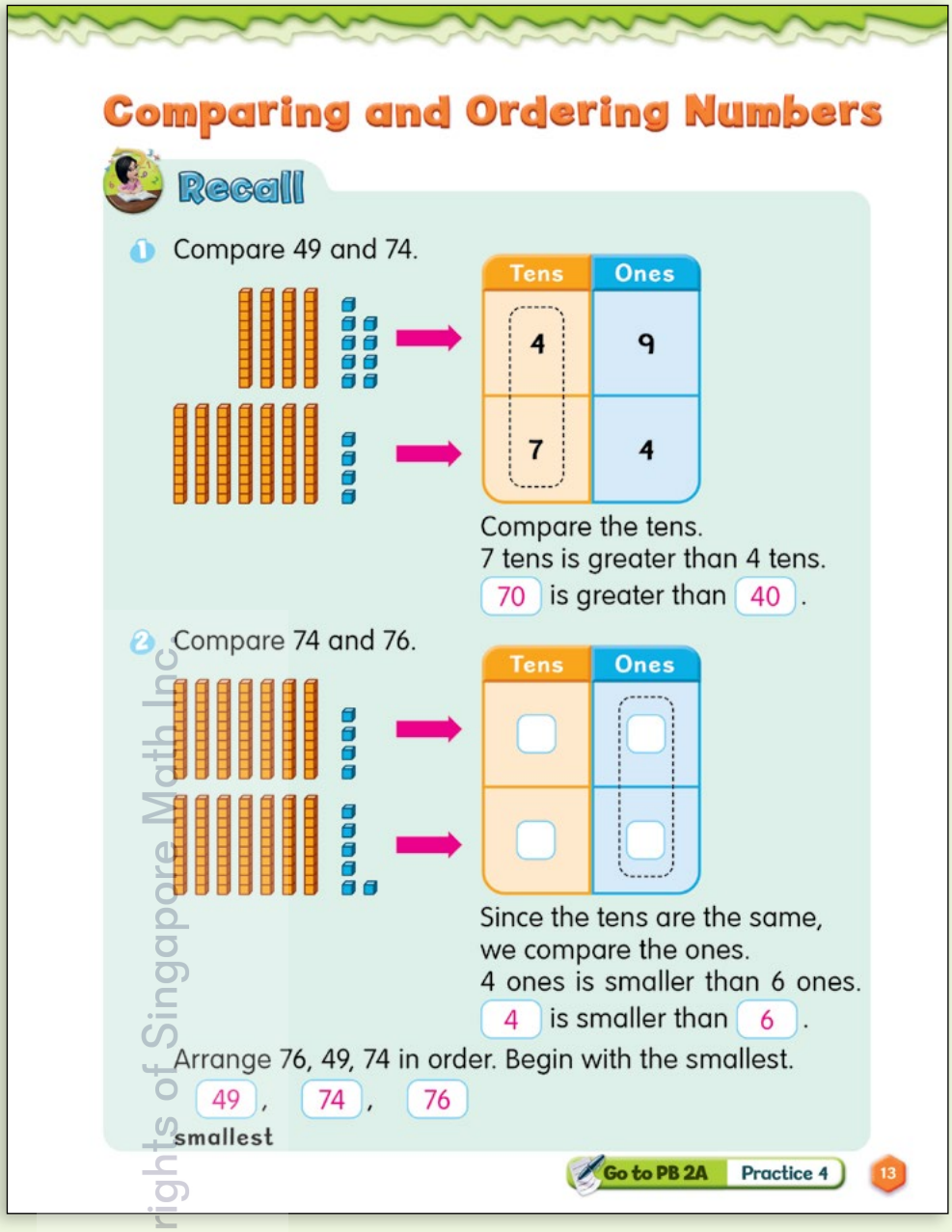
Let's Practise

2. **(a)** 0
(b) 1
(c) 8

3. **(a)** 900
(b) 70
(c) 5

4. **(a)** 528
(b) 609

5. **(a)** 30
(b) 700



Comparing and Ordering Numbers

Recall

1 Compare 49 and 74.

Tens	Ones
4	9
7	4

Compare the tens.
7 tens is greater than 4 tens.
70 is greater than 40.

2 Compare 74 and 76.

Tens	Ones

Since the tens are the same, we compare the ones.
4 ones is smaller than 6 ones.
4 is smaller than 6.

Arrange 76, 49, 74 in order. Begin with the smallest.
49, 74, 76
smallest

Go to PB 2A Practice 4

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Key SIOs

- To compare two 2-digit numbers
- To find the number that is 1 more/10 more/100 more than a given number by counting on within 100

Teaching Note

Recall with students the steps to comparing two 2-digit numbers. We first compare the tens. If the tens are the same, we compare the ones.

Recall

1. 70, 40

2. 4, 6
49, 74, 76

Key SIOs

- To compare two 3-digit numbers
- To arrange three or four 3-digit numbers in order

Teaching Note

Have students first recall that each 3-digit numeral can be renamed into hundreds, tens and ones, as seen by the illustrations.

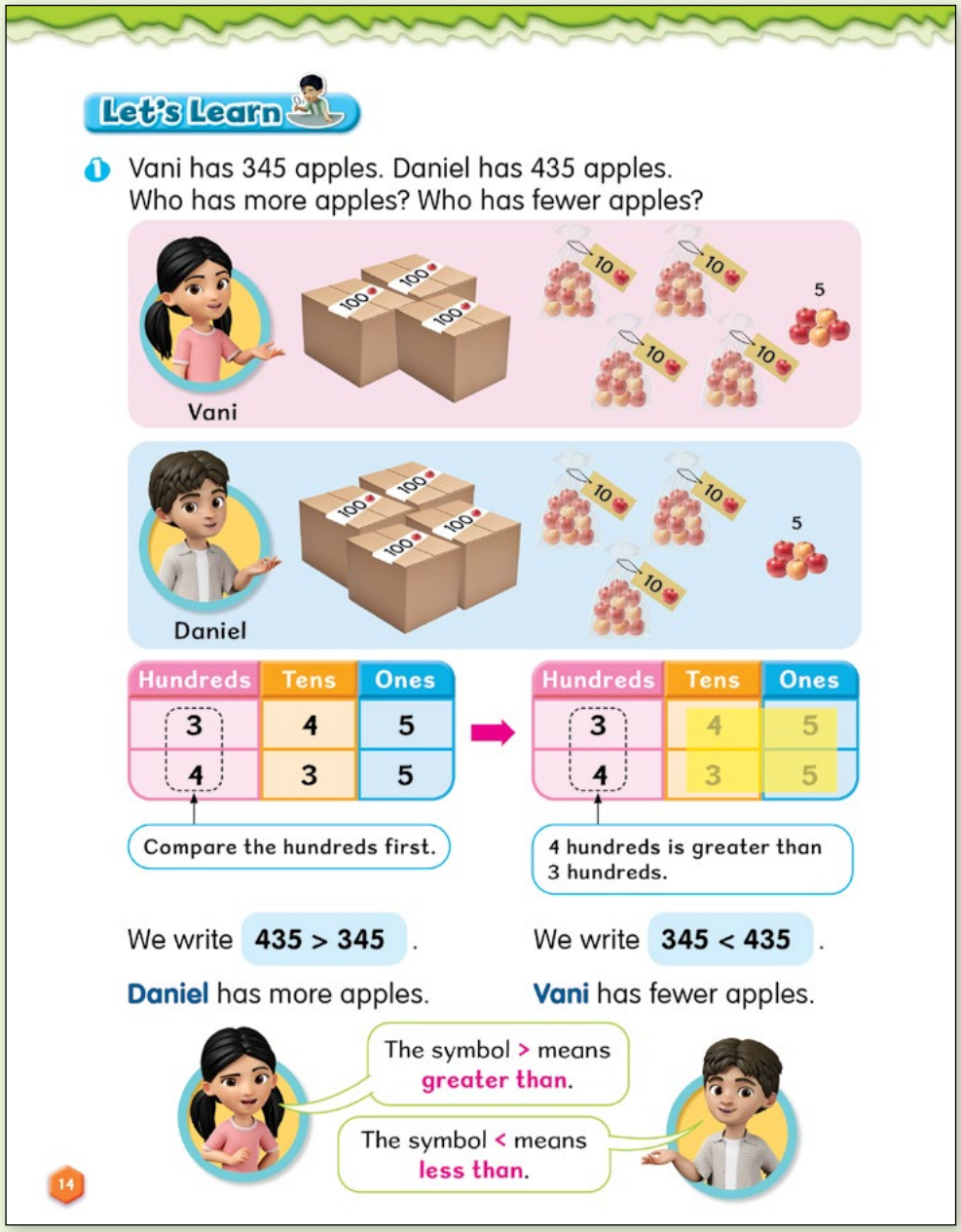
Relate what was done on the previous page, where to compare two 2-digit numerals, we compare the digit in the tens position first. For two 3-digit numerals, we compare the digit in the hundred position first.

Ask: Is 400 greater than 300?
Which number is greater?

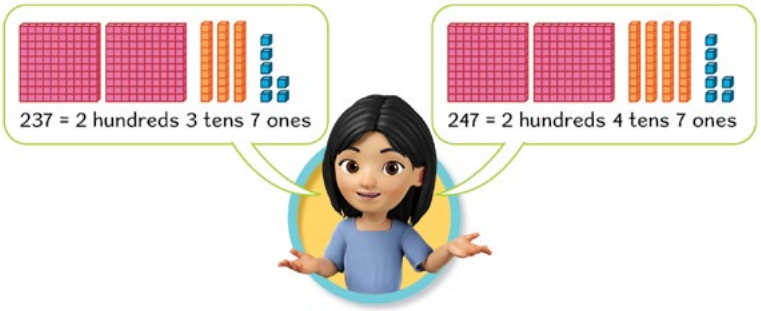
Say: Since 400 is greater than 300, 435 is greater than 345.

Teaching Note

Guide students in reading the > and < notations, have them say the inequalities out loud. That since we read from left to right, we always compare the left value to the right value.



2 Compare 237 and 247. Which number is smaller?



Hundreds	Tens	Ones
2	3	7
2	4	7

Compare the hundreds first. Both have 2 hundreds.

Hundreds	Tens	Ones
2	3	7
2	4	7

Next, compare the tens. 3 tens < 4 tens

So, **237 < 247**.

3 Compare 684 and 689. Which number is greater?

Hundreds	Tens	Ones
6	8	4
6	8	9

Compare the hundreds first. Both have 6 hundreds.

Next, compare the tens. Both have 8 tens.

Hundreds	Tens	Ones
6	8	4
6	8	9

Finally, compare the ones. 9 ones > 4 ones

So, **689 > 684**.

15

Teaching Note

For 2, emphasise that in comparing 3-digit numbers, we start with the hundreds first and then move on to compare the tens before comparing the ones.

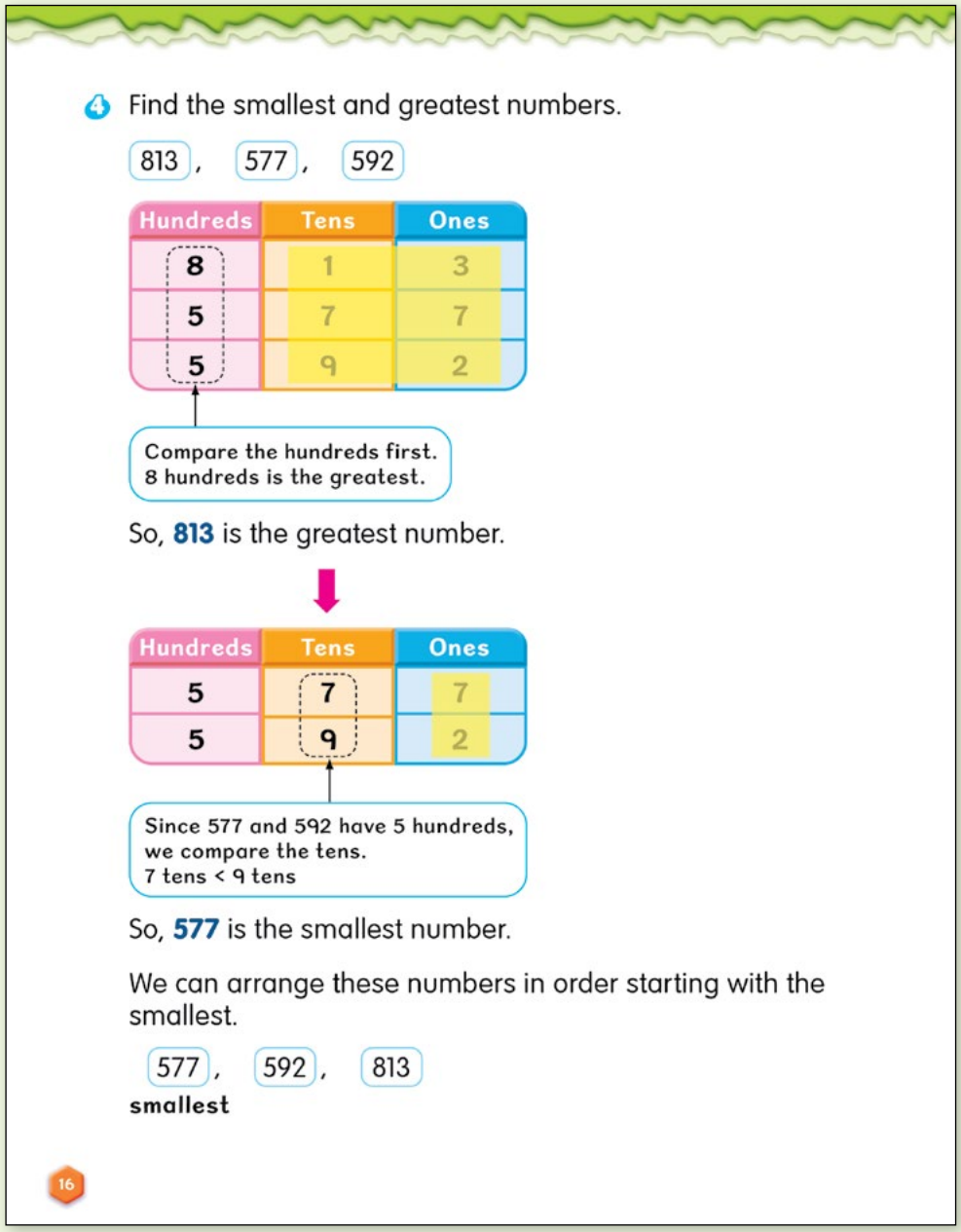
Teaching Note

In making the comparisons, use words like 'greatest' and 'smallest'.

After comparing the numbers, write them in order from the smallest to the greatest or vice versa and explain to students how the numbers are ordered.

Extension

Write some more numbers (sets of 3) on the whiteboard and invite students to arrange them in order, from the greatest to the smallest or vice versa.



4 Find the smallest and greatest numbers.

813 , 577 , 592

Hundreds	Tens	Ones
8	1	3
5	7	7
5	9	2

Compare the hundreds first.
8 hundreds is the greatest.

So, **813** is the greatest number.

Hundreds	Tens	Ones
5	7	7
5	9	2

Since 577 and 592 have 5 hundreds, we compare the tens.
7 tens < 9 tens

So, **577** is the smallest number.

We can arrange these numbers in order starting with the smallest.

577 , 592 , 813

smallest

16

Fun with Maths!

Pick three numeral cards from 1 to 9 and make the greatest 3-digit number.
Compare your number with your partner's and write both numbers in a place-value chart.
Use > or < to show the comparison.

Example

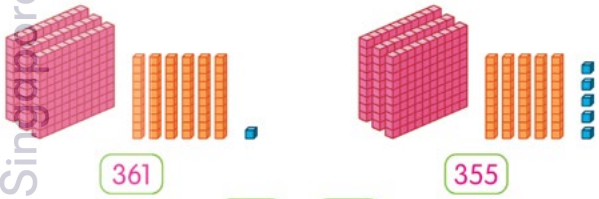
Hundreds	Tens	Ones
6	4	1
7	3	2

641 < 732

732 > 641

Let's Practise

1. Write the numbers shown by the base-ten blocks. Then compare the numbers.



361

355

361 > 355

355 < 361

Teaching Note

For this activity, encourage students to use 'place value language' and think aloud as they compare the numbers.

Let's Practise

1. 361, 355
361 > 355
355 < 361

2 Compare the numbers.

Hundreds	Tens	Ones
5	0	4
4	5	0

504 > 450
450 < 504

3 Write >, < or = in the ◯.

(a) 203 < 302
(b) 851 = 851
(c) 197 > 179
(d) 905 < 950

4 Compare 723, 809 and 812.

Hundreds	Tens	Ones
7	2	3
8	0	9
8	1	2

(a) 812 is the greatest number.
(b) 723 is the smallest number.
(c) Arrange these numbers in order. Begin with the smallest.

723, 809, 812
smallest

5 Arrange the numbers from the greatest to the smallest.

(a) 367, 515, 509

515, 509, 367
greatest

(b) 878, 798, 879, 789

879, 878, 798, 789
greatest

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Let's Practise

2. 504 > 450
450 < 504

3. **(a)** <
(b) =
(c) >
(d) <

4. **(a)** 812
(b) 723
(c) 723, 809, 812

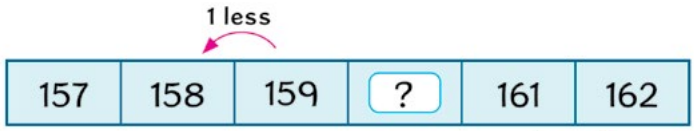
5. **(a)** 515, 509, 367
(b) 879, 878, 798, 789

Number Patterns

Let's Learn

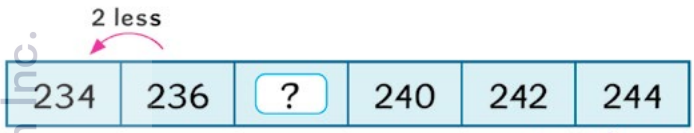
Look at each number track. Do you see a pattern?
Fill in the missing number.

1



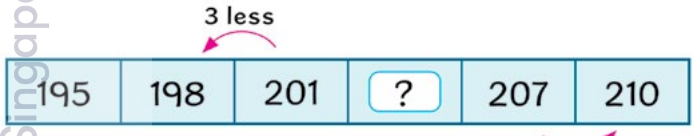
1 more than 161 is 162.
1 less than 159 is 158.
1 more than 159 is 160.
The missing number is **160**.

2



2 more than 242 is 244.
2 less than 236 is 234.
2 less than 240 is 238.
The missing number is **238**.

3



3 more than 207 is 210.
3 less than 201 is 198.
3 more than 201 is 204.
The missing number is **204**.

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Key SIOs

- To describe a given number pattern using language such as 'more/less' or 'count by…' or 'add/subtract…'
- To continue or find the missing numbers in a given number pattern within 1000.

Teaching Note

Have students observe and read aloud the sequences of numbers from left to right.

Ask: How do you get the next number?

How is the number on the right related to the previous number?

How do we then get the missing number?

Extension

Ask students if they see a certain pattern when they look at the numbers from right to left instead. Invite them to share with the class.

Teaching Note

Ask: Do you see any pattern as you look at the numbers?

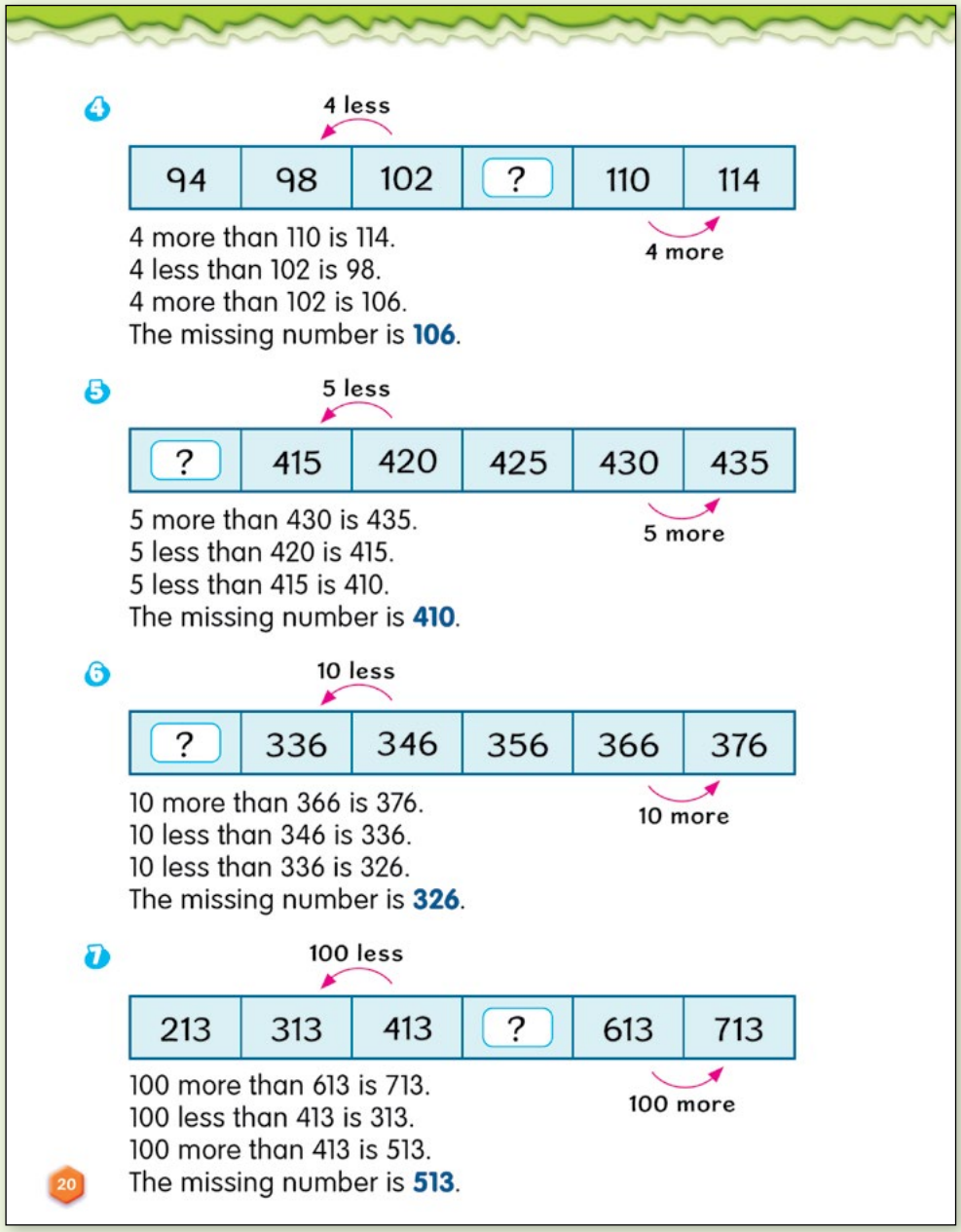
Which digit changes?

What is the value of the number that changes?

Invite students to respond and affirm their reasoning and answers.

Extension

Ask students if they see a certain pattern when they look at the numbers from right to left instead. Invite them to share with the class.



4

4 less

94	98	102	?	110	114

4 more

4 more than 110 is 114.
4 less than 102 is 98.
4 more than 102 is 106.
The missing number is **106**.

5

5 less

?	415	420	425	430	435

5 more

5 more than 430 is 435.
5 less than 420 is 415.
5 less than 415 is 410.
The missing number is **410**.

6

10 less

?	336	346	356	366	376

10 more

10 more than 366 is 376.
10 less than 346 is 336.
10 less than 336 is 326.
The missing number is **326**.

7

100 less

213	313	413	?	613	713

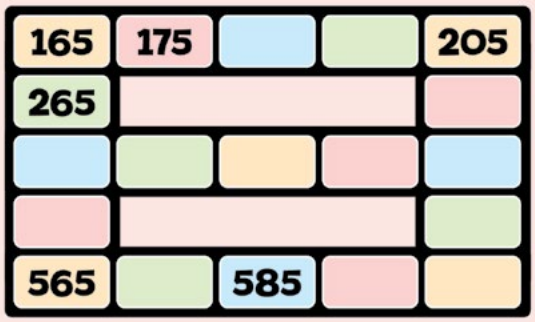
100 more

100 more than 613 is 713.
100 less than 413 is 313.
100 more than 413 is 513.
The missing number is **513**.

20

Fun with Maths!

Fill in the missing numbers.



Let's Practise

1 What are the missing numbers?

(a) 299, 300, 301, 302, 303, 304, 305, 306

What number is 1 more than 303? 304

What number is 1 less than 303? 302

Teaching Note

Ask: Do you see any pattern as you look at the numbers?

Which digit changes from the left to right?

Which digit changes from top to bottom?

Let's Practise

1. (a) 302, 304, 304, 302

(b) 760, 770, 780, 790, [800], 810, [820], 830

What number is 10 more than 790? [800]

What number is 10 less than 830? [820]

(c) [68], 168, 268, 368, 468, [568], 668, 768

What number is 100 more than 468? [568]

What number is 100 less than 168? [68]

(d) 220, [320], 420, 520, 620, 720, 820, [920]

(e) 464, 463, 462, 461, [460], 459, [458]

2 What are the missing numbers?

(a) 651, 653, 655, 657, [659], 661

(b) 341, 336, [331], 326, 321, 316

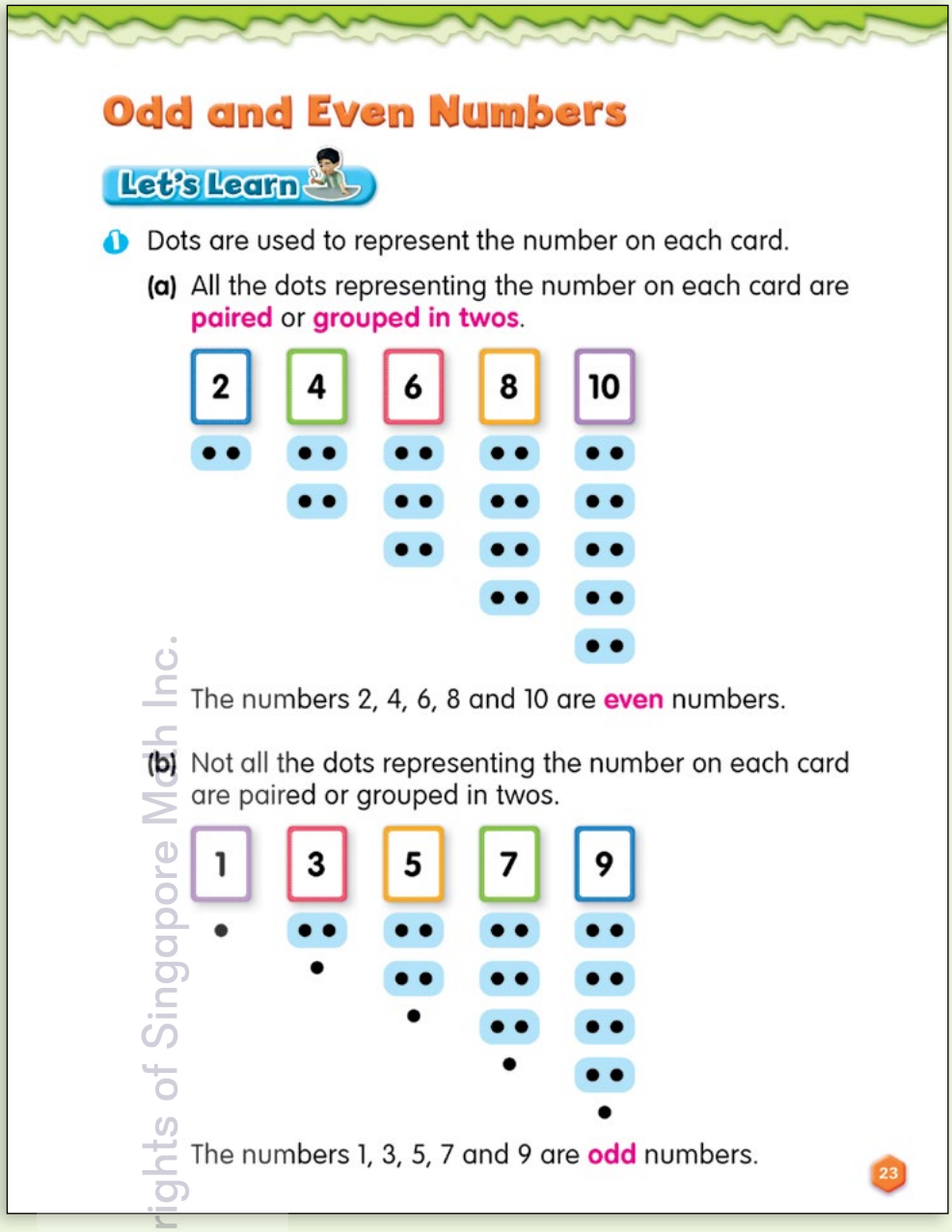
(c) 551, [547], 543, 539, 535, [531], 527, 523

(d) 740, 743, 746, [749], 752, 755

Let's Practise

(b) 800, 820, 800, 820
(c) 68, 568, 568, 68
(d) 320, 920
(e) 460, 458

2. **(a)** 659
(b) 331
(c) 547, 531
(d) 749



Odd and Even Numbers

Let's Learn

Dots are used to represent the number on each card.

(a) All the dots representing the number on each card are **paired** or **grouped in twos**.

2 4 6 8 10

The numbers 2, 4, 6, 8 and 10 are **even** numbers.

(b) Not all the dots representing the number on each card are paired or grouped in twos.

1 3 5 7 9

The numbers 1, 3, 5, 7 and 9 are **odd** numbers.

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Extension

Read the story 'Little Lulu and the Best-Dressed Party' from 5 Maths Stories. This story is appealing and can help students get acquainted with odd and even numbers.

Note: 5 Math Stories is written by Eric Chan and published by Star Publishing Pte Ltd.

Key SIOs

- To state whether a given number is an odd or even number

Teaching Note

Show 10 dot cards (1 to 10) to students, or on a visualiser. Ask students to say the numbers represented by the number of dots.

Ask: Do you see any pattern in the way they are arranged?

Invite students to respond and affirm their reasoning and answers. Move and group the even-numbered dot cards to one side and the odd-numbered dot cards to another side. Lead students to see the dot patterns in each group.

In **(a)**, the dots on each card can all be paired up. These numbers are 2, 4, 6, 8 and 10 and they are called even numbers. Write the numbers and the words 'even numbers' and have students read them.

In **(b)**, there is one dot on each card that cannot be paired up. These numbers are 1, 3, 5, 7 and 9 and they are called odd numbers. Write the numbers and the words 'odd numbers' and have students read them.

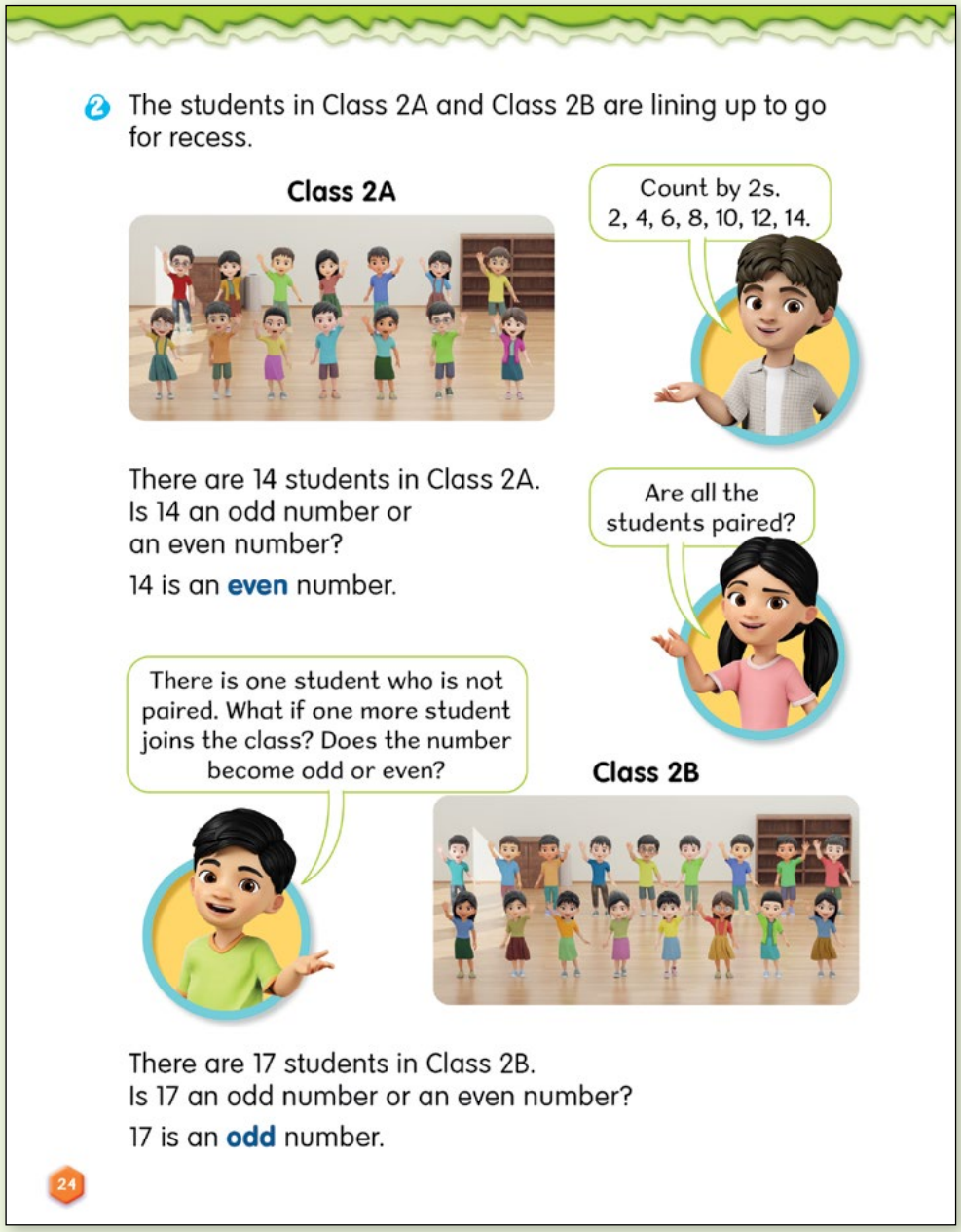
Extension

Get the students to form groups and to find a partner and queue up in two rows.

Ask the students to see if everyone in a group has a partner and count the number of students in the group.

Check with the students if anyone does not have a partner. If everyone in a group has a partner, there is an even number of students in the group. If there is one student without a partner, then that group has an odd number of students.

Consolidate these two pages by summarising that an even number can be put into groups of 2 or can be paired. An odd number has 1 item that cannot be paired.



2 The students in Class 2A and Class 2B are lining up to go for recess.

Class 2A

There are 14 students in Class 2A.
Is 14 an odd number or an even number?

14 is an **even** number.

Class 2B

There are 17 students in Class 2B.
Is 17 an odd number or an even number?

17 is an **odd** number.

24

Maths Talk

Work in groups. Look at the Hundred Chart.
Which digits in the ones place make a number even?
Which digits in the ones place make a number odd?

The Hundred Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

What are some odd and even numbers greater than 100?

Numbers in the yellow columns, with digits 2, 4, 6, 8, 0 in the ones place make a number even.

Numbers in the white columns, with digits 1, 3, 5, 7, 9 in the ones place make a number odd.

25

Teaching Note

Pick a number e.g., 37.

Ask: Is this an even or odd number?

What makes you say that?

Answer: 2 make one pair, 10 make 5 pairs, 36 make 18 pairs and 37th is an odd one. Allow students to share variety of answers.

Maths Talk

Numbers in the yellow columns, with digits 2, 4, 6, 8, 0 in the ones place make a number even.

Numbers in the white columns, with digits 1, 3, 5, 7, 9 in the ones place make a number odd.

Fun with Maths!

In pairs, decide who will represent "odd number" and "even number".

Put one hand behind your back and use your fingers to represent a number up to 5.

Both of you will say, "Ready, get set, go!" and show your fingers.

Quickly add the fingers shown.
If the sum of the fingers is an odd number, the student representing "odd number" wins 1 point.

If the sum of the fingers is an even number, the student representing "even number" wins 1 point.

Play 5 rounds to decide the winner.

26

Let's Practise

1. Write the number of tiles in the boxes.
Then put a tick (✓) in the circle for an odd or even number of tiles.

		Number	Odd number	Even number
(a)		7	✓	○
(b)		12	○	✓
(c)		16	○	✓
(d)		17	✓	○

2. Group each number as odd or even.

Odd Numbers	Even Numbers
1 11 13	6 8 14

Let's Practise

		Number	Odd number	Even number
1.	(a)	7	✓	○
	(b)	12	○	✓
	(c)	16	○	✓
	(d)	17	✓	○

2.

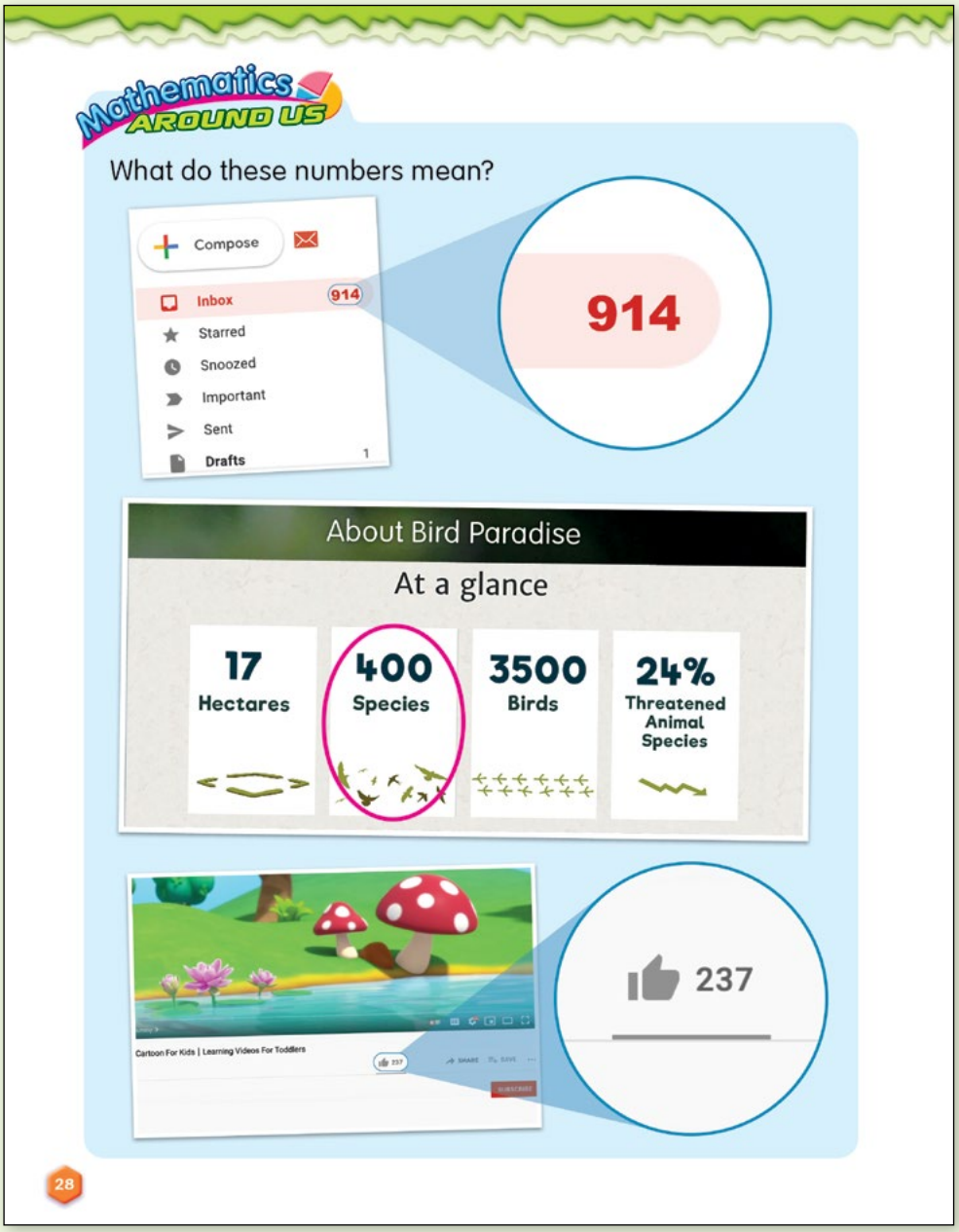
Odd Numbers	Even Numbers
1 11 13	6 8 14

Teaching Note

This page shows some real world examples of cardinal numbers. Get students to explain what the numbers represent e.g., 914 (the number of emails in the inbox), 400 (the number of bird species) and 237 (the number of 'likes' on a video).

Extension

Get students to give more examples of numbers up to 1000 used in real life.



Thinking Aloud

1 What could the number be?

(a) The number is greater than 200 but smaller than 650.

Hundreds	Tens	Ones
?	8	5

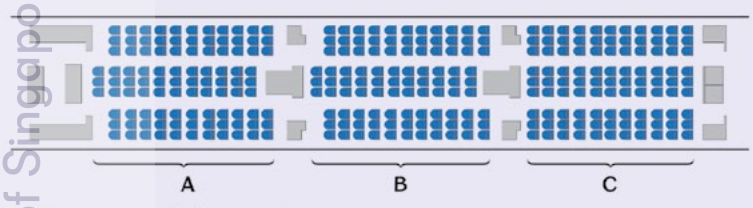
The number could be ☐.

(b) The number is smaller than 996 but greater than 969.

Hundreds	Tens	Ones
?	?	5

The number could be ☐.

2 This picture shows the passenger seats inside an aeroplane.
How many seats do you think there are for A, B or C?
Take turns to estimate the total number of seats.



Now, count the seats.
Was your estimate close to the actual number?

The actual number of seats is 297.

29

Teaching Note

The intention of 1 is for students to compare numbers, with emphasis on using "more than" and "less than" to 200 and 650. Therefore multiple answers can be expected.

For more advance students, teachers can ask them to find all possible answers, preferably by using a systematic way of listing.

Thinking Aloud

2. The actual number of seats is 297.

What Have I Learnt?

1 Place value.

A 3-digit number is made up of hundreds, tens and ones.

Hundreds	Tens	Ones
4	3	9

439 is written as four hundred and thirty-nine.
439 = 400 + 30 + 9

The digit 4 is in the hundreds place and it stands for 400.

The digit 3 in the tens place has a value of 30.

The digit 9 is in the ones place and it stands for 9.

2 Comparing numbers.

(a) We compare the hundreds.
209 < 305

(b) We compare the tens when the hundreds are the same.
239 < 241

(c) We compare the ones when both the hundreds and tens are the same.
124 < 129

30

3 Number patterns.

Some examples of number patterns are:

(a) 116, 118, 120, 122, 124

2 less, 2 less

(b) 263, 266, 269, 272, 275, 278

3 more, 3 more

(c) 414, 418, 422, 426, 430

4 less, 4 less

(d) 755, 760, 765, 770, 775

5 more, 5 more

4 Odd and even numbers.

(a) Some examples of odd numbers are:
31, 53, 65, 77, 89, 223, 487

(b) Some examples of even numbers are:
12, 24, 36, 48, 110, 352