1 Numbers to 100 000

Main Instructional Section(s)	Learning Objective(s)
Counting to 100 000	Read and write numbers in numerals and in words.
Place Values	Read and write number notations, and place values (ten thousands, thousands, hundreds, tens, ones)
Comparing and Ordering Numbers	Compare and order numbers.
Number Patterns within 100 000	Identify patterns in number sequences.
Rounding Numbers to the Nearest Ten	Round numbers to the nearest 10. Use of ≈.
Rounding Numbers to the Nearest Hundred	Round numbers to the nearest 100. Use of ≈.
Rounding Numbers to the Nearest Thousand	Round numbers to the nearest 1000. Use of ≈.
Estimation	Use of ≈.

Maths Vocabulary

Place values (ones, tens hundreds, thousands, ten thousands), compare (greater, greatest, smaller, smallest), increasing order, decreasing order, pattern, round up, round down, round to the nearest …, estimate, approximate

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My Lesson Notes

- What I noticed in this lesson.
- What prior knowledge my students already have.
- What I can include in this lesson.
- What preparations I need to do.

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Chapter Opener

- Refer students to the Chapter Opener, ask them if they have been to a stadium before, and for what purpose. Invite them to share their experiences.
- Invite students to observe the picture and describe what is happening at the planning meeting.
- Ask them to identify the different numbers shown in the picture and where each number appears.
- Ask them if they know how to read what each number represents (e.g. number of performers, seating capacity, number of steps, calculator display). Ask them if they think these numbers are large, and explain why.
- Ask students whether the numbers are exact or estimates, and how they can tell (exact number mentioned or "about" mentioned).
- Pose the question shown in the picture: Is 4857 closer to 4000 or 5000? Invite students to explain their thinking.
- Conclude by highlighting that large numbers are used in real-life situations and that the chapter will help them read, compare and make sense of numbers up to 100 000.

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Recall

1

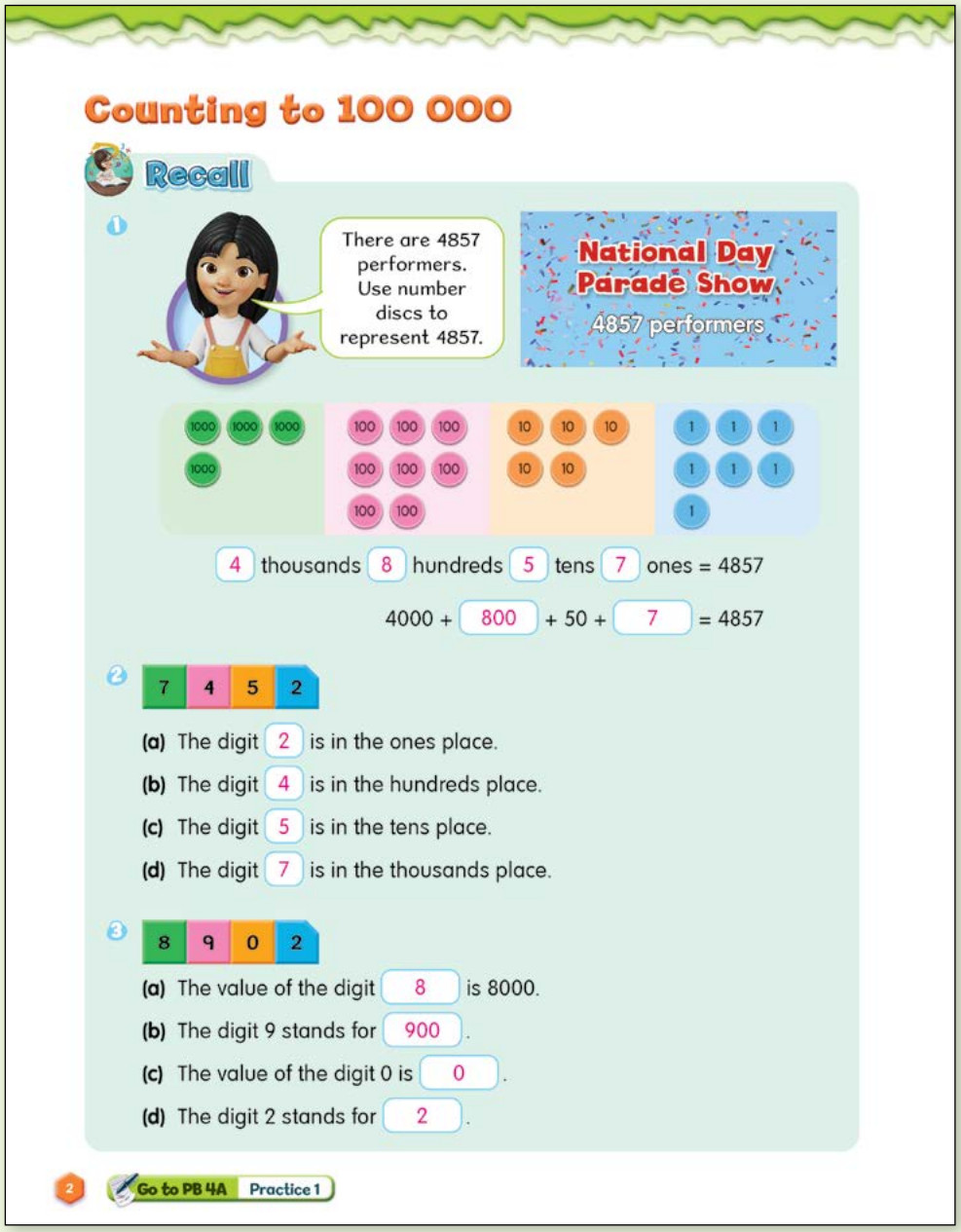
- Direct students' attention to the statement "There are 4857 performers." Ask them what the number represents in the given context.
- Revise the use of number discs and remind students that each disc represents a place value.
- Invite students to fill in the boxes to show the place-value breakdown of 4857.
- Discuss how 4857 can be written as a sum of thousands, hundreds, tens and ones.

2

- Draw attention to the place-value cards and ask students to identify which digit is in each place-value position and fill in the boxes.
- Encourage students to explain how they know the place-value of each digit.

3

- Guide students to interpret the value of each digit in the number shown.
- Invite students to complete the boxes and explain what each digit stands for.
- Affirm correct responses and address misconceptions by revisiting the meaning of each place value where necessary.
- Conclude by reinforcing that understanding place values helps them read, write and work confidently with larger numbers.



Counting to 100 000

Recall

1

There are 4857 performers. Use number discs to represent 4857.

National Day Parade Show

4857 performers

4 thousands 8 hundreds 5 tens 7 ones = 4857

4000 + 800 + 50 + 7 = 4857

2

7 4 5 2

(a) The digit 2 is in the ones place.

(b) The digit 4 is in the hundreds place.

(c) The digit 5 is in the tens place.

(d) The digit 7 is in the thousands place.

3

8 9 0 2

(a) The value of the digit 8 is 8000.

(b) The digit 9 stands for 900.

(c) The value of the digit 0 is 0.

(d) The digit 2 stands for 2.

2 Go to PB 4A Practice 1

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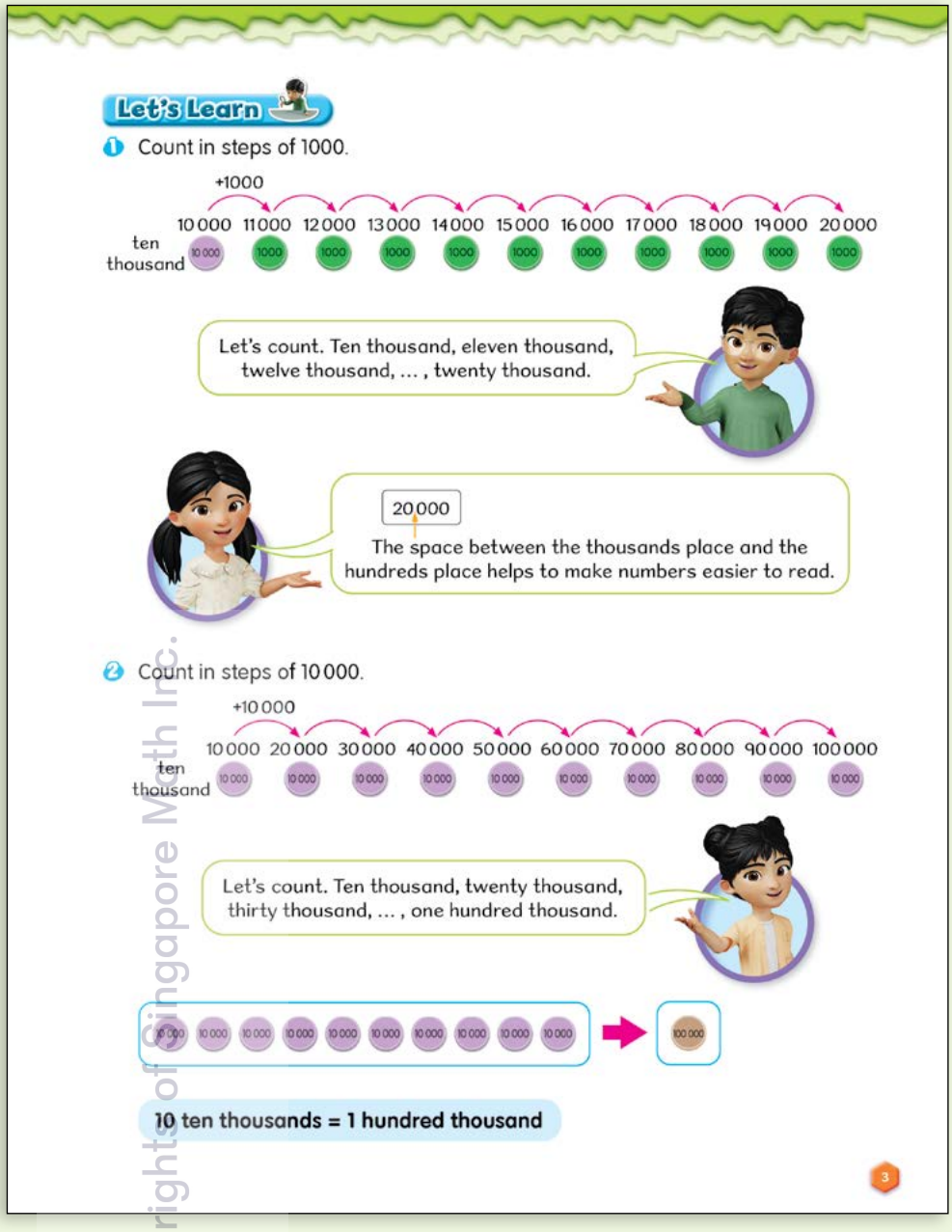

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Let's Learn

1

- Direct students' attention to the number discs shown.
- Remind them that each green disc represents 1000.
- Guide students to count aloud together in steps of 1000 from 10 000 to 20 000. Refer them to the speech bubble to learn how to read numbers correctly.
- Draw attention to how each jump adds 1000 to the previous number.
- Highlight the spacing in the written numbers (e.g. 10 000 and 20 000) and explain that the space separates the thousands from the hundreds, tens and ones.

2

- Draw a number line with markings from 0 to 10 on the board.
- Guide students to observe how ten 10 000-discs make 100 000.
- Bring up the idea of "renaming" (what students have already learned in previous grade levels). Reinforce the relationship:
  10 ten thousands = 1 hundred thousand
  or 10 ten thousands can be renamed as 1 hundred thousand.

3 (a) and **(b)**

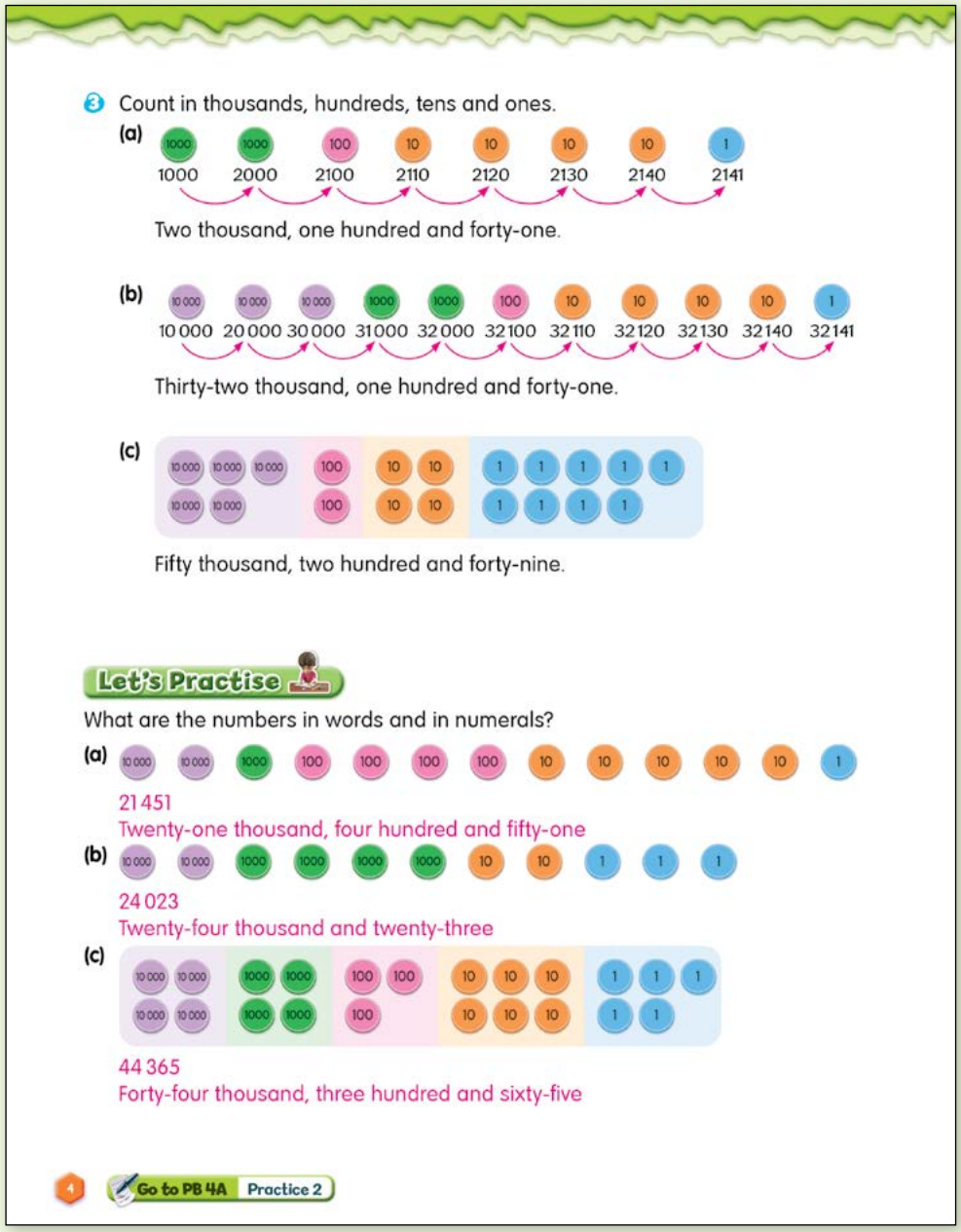
- Refer students to the discs and number sequence shown.
- Guide them to count forward by adding thousands first, then hundreds, tens and ones.
- Ask students to read each number aloud using correct place-value language.

(c)

- Have students apply what they have learned by identifying how many discs of each place value are shown, then guide them to combine the values to read the number.
- You may ask: Why is the number read as "fifty thousand, two hundred and forty-nine"?

Let's Practise

- Invite students to complete the exercises independently.
- Provide guidance when needed.
- Discuss the answers with them.



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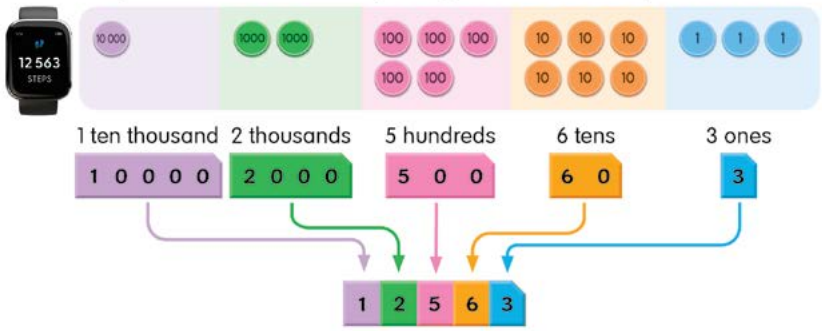
Place Values

Let's Learn

1 The fitness watch shows that 12 563 steps have been taken.
Let us represent the number of steps using number discs and place-value cards.



twelve thousand, five hundred and sixty-three

$(1 \times 10\,000) + (2 \times 1000) + (5 \times 100) + (6 \times 10) + (3 \times 1)$
$= 10\,000 + 2000 + 500 + 60 + 3 = 12\,563$

The digit 1 stands for 1 ten thousand.
It has a value of 10 000.
It is in the ten thousands place.

The digit 2 stands for 2 thousands.
It has a value of 2000.
It is in the thousands place.

The digit 5 stands for 5 hundreds.
It has a value of 500.
It is in the hundreds place.

The digit 6 stands for 6 tens.
It has a value of 60.
It is in the tens place.

The digit 3 stands for 3 ones.
It has a value of 3.
It is in the ones place.

5

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Let's Learn

1

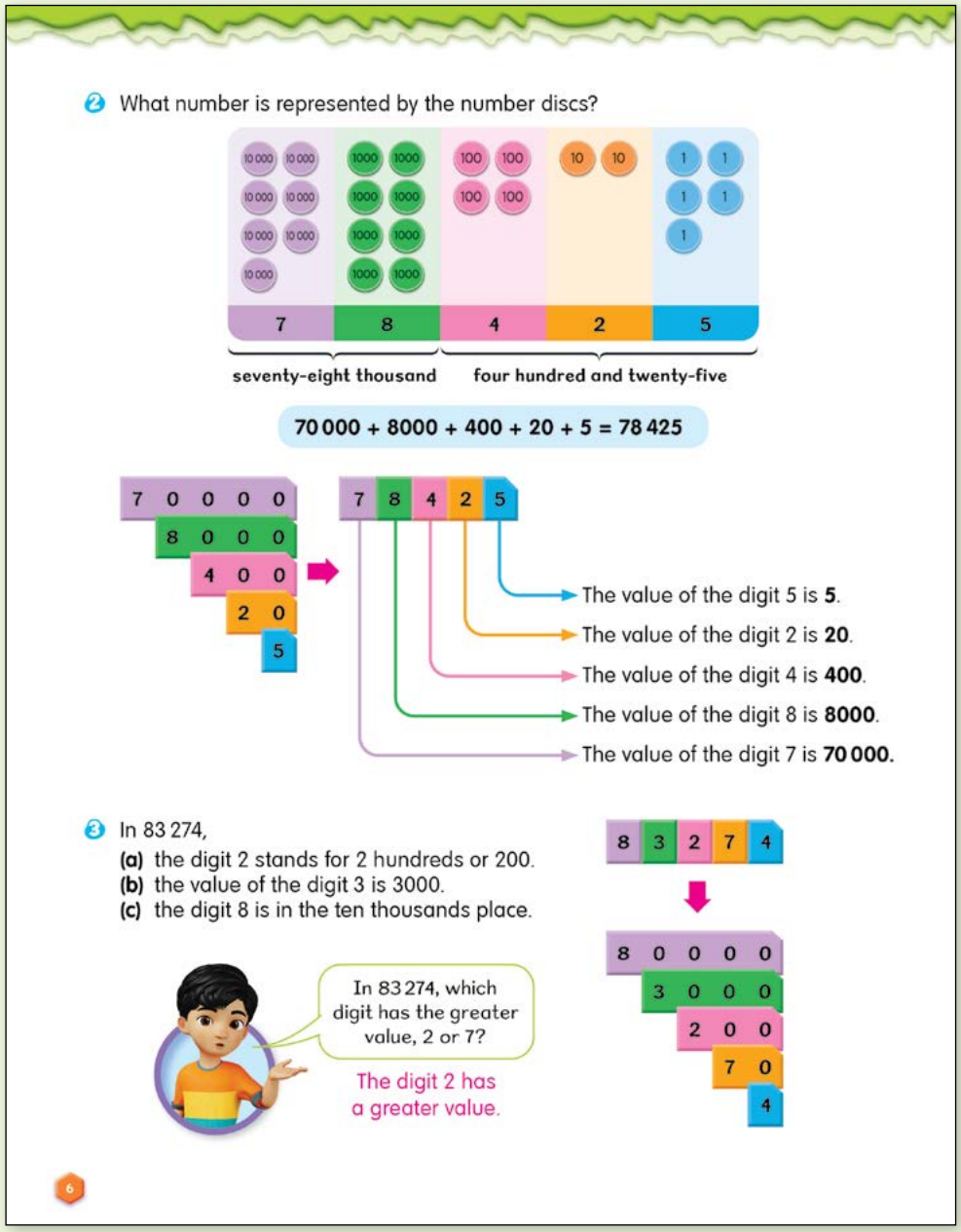
- Go through the context and draw students' attention to the fitness watch and read the number of steps shown.
- Ask students what the number represents in the given context.
- Explain that the number is represented using number discs and place-value cards.
- Highlight how each digit in the number corresponds to a place value and a quantity.
- Guide students to read the number aloud using appropriate place-value language.
- Refer students to the expanded form and explain how the number is built by adding the values of each digit.
- Based on 12 563, go through the value and place of each digit.

2

- Direct students' attention to the number discs arranged by place value.
- Guide them to see the value represented by each group of number discs (ten thousands, thousands, hundreds, tens, ones).
- Invite them to read the number aloud using place-value language.
- Guide them to write the number in expanded form by adding the value of each group.
- Draw attention to the place-value cards and show how they match the discs.
- Highlight how each digit in the number corresponds to a place and a value.
- Ask questions related to the place of the digits since their values are known. For example, "In which place is the digit 2?"

3

- Refer students to the number 83 274.
- Go through **(a)** to **(c)**. Use the place-value cards to show how the number is decomposed.
- Ask other related questions to prompt students to state the value or place of selected digits, in addition to those given in **(a)** to **(c)**.
- Conclude by emphasising that understanding place value helps students read, compare and interpret large numbers accurately.



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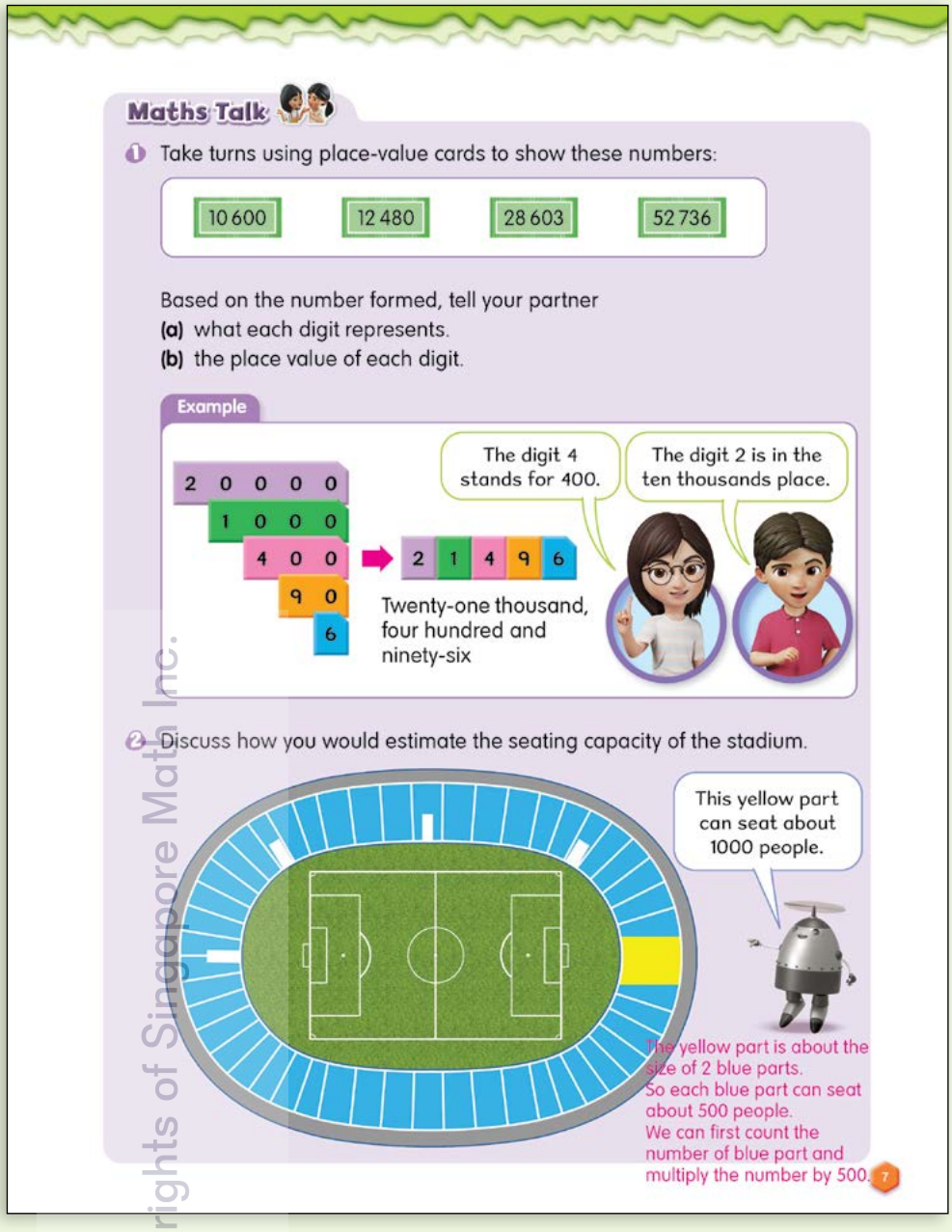

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Maths Talk

1

Materials: Place-value cards

- Have each student form two of the given numbers using place-value cards.
- Ask each student to explain the number they have formed to their partner by stating by stating the value and place of each digit. Refer students to the example and highlight the correct use of place-value language.
- Encourage students to listen to their partner's explanation and ask clarifying questions.

AfL Are students able to:

- Explain what each digit represents in the number formed?
- Correctly identify the place value of each digit?
- Use appropriate mathematical language (e.g. ten thousands, hundreds, ones)?

Suggested Action(s)

For students who need additional support:

- Provide a partially completed set of place-value cards and guide students to complete the number.
- Ask them to focus on one place value at a time before forming the whole number.
- Use guiding prompts such as:
  - "What does this digit represent?"
  - "What value does it show?"
  - "What does the value tell you about its place?"

2

- Direct students' attention to the stadium illustration and ask them to observe the coloured sections.
- Guide students to discuss how the yellow section can be used as a benchmark.
- Encourage students to estimate how many people each blue section might seat in relation to the yellow section.
- Invite students to explain how they would estimate the total seating capacity.
- Accept reasonable estimation strategies and emphasise that different approaches may be valid.
- Discuss the importance of estimation in real-life situations where exact numbers are not easily obtained.

AfL Are students able to:

- Explain why their estimate is reasonable using the visual cues in the diagram?

Suggested Action(s)

For students who need additional support:

- Model one estimation strategy using the stadium diagram before asking students to try.
- Encourage students to use simpler benchmarks (e.g. estimating the number of blue sections first).

Let's Practise

- Invite students to complete the exercises independently.
- Provide guidance when needed.
- Discuss the answers with them.

Let's Practise

1 What number is represented by the number discs?

4 ten thousands 2 thousands 3 hundreds 0 tens 1 one

= 40 000 + 2000 + 300 + 1

= 42 301

2 In 9 8 7 0 5,

(a) the digit 9 is in the ten thousands place.

(b) the digit 8 stands for 8000.

(c) the digit 7 is in the hundreds place.

(d) the value of the digit 0 is 0.

3 In 3 0 6 4 2,

(a) the digit 6 stands for 600.

(b) the digit 0 is in the thousands place.

(c) the digit 2 stands for 2 ones.

(d) the digit 4 stands for 40.

(e) the value of the digit 3 is 30 000.

8 Go to PB 4A Practice 3

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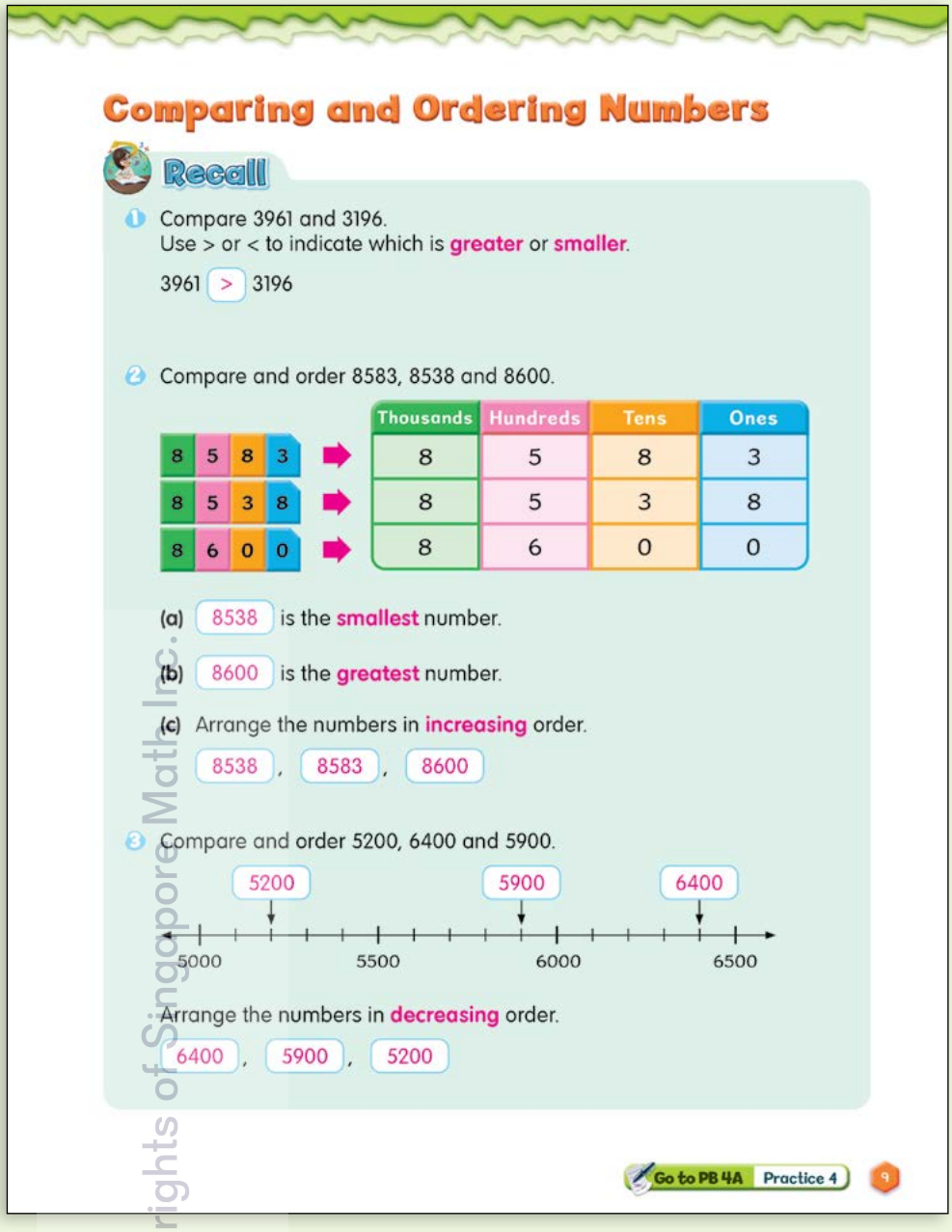

Comparing and Ordering Numbers

Recall

1. Compare 3961 and 3196.
Use > or < to indicate which is **greater** or **smaller**.

3961 [>] 3196

2. Compare and order 8583, 8538 and 8600.

	Thousands	Hundreds	Tens	Ones
8 5 8 3 →	8	5	8	3
8 5 3 8 →	8	5	3	8
8 6 0 0 →	8	6	0	0

(a) [8538] is the **smallest** number.

(b) [8600] is the **greatest** number.

(c) Arrange the numbers in **increasing** order.

[8538] , [8583] , [8600]

3. Compare and order 5200, 6400 and 5900.

Arrange the numbers in **decreasing** order.

[6400] , [5900] , [5200]

Go to PB 4A Practice 4

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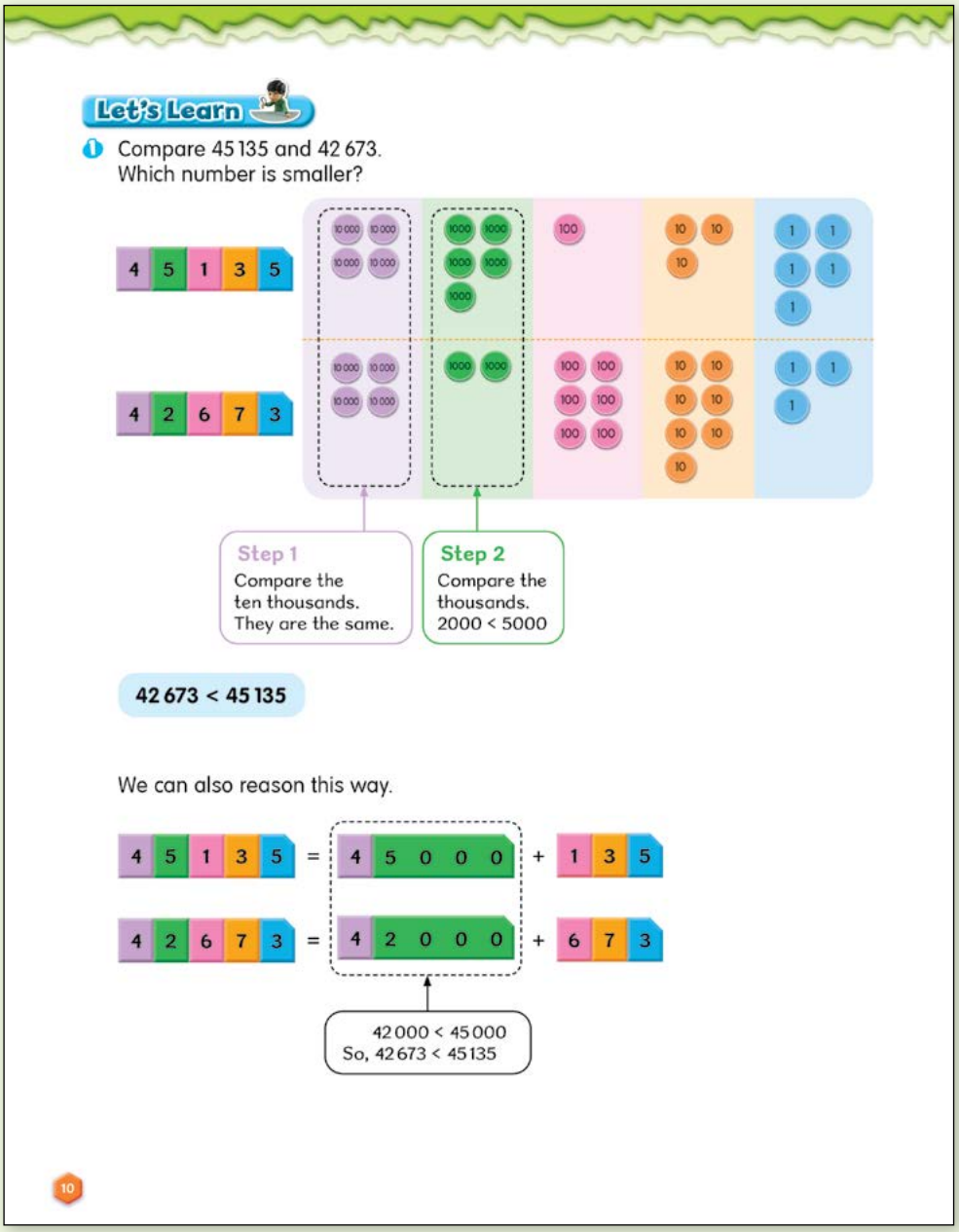
Recall

1
- Direct students' attention to the two numbers shown.
- Ask them to compare the numbers digit by digit, starting from the thousands place.
- Invite them to choose the correct symbol (> or <) and fill in the box.
- Ask students to explain how they know which number is greater or smaller.

2
- Refer students to the place-value cards and place-value chart shown.
- Guide them to compare the numbers by using the place-value chart.
- Invite students to identify the smallest and greatest numbers and fill in the boxes.
- Ask them to arrange the numbers in increasing order.
- Invite them to share the steps they took to compare the numbers.

3
- Direct students' attention to the number line.
- Ask them to locate where each number would lie on the number line.
- Guide students to compare the positions of the numbers.
- Invite them to arrange the numbers in decreasing order by filling in the boxes.
- Invite them to share how the number line helps them order the numbers.

Let's Learn



- Direct students' attention to the two numbers shown: 45 135 and 42 673.
- Ask students to read both numbers aloud to ensure correct number sense.
- Ask students which place value they should compare first, and why.
- Affirm their responses and explain that the numbers will be compared using place-value reasoning, starting from the highest place value.
- Guide students to compare the ten-thousands digits in both numbers and observe that they are the same.
- Move to the thousands place and compare the values represented by the number discs.
- Highlight that 2 thousands is less than 5 thousands, so the number with fewer thousands is smaller.
- Ask whether they need to compare the hundreds, tens and ones, and why.
- Conclude that 42 673 is smaller than 45 135.
- Draw attention to the comparison statement shown and explain that the comparison can be written using the "less than" symbol, <, and have them read it together.
- Inform students that the two numbers may also be compared based on the thousands place.
- Guide them to decompose each number into thousands and the remaining part.
- Compare 42 000 and 45 000 to determine which is smaller.
- Explain that once the thousands are different, there is no need to compare the remaining digits.
- Reinforce that both methods lead to the same conclusion.

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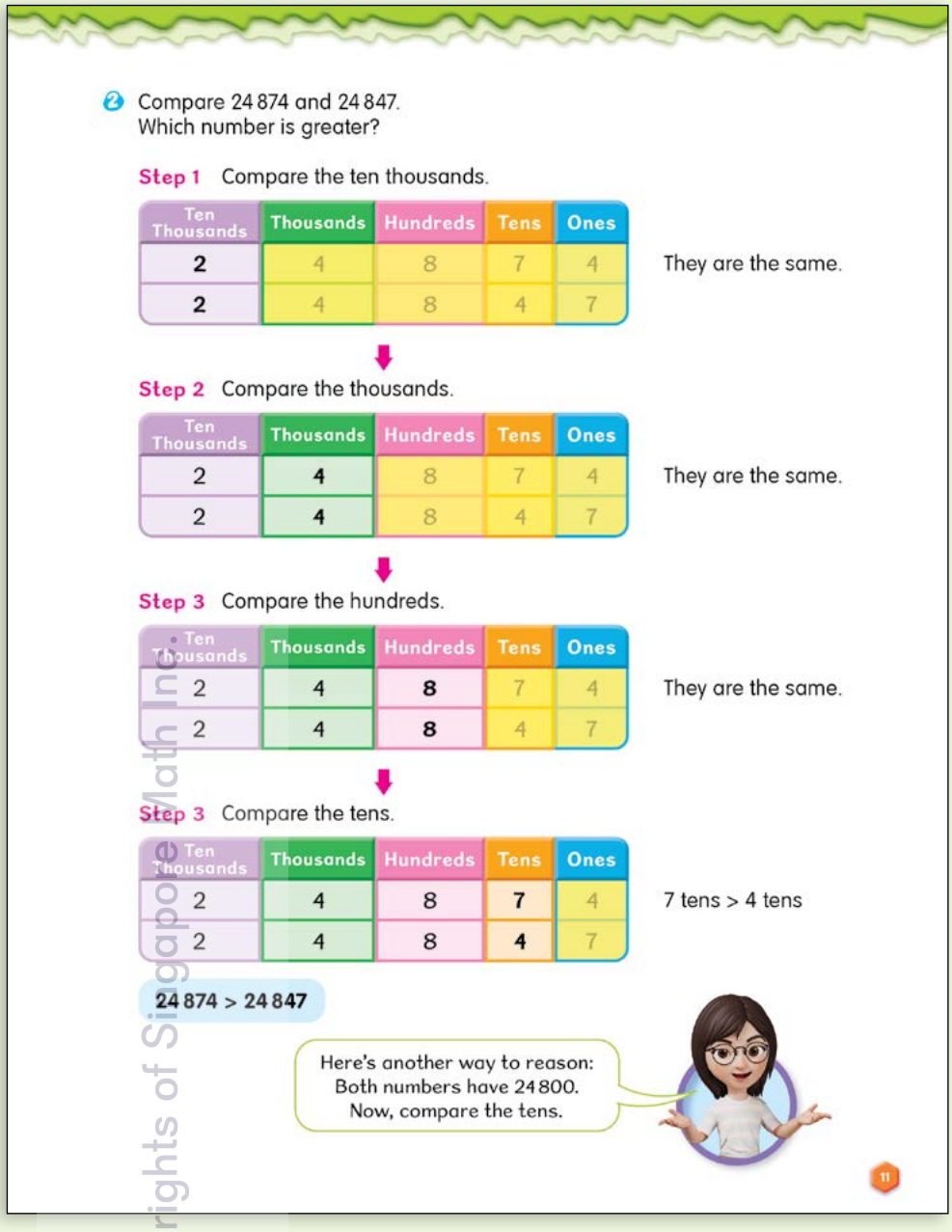

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- Read the comparison statement together.
- Have students recall from the previous example that they can compare more efficiently by noticing that both numbers have 24 800.
- Explain that when the thousands and hundreds are the same, comparing the tens is sufficient.
- Refer students to the textbook page and inform them to review the example as reinforcement of the demonstration.

2

- Demonstrate how to compare by drawing the place-value chart on the board and fill in the two numbers, 24 874, and 24 847.
- Ask students to read both numbers aloud to ensure correct place-value awareness.
- Explain that the numbers will be compared one place value at a time, starting from the highest place value.
- Use the **Cover-and-Slide method** to help students focus on the digits in place-value column currently attended to, by holding a book to cover the remaining digits.

Step 1: Compare the ten thousands

- Guide students to compare the ten-thousands digits.
- Confirm that both numbers have 2 ten thousands, so they are the same.
- Emphasise that when the digits are the same, they move to the next place value. Slide the book to reveal the next place-value column.

Step 2: Compare the thousands

- Ask students to compare the thousands digits.
- Confirm that both numbers have 4 thousands, so they are the same.
- Reinforce that the comparison continues only when the digits are equal. Slide the book to reveal the next place-value column.

Step 3: Compare the hundreds

- Guide students to compare the hundreds digits.
- Confirm that both numbers have 8 hundreds, so they are the same. Slide the book to reveal the next place-value column.

Step 4: Compare the tens

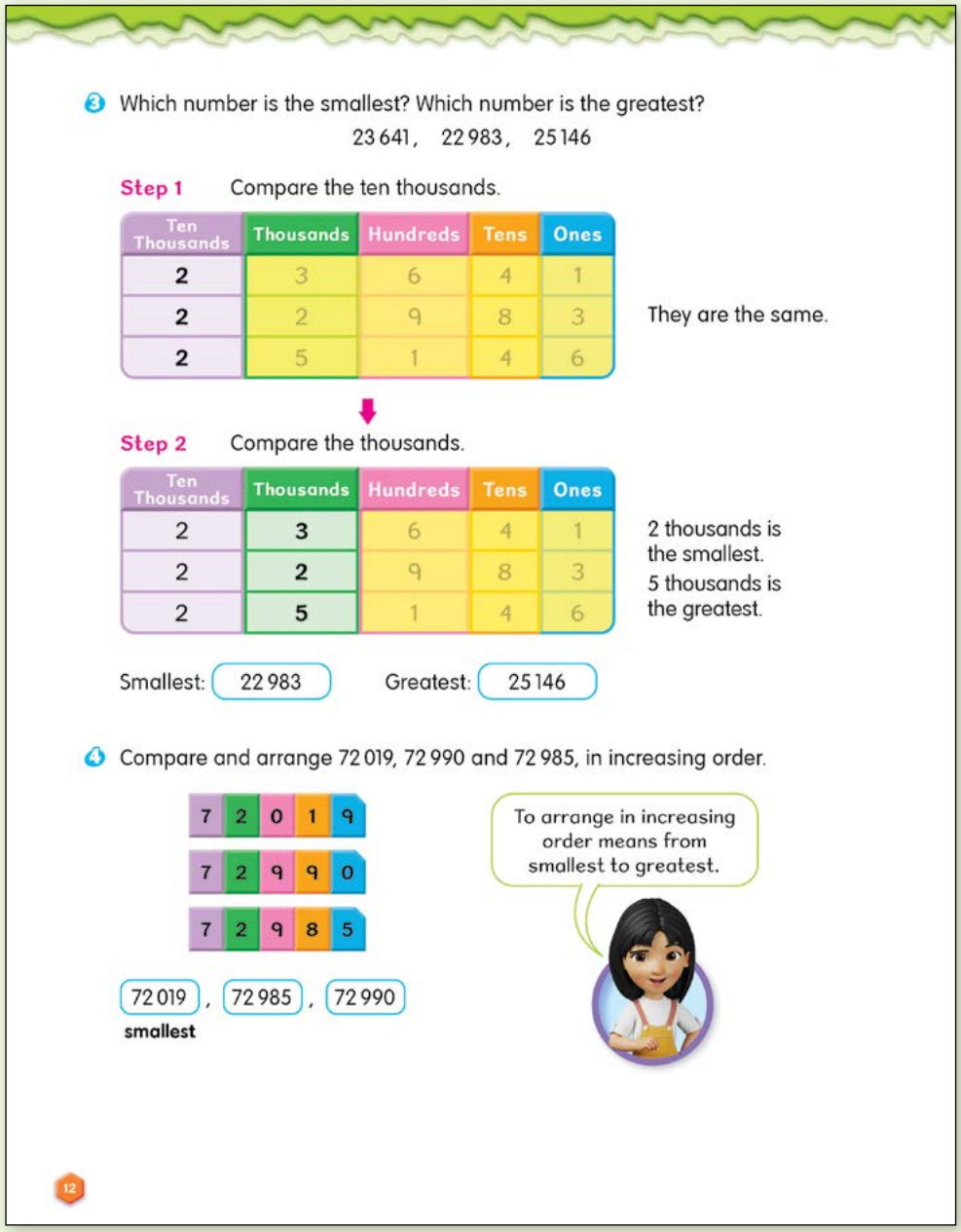
- Direct students' attention to the tens digits.
- Guide them to recognise that 7 tens is greater than 4 tens.
- Conclude that 24 874 is greater than 24 847.

3

- Carry out the teaching instruction in a similar manner to **2**.
- Explain that the numbers will be compared using place value, starting from the highest place value, applying the **Cover-and-Slide method**.

4

- Direct students' attention to the three numbers: 72 019, 72 990 and 72 985.
- Ask them to read the numbers aloud and observe the digits carefully.
- Remind students that to arrange numbers in increasing order means to arrange the numbers from the smallest to the greatest.
- Guide students to compare the numbers by place value and explain why one number is smaller or greater than another, leading to the correct order of the three numbers.



3 Which number is the smallest? Which number is the greatest?

23 641, 22 983, 25 146

Step 1 Compare the ten thousands.

Ten Thousands	Thousands	Hundreds	Tens	Ones
2	3	6	4	1
2	2	9	8	3
2	5	1	4	6

They are the same.

Step 2 Compare the thousands.

Ten Thousands	Thousands	Hundreds	Tens	Ones
2	**3**	6	4	1
2	**2**	9	8	3
2	**5**	1	4	6

2 thousands is the smallest.
5 thousands is the greatest.

Smallest: 22 983 Greatest: 25 146

4 Compare and arrange 72 019, 72 990 and 72 985, in increasing order.

7 2 0 1 9
7 2 9 9 0
7 2 9 8 5

72 019 , 72 985 , 72 990
smallest

To arrange in increasing order means from smallest to greatest.

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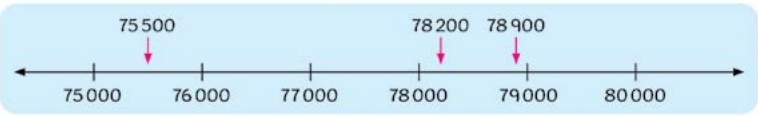
5 Arrange the numbers in increasing order.

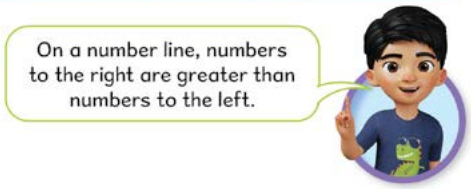
78 900, 75 500, 78 200

A number line can be used to compare and order numbers.



75 500, 78 200, 78 900

smallest



Let's Practise

1 Compare 29 716 and 26 617.
Use > or < to indicate which number is greater or smaller.

29 716 (>) 26 617

26 617 is smaller than 29 716.

2 Compare 34 766, 34 667 and 43 667.

Ten Thousands	Thousands	Hundreds	Tens	Ones
3	4	7	6	6
3	4	6	6	7
4	3	6	6	7

Arrange the numbers in decreasing order.

43 667, 34 766, 34 667

3 Arrange 68 500, 65 300, 66 800 in increasing order.

65 300, 66 800, 68 500

Go to PB 4A Practice 5

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5

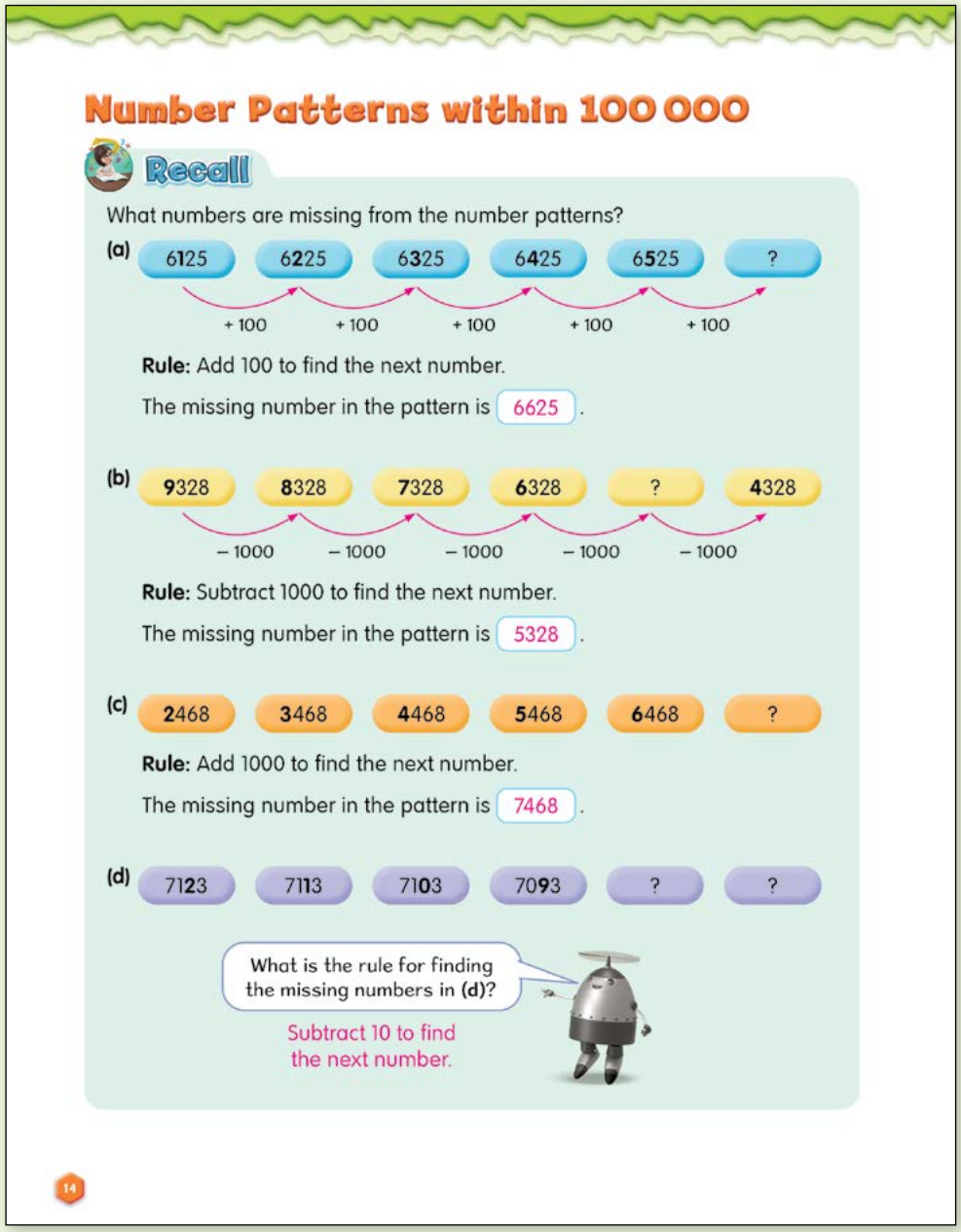
- Direct students' attention to the three numbers given: 78 900, 75 500 and 78 200.
- Ask students to read each number aloud to reinforce number sense.
- Remind students that increasing order means arranging numbers from smallest to greatest.
- Introduce the number line and explain that it can be used as a visual tool to compare and order numbers.
- Guide students to locate the three given numbers on the number line.
- Ask students to observe the positions of the numbers relative to one another.
- Emphasise that numbers to the right on a number line are greater than numbers to the left, resulting in the correct order of the three numbers.

Let's Practise

- Invite students to complete the exercises independently.
- Provide guidance when needed.
- Discuss the answers with them.

Recall

- Direct students' attention to each number pattern shown.
- Ask students to read the numbers in each pattern aloud.
- Invite students to observe how the numbers change from one term to the next.
- Guide students to identify the rule used in each pattern.
  For example, "Add 100, subtract 1000."
- Ask students to use the rule to determine the missing number(s).
- Encourage students to explain how they found the missing numbers by describing how the digits change in the same place value.
- Invite students to fill in the boxes with their answers.
- Conclude by reinforcing that number patterns follow a consistent rule.



Number Patterns within 100 000

Recall

What numbers are missing from the number patterns?

(a) 6125, 6225, 6325, 6425, 6525, ?

+ 100, + 100, + 100, + 100, + 100

Rule: Add 100 to find the next number.

The missing number in the pattern is 6625.

(b) 9328, 8328, 7328, 6328, ?, 4328

– 1000, – 1000, – 1000, – 1000, – 1000

Rule: Subtract 1000 to find the next number.

The missing number in the pattern is 5328.

(c) 2468, 3468, 4468, 5468, 6468, ?

Rule: Add 1000 to find the next number.

The missing number in the pattern is 7468.

(d) 7123, 7113, 7103, 7093, ?, ?

What is the rule for finding the missing numbers in (d)?

Subtract 10 to find the next number.

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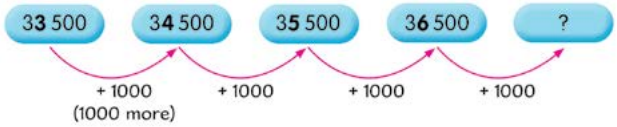
Let's Learn

What number patterns do you see?
Describe the pattern using a rule.

1 **Rule:** Add 1000 to find the next number.



1000 more than 36 500 is 37 500.
The next number in the pattern is **37 500**.

Check 1000 less than 37 500 is 36 500.

2 **Rule:** Add 100 to find the next number.

100 more than 71 545 is 71 645.
The next number in the pattern is **71 645**.

Check 100 less than 71 645 is 71 545.

15

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Let's Learn

1

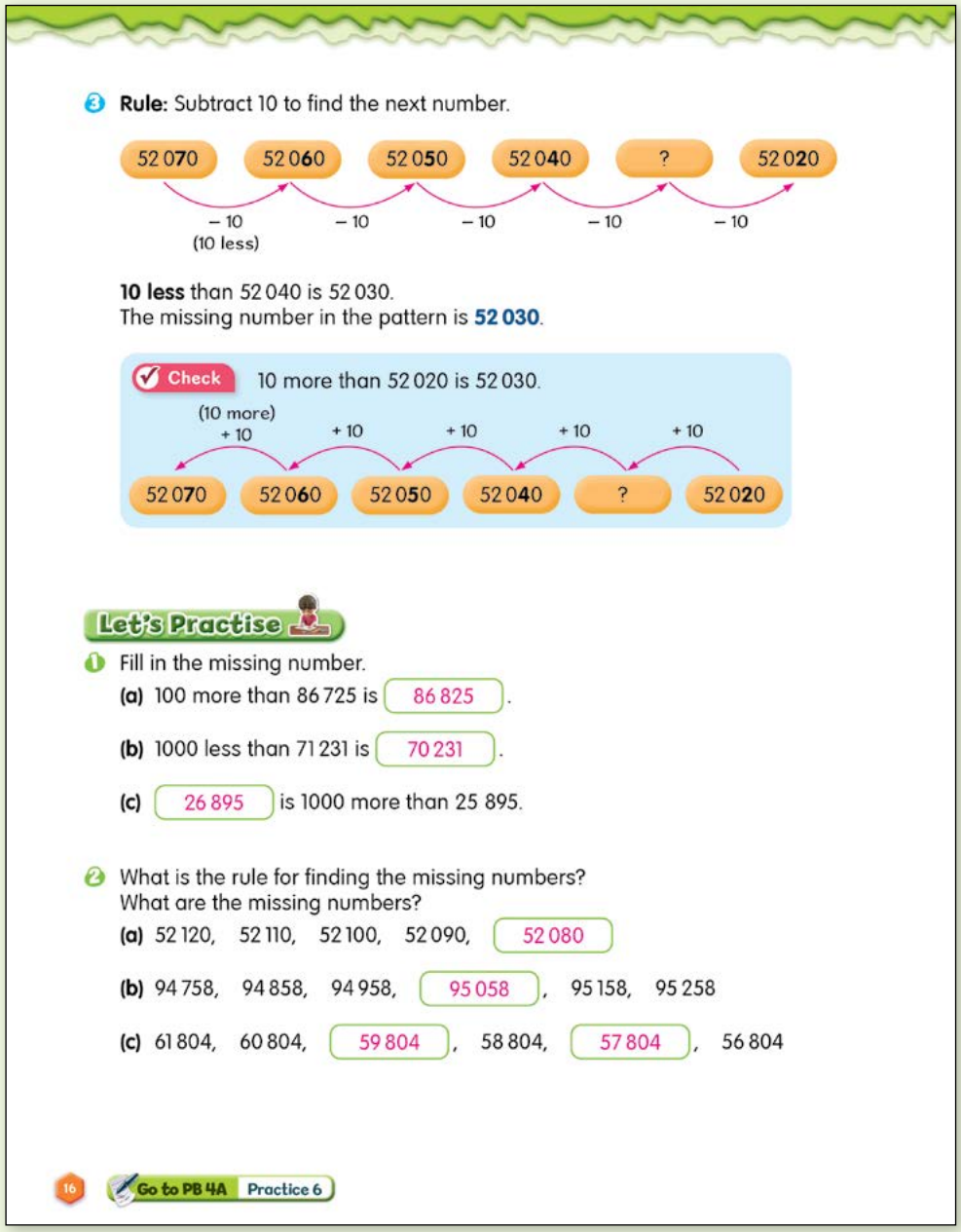
- Direct students' attention to the number pattern shown.
- Ask students to read the numbers aloud in order.
- Guide them to observe how the numbers change from one term to the next by focusing on what increases or decreases.
- Lead students to identify the rule as adding 1000 each time to find the next number.
- Ask students to apply the rule to find the missing number.
- Refer to the statement "1000 more than 36 500 is 37 500" and read it together. Invite students to fill in the box with the next number.
- Highlight the Check section and explain that subtracting 1000 helps verify the rule.
- Guide students to confirm that the pattern works in both forward and backward directions.

2 and 3

- Carry out the teaching instruction in a similar manner to 1.
- Some guiding questions include:
  - "What changes from one number to the next in this pattern?"
  - "Which place value changes?"
  - "What is the next number? How did you find it?"
- Conclude with the idea that number patterns follow a clear rule based on place value changes.

Let's Practise

- Invite students to complete the exercises independently.
- Provide guidance when needed.
- Discuss the answers with them.



3 **Rule:** Subtract 10 to find the next number.

52 070 — 52 060 — 52 050 — 52 040 — ? — 52 020

− 10 (10 less) − 10 − 10 − 10 − 10

10 less than 52 040 is 52 030.
The missing number in the pattern is **52 030**.

Check 10 more than 52 020 is 52 030.

(10 more) + 10 + 10 + 10 + 10 + 10

52 070 — 52 060 — 52 050 — 52 040 — ? — 52 020

Let's Practise

1 Fill in the missing number.

(a) 100 more than 86 725 is 86 825.

(b) 1000 less than 71 231 is 70 231.

(c) 26 895 is 1000 more than 25 895.

2 What is the rule for finding the missing numbers?
What are the missing numbers?

(a) 52 120, 52 110, 52 100, 52 090, 52 080

(b) 94 758, 94 858, 94 958, 95 058, 95 158, 95 258

(c) 61 804, 60 804, 59 804, 58 804, 57 804, 56 804

16 Go to PB 4A Practice 6

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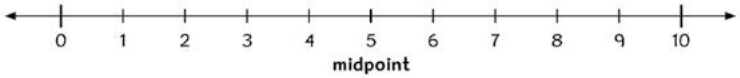
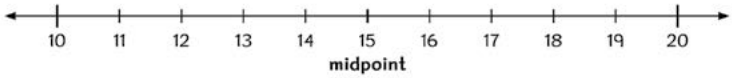
Rounding Numbers to the Nearest Ten

Let's Learn

1 Let us find the midpoint of numbers on a number line.
The **midpoint** between 0 and 10 is **5**.
5 is **halfway** between 0 and 10.

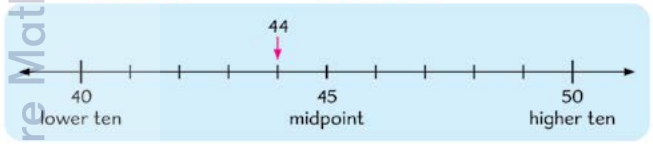


What is the midpoint between 10 and 20?
15 is the midpoint between 10 and 20.
15 is halfway between 10 and 20.



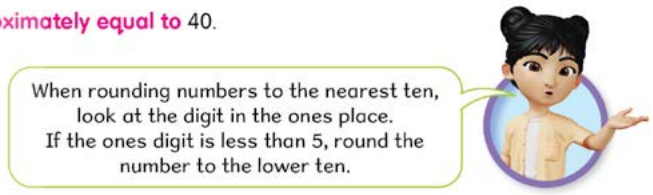
2 **Rounding** numbers to the nearest ten is a way to **estimate** numbers to the nearest ten.

Round 44 to the nearest ten.
44 is between 4 tens and 5 tens.
40 is the **lower ten** and 50 is the **higher ten**.



44 is nearer to 40 than 50.
44 is **40** when rounded to the nearest ten.

44 is **approximately equal to** 40.
44 ≈ 40



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- Ask them what other numbers round to the lower ten. Have them notice that if the digit in the ones place is less than 5, these numbers round to the lower ten, otherwise they round to the higher ten. In other words, rounding to the nearest ten is also based on whether the number is less than, equal to or greater than the midpoint.
- Refer students to the content on the page and briefly go through 1 and 2 to reinforce what has been demonstrated.
- Emphasise that the rule is as described in the speech bubble.

Let's Learn

1

- Explain that to round a number is to change a number to a nearby "friendly" number so that it is easier to use, but still close to the original number.
- Draw a number line with markings from 0 to 10 on the board.
- Ask students to locate the midpoint and identify the number at that position.
- Guide students to recognise that 5 is halfway between 0 and 10.
- Reinforce the meaning of midpoint as the number that is equally distant from both ends.
- Ask them to state which numbers are nearer to 0, and which numbers are nearer to 10.
- Repeat the process with the number line from 10 to 20.
- Emphasise that finding the midpoint helps us decide which ten a number is closer to.

2

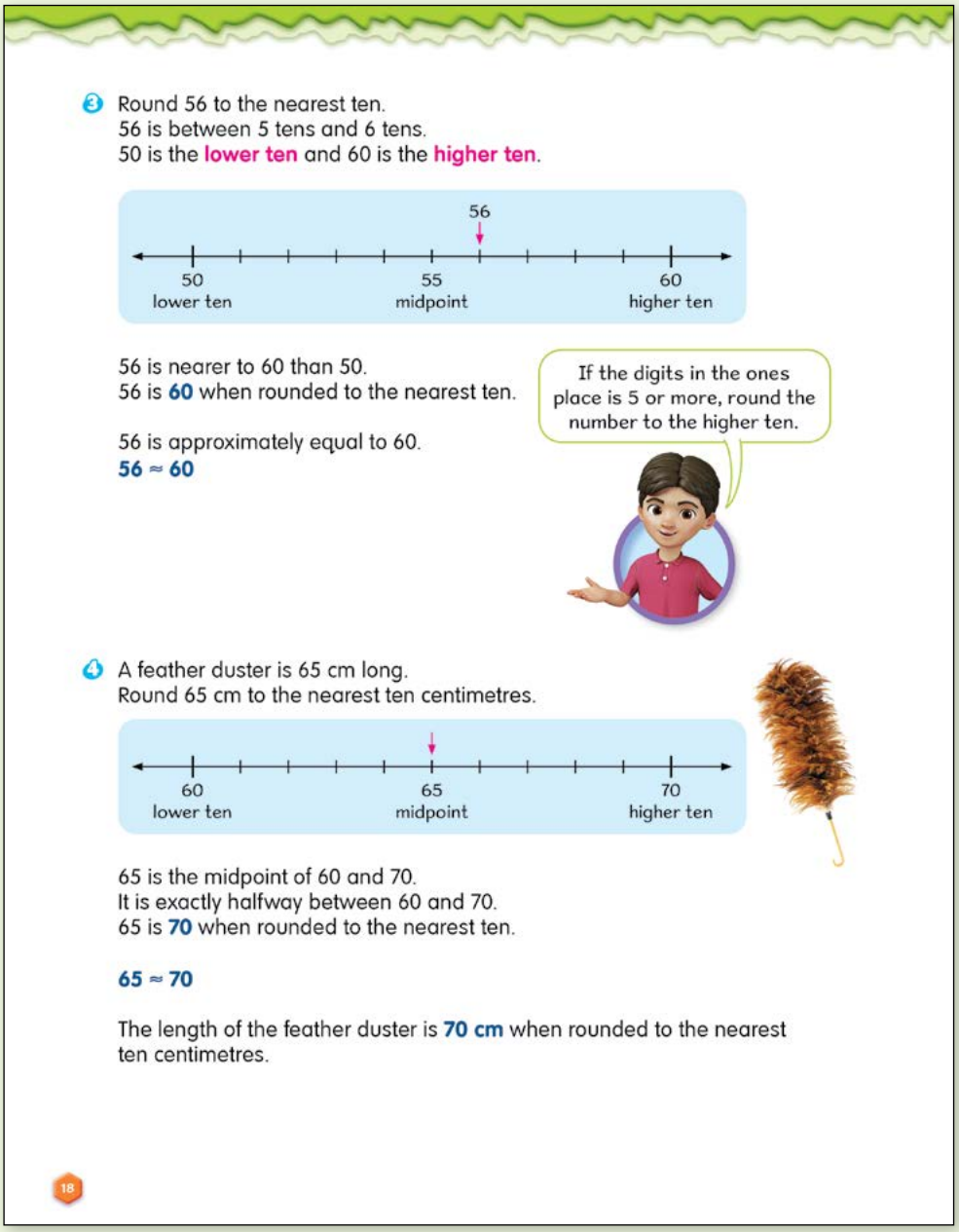
- Draw a number line with markings labelled 40, 45, and 50 on the board.
- Explain that rounding is a way to estimate numbers to the nearest ten, and that you want to round 44 to the nearest 10 using the number line as a reference.
- Ask students to identify the two tens that 44 lies between, recognising 40 as the lower ten and 50 as the higher ten.
- Draw attention to the midpoint (45) on the number line.
- Ask students which ten is 44 nearer to.
- Affirm their response that 44 is nearer to the lower ten, 40. As such, we say that 44 rounded to the nearest ten is 40.
- Write "44 ≈ 40", and highlight the use of the approximation symbol (≈) to show estimation and teach them that the symbol means "approximately equal to".

3

- Carry out the teaching instruction in a similar manner to 2, this time for numbers that round to the higher ten.

4

- Introduce the real-life context (length of a feather duster).
- Ask students to identify the two tens that 65 lies between (60 and 70).
- Draw attention to 65 as the midpoint between 60 and 70.
- Explain that being exactly halfway is rounded up, that is, 65 rounds up to 70.
- State the rounded measurement clearly: 70 cm to the nearest ten centimetres.
- Refer students back to 2 and 3 and ask what 45 and 55 rounded to the nearest ten are.
- Acknowledge that students may notice 65 is equally distant from both tens. Explain that rounding up at the midpoint is a standard mathematical convention.



3 Round 56 to the nearest ten.
56 is between 5 tens and 6 tens.
50 is the **lower ten** and 60 is the **higher ten**.

56 is nearer to 60 than 50.
56 is **60** when rounded to the nearest ten.

56 is approximately equal to 60.
56 ≈ 60

If the digits in the ones place is 5 or more, round the number to the higher ten.

4 A feather duster is 65 cm long.
Round 65 cm to the nearest ten centimetres.

65 is the midpoint of 60 and 70.
It is exactly halfway between 60 and 70.
65 is **70** when rounded to the nearest ten.

65 ≈ 70

The length of the feather duster is **70 cm** when rounded to the nearest ten centimetres.

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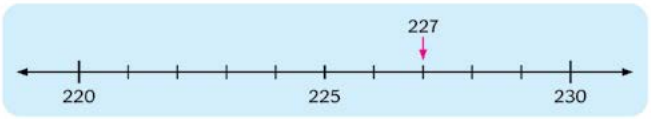
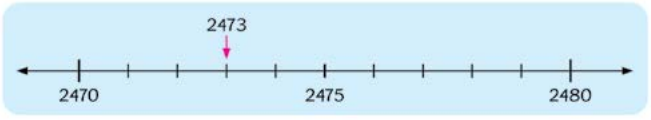
5 Round 227 to the nearest ten.



227 is nearer to 230 than 220.
227 is **230** when rounded to the nearest ten.

227 ≈ 230

6 Round 2473 to the nearest ten.



2473 is nearer to 2470 than 2480.
2473 is **2470** when rounded to the nearest ten.

2473 ≈ 2470

7 Numbers involving units of measurement can be rounded.

(a) The length of a stick is 97 cm.
Round 97 cm to the nearest ten centimetres.

97 cm rounded to the nearest ten centimetres is **100 cm**.

(b) The mass of a cellphone is 246 g.
Round 246 g to the nearest ten grams.

246 g rounded to the nearest ten grams is **250 g**.

(c) Hassan cycled a distance of 3915 m.
Round 3915 m to the nearest ten metres.

3915 m rounded to the nearest ten metres is **3920 m**.

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5

- Direct students' attention to the number 227 and where it is on the number line.
- Guide students to identify the two tens that 227 lies between (220 and 230).
- Label 220 as the lower ten and 230 as the higher ten.
- Draw attention to the midpoint (225) on the number line.
- Ask students whether 227 is before or after the midpoint.
- Guide students to conclude that 227 is after the midpoint, and is nearer to 230 than to 220.
- State and read the rounded result together: "227 rounds to 230".
- Reinforce the use of the approximation symbol (≈).
- Emphasise that to round a number to the nearest ten, it still depends on what the digit in the ones place is even when the number has more than two digits.

6

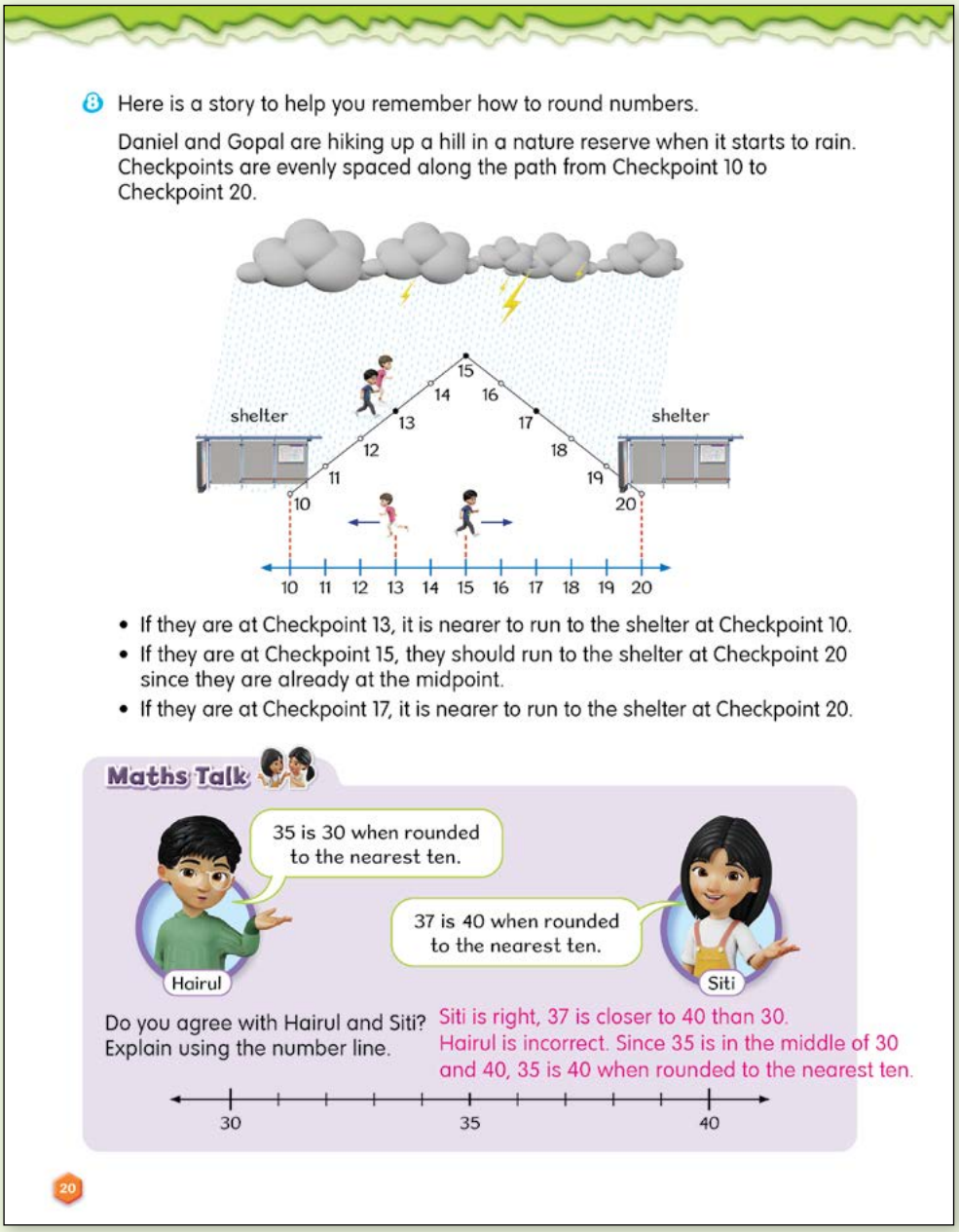
- Carry out the teaching instruction in a similar manner to **5**, this time for 4-digit numbers.

7

- Go through the context with the students.
- Ask how the given measurements are rounded to the nearest ten units.
- Ask them to apply the rule to justify the final statements in each item.
  - Ask "What does the ones digit tell us about rounding in this case?"
- Conclude by emphasising that rounding provides an approximate value, and is especially useful for measurements.
- Reinforce that rounding to the nearest ten depends on which ten the number is closer to, and is also determined by whether the ones digit is 5 or more.

8

- Say that we can use a story to help us understand round numbers easily.
- Read the story aloud and ask students to describe what is happening in the picture.
- Draw students' attention to the checkpoints numbered from 10 to 20 along the path.
- Explain that the checkpoints are evenly spaced, similar to numbers on a number line.
- Highlight the shelters at Checkpoint 10 and Checkpoint 20.
- Explain that Daniel and Gopal will run to the nearest shelter when it rains, just as a number rounds to the nearest ten.
- Ask students to observe where the hikers are standing in each example.
- Guide students to reason which shelter is closer based on distance.
- Ask questions like:
  - "Why does someone at Checkpoint 13 run to Checkpoint 10?"
  - "Why does someone at Checkpoint 15 run to Checkpoint 20?"
- Go through the 3 statements to justify why the boys run to Checkpoint 10 or Checkpoint 20, linking each decision to rounding down or rounding up.
- Conclude with the idea that rounding is about choosing the nearest ten, similar to choosing the nearest shelter.



Maths Talk

- Direct students' attention to what Hairul and Siti each say about rounding.
- Ask students to read both statements aloud.
- Invite students to decide whether they agree or disagree with each person.
- Emphasise that students must justify their answers using the number line, not just state it.
- Guide students to locate 30, 35, and 40 on the number line.
- Highlight that 35 is exactly halfway between 30 and 40.
- Discuss why numbers at the midpoint are rounded up to the higher ten.
- Address the misconception shown by Hairul's statement.
- Encourage respectful discussion and comparison of different explanations.

AfL Are students able to:

- Correctly locate 35 on the number line?
- Explain why 35 rounds to 40 using distance or position on the number line?
- Identify which explanation is incorrect and explain why?

Suggested Action(s)

For students who need additional support:

- Ask them to physically point to 35 on the number line.
- Use guiding prompts such as:
  - "Is 35 closer to 30 or 40, or a similar distance from both?"
  - "What is the rule when a number is exactly halfway?"
- Adapt the story context by replacing the checkpoints with 30 and 40, and ask whether someone at 35 should run to 30 or 40.

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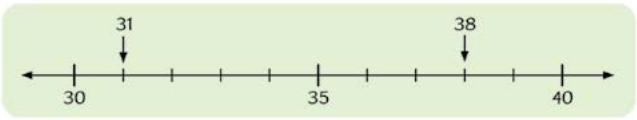
Let's Practise

1 Round each number to the nearest ten.



(a) 31 is nearer to [30] than to [40].

31 is [30] when rounded to the nearest ten.

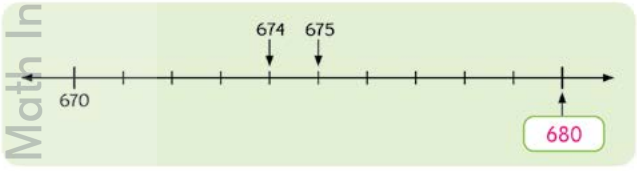
31 ≈ [30]

(b) 38 is nearer to [40] than to [30].

38 is [40] when rounded to the nearest ten.

38 ≈ [40]

2 Round each number to the nearest ten.



(a) 674 is nearer to [670] than to [680].

674 is [670] when rounded to the nearest ten.

674 ≈ [670]

(b) 675 is the midpoint of [670] and [680].

675 is [680] when rounded to the nearest ten.

675 ≈ [680]

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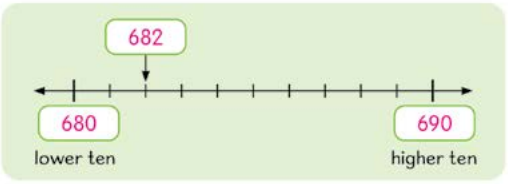
Let's Practise

- Invite students to complete the exercises independently.
- Provide guidance when needed.
- Discuss the answers with them.

3 The volume of juice in a jug is 682 ml.
Round 682 ml to the nearest 10 ml.
Use the number line to help you.



682 is nearer to 680 than to 690.

682 ml ≈ 680 ml

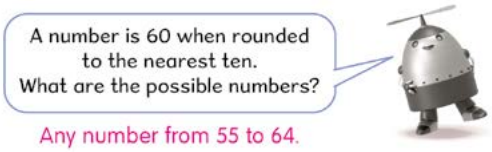
4 Round each number to the nearest ten.

(a) 57 ≈ 60

(b) 183 ≈ 180

(c) 7189 ≈ 7190

(d) 97 132 ≈ 97 130



Any number from 55 to 64.

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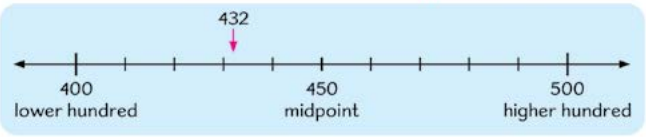
Rounding Numbers to the Nearest Hundred

Let's Learn

1 Rounding numbers to the **nearest hundred** is a way to estimate numbers to the nearest hundred.

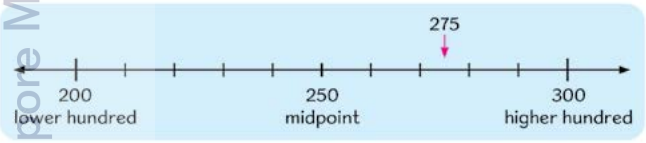
Round 432 to the nearest hundred.
432 is between 4 hundreds and 5 hundreds.
400 is the **lower hundred** and 500 is the **higher hundred.**



432 is nearer to 400 than 500.
432 is **400** when rounded to the nearest hundred.

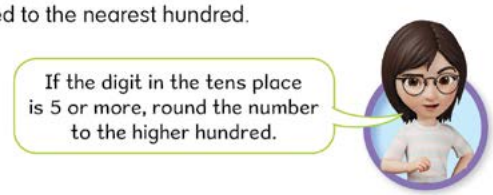
432 ≈ 400

2 Round 275 to the nearest hundred.



275 is nearer to 300 than 200.
275 is **300** when rounded to the nearest hundred.

275 ≈ 300



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Let's Learn

1

- Carry out the teaching instruction in a similar manner to 1 from the previous section.
- Draw attention to 400 as the lower hundred and 500 as the higher hundred with 450 as the midpoint.
- Ask students which hundred 432 is closer to.
- Affirm that 432 rounds to 400.
- Guide students to observe that 432 is closer to 400 than to 500 or that 432 is less than the midpoint.
- Write "432 ≈ 400" and have students read it.
- Ask them what other numbers round to the lower hundred.
- Have them notice that if the digit in the tens place is less than 5, these numbers round to the lower hundred, otherwise they round to the higher hundred.
- In other words, rounding to the nearest hundred is also based on whether the number is less than, equal to or greater than the midpoint.
- Refer students to the content on the page and briefly go through 1 to reinforce what has been demonstrated.
- Emphasise that the rule is as described in the speech bubble.

2

- Carry out the teaching instruction in a similar manner to 2 from the previous section.

3

- Carry out the teaching instruction in a similar manner to **3** from the previous section.

4

- Although bigger numbers are used in this example, carry out the teaching instruction in a similar manner to **2**.

Hands-on Activity

Materials: Numeral cards

- Distribute a set of numeral cards (1–9) to each pair or small group.
- Go through the instructions with the students.
- Ask students to explain their rounding decisions.
- Go through the example to ensure students understand the task requirements.
- Encourage students to compare answers within the group and discuss any differences.
- Invite selected students to share their numbers and explanations with the class.
- Some questions to ask while facilitating the activity:
  - "What number did you form using the cards?"
  - "Between which two tens (or hundreds) does your number lie?"
  - "Which ten is your number closer to? How can you tell from the number line?"
  - "Which digit helps you decide how to round to the nearest hundred?"
  - "Did anyone in your group get a different answer? Why or why not?"

AfL Are students able to:

- Form a 3-digit number using the cards?
- Place the number accurately on the number line?
- Identify the correct lower and upper tens or hundreds?
- Round the number correctly and explain their rounding decision?

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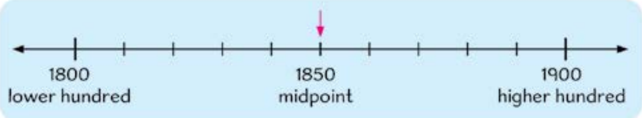
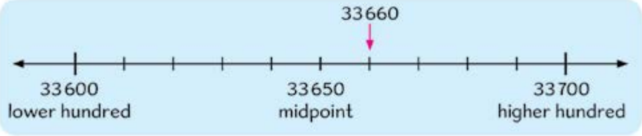
3 Round 1850 to the nearest hundred.



1850 is the midpoint of 1800 and 1900.
It is exactly halfway between 1800 and 1900.
1850 is **1900** when rounded to the nearest hundred.

1850 ≈ 1900

4 Round 33 660 to the nearest hundred.



33 660 is nearer to 33 700 than 33 600.
33 660 is **33 700** when rounded to the nearest hundred.

33 660 ≈ 33 700

Hands-on Activity

You will receive a set of numeral cards, numbered from 1 to 9.
Take turns picking three cards to form a 3-digit number.
Mark the number on a number line.
Explain how to round it to the nearest **(a)** ten and **(b)** hundred.

(a) To round to the nearest ten, we look at the ones digit. Since the ones digit is 6, we round 256 up to 260.
(b) To round to the nearest hundred, we look at the tens digit. Since the tens digit is 5, we round 256 up to 300.

Example

Round 256 to the nearest hundred.

24

- use appropriate terms such as nearest, midpoint, lower and higher?

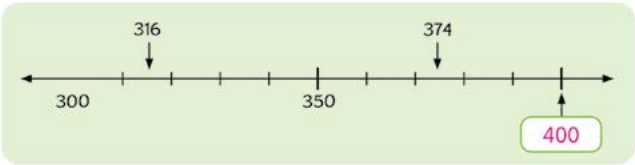
Suggested Action(s)

For students who need additional support:

- Model one complete example step by step, asking guiding questions at each step.
- Use guiding prompts such as:
  - "What digit should you look at when rounding?"
  - "Is your number closer to the lower or higher ten (or hundred)?"

Let's Practise

1 Round each number to the nearest hundred.
Use the number line to help you.



(a) 316 ≈ 300

(b) 350 ≈ 400

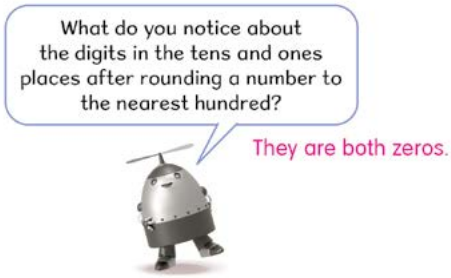
(c) 374 ≈ 400

2 Round each number to the nearest hundred.

(a) 760 ≈ 800

(b) 2671 ≈ 2700

(c) 52 748 ≈ 52 700



Go to PB 4A Practice 8

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Let's Practise

- Invite students to complete the exercises independently.
- Provide guidance when needed.
- Discuss the answers with them.

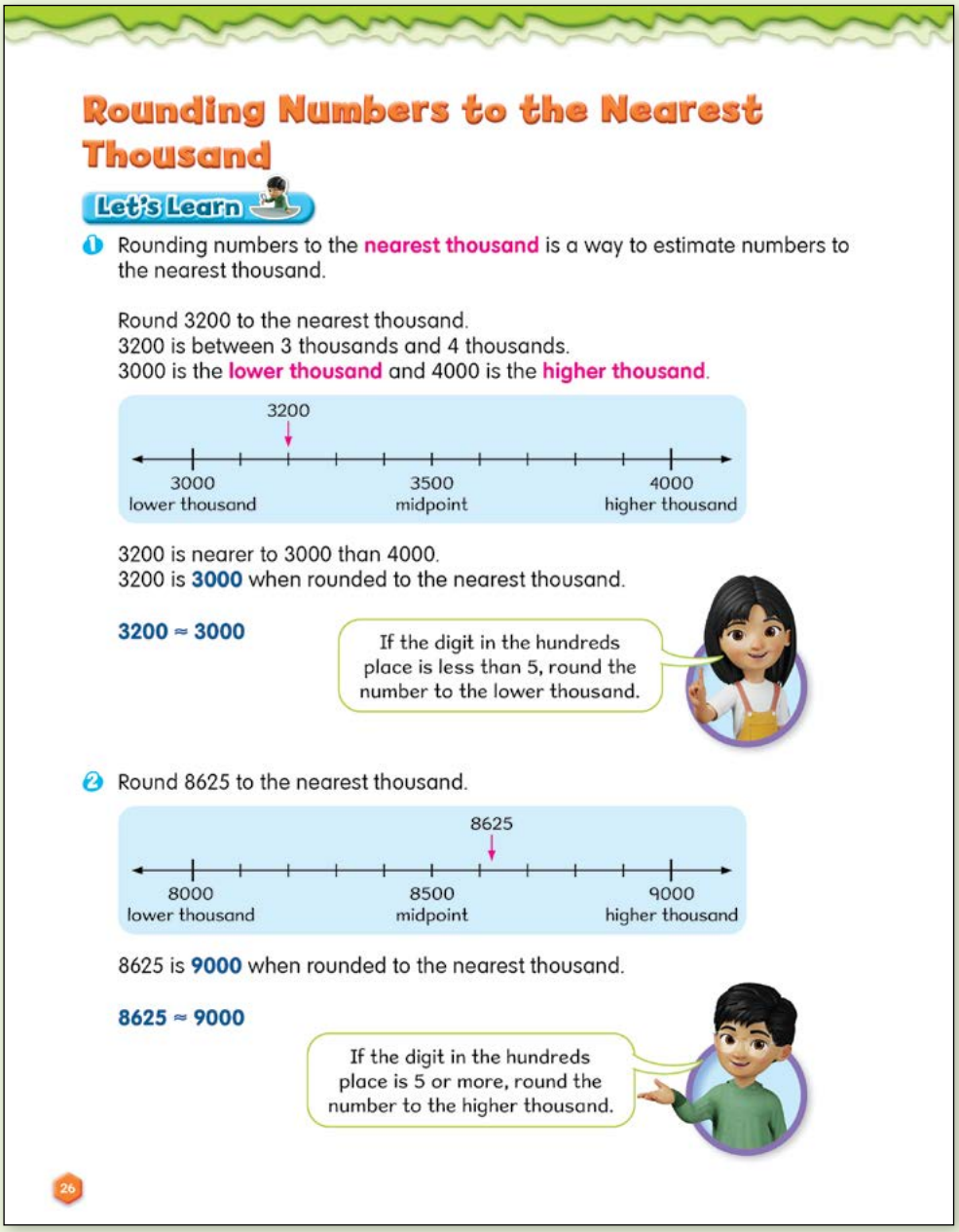
Let's Learn

1

- Carry out the teaching instruction in a similar manner to 1 from the previous section.
- Draw attention to 3000 as the lower thousand and 4000 as the higher thousand with 3500 as the midpoint.
- Ask students which thousand 3200 is closer to.
- Affirm that 3200 rounds to 3000.
- Guide students to observe that 3200 is closer to 3000 than to 4000, or that 3200 is less than the midpoint.
- Write "3200 ≈ 3000" and have students read it.
- Ask them what other numbers round to the lower thousand? Have them notice that if the digit in the hundreds place is less than 5, these numbers round to the lower thousand, otherwise they round to the higher thousand. In other words, rounding to the nearest thousand is also based on whether the number is less than, equal to or greater than the midpoint.
- Refer students to the content in the TB page and briefly go through 1 to reinforce what has been demonstrated.
- Emphasise that the rule is as described in the speech bubble.

2

- Carry out the teaching instruction in a similar manner to 2 from the previous section.



Rounding Numbers to the Nearest Thousand

Let's Learn

1 Rounding numbers to the **nearest thousand** is a way to estimate numbers to the nearest thousand.

Round 3200 to the nearest thousand.
3200 is between 3 thousands and 4 thousands.
3000 is the **lower thousand** and 4000 is the **higher thousand**.

3200 is nearer to 3000 than 4000.
3200 is **3000** when rounded to the nearest thousand.

3200 ≈ 3000

If the digit in the hundreds place is less than 5, round the number to the lower thousand.

2 Round 8625 to the nearest thousand.

8625 is **9000** when rounded to the nearest thousand.

8625 ≈ 9000

If the digit in the hundreds place is 5 or more, round the number to the higher thousand.

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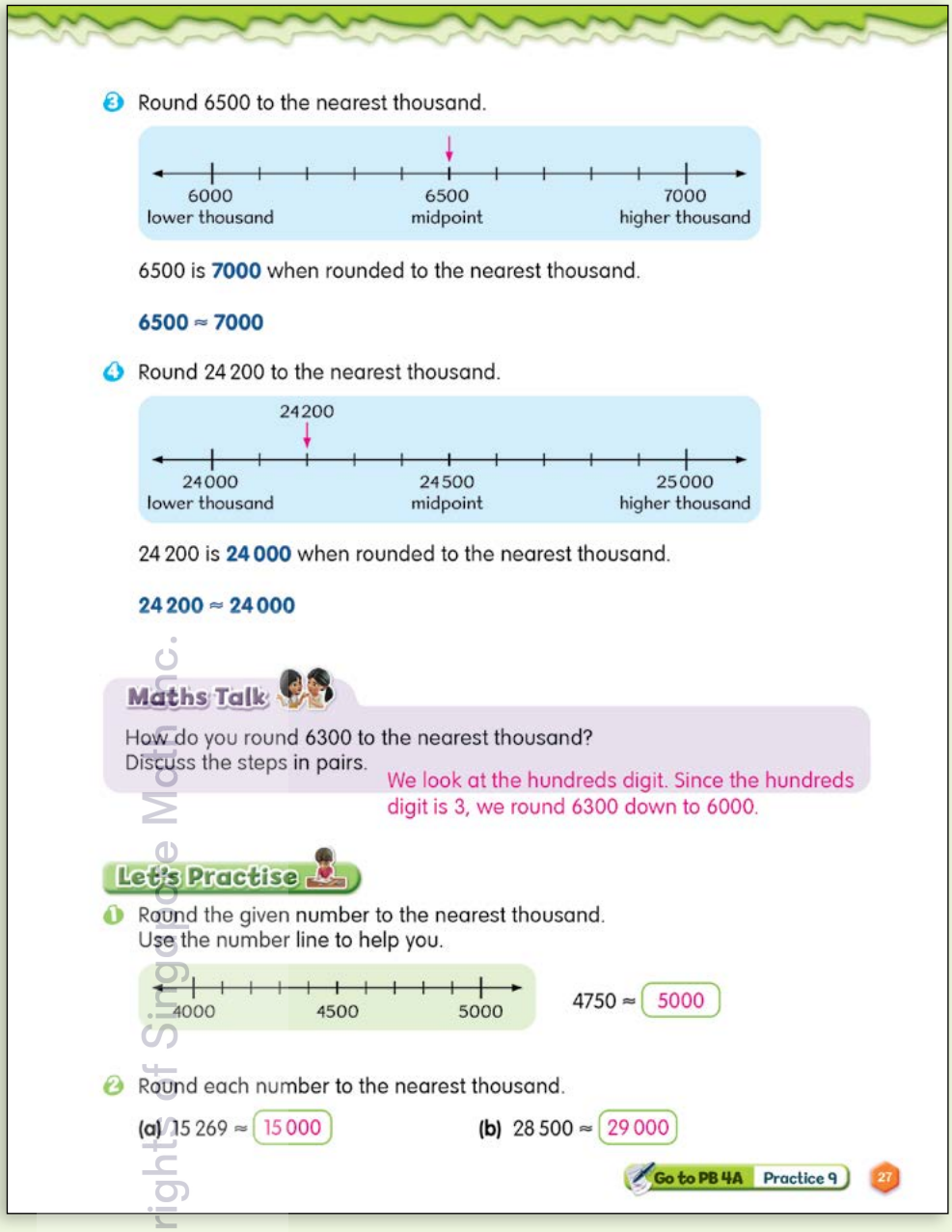

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Let's Practise

- Invite students to complete the exercises independently.
- Provide guidance when needed.
- Discuss the answers with them.

3

- Carry out the teaching instruction in a similar manner to 3 from the previous section.

4

- Although bigger numbers are used in this example, carry out the teaching instruction in a similar manner to 1.

Maths Talk

- Ask students to discuss the steps they would take to round 6300 to the nearest thousand.
- Invite pairs to share their reasoning with the class.
- Encourage respectful discussion when comparing different explanations.

AfL Are students able to:

- Identify the correct lower thousand and upper thousand (6000 and 7000)?
- Identify the hundreds digit used to make rounding decision?
- Round 6300 to 6000?
- Use correct mathematical language (e.g. nearest thousand, hundreds digit and round down)?

Suggested Action(s)

For students who need additional support:

- Ask them to place 6300 on a number line marked in thousands.
- Ask them to identify the midpoint (6500).
- Use prompts such as:
  - "Which digit do we check when rounding to the nearest thousand?"
  - "Is 6300 before or after the midpoint?"
- Encourage students to say the rounding rule aloud in their own words.

Let's Learn 2

1

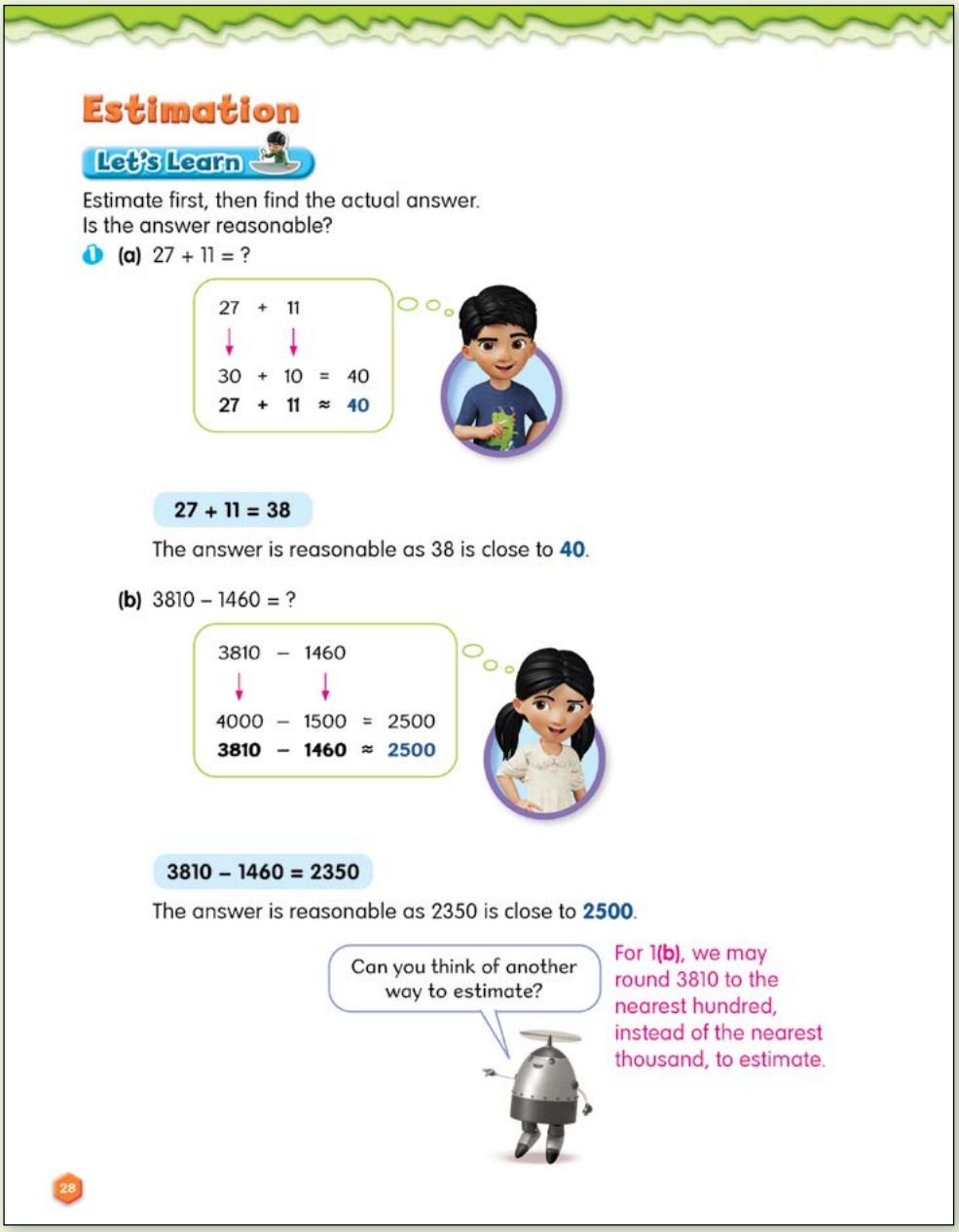
- Explain that estimation helps us check whether an answer makes sense before or after before or after carrying out a calculation.

(a)

- Write "27 + 11" on the board and show how the numbers are adjusted in the illustration.
- Highlight that 27 is rounded to 30 and 11 is rounded to 10.
- Ask them why was 27 rounded to 30 and not 20, and how do we decide whether an answer is reasonable.
- Guide students to verbalise the estimation step:
  - "30 + 10 = 40, so the estimated answer is about 40."
  - "Reinforce the use of the symbol ≈ to mean 'approximately equal to'."
- Have students compute the actual answer, 27 + 11 = 38.
  - Compare the actual answer with the estimate.
- Discuss why the answer is considered reasonable, linking it to the idea that 38 is close to 40.
- Emphasise that the goal of estimation is closeness rather than exactness.
- Refer students to their same item in the textbook and briefly go through it as reinforcement.

(b)

- Carry out the teaching in a similar manner to **(a)**.
- Explain that numbers may rounded to the nearest thousand or hundred to make calculations easier.
- Draw attention to the speech bubble at the bottom of the page.
  - Explain that there can be more than one valid way to estimate, depending on how the numbers are rounded.
  - Encourage flexible thinking rather than a single "correct" method.



Estimation

Let's Learn

Estimate first, then find the actual answer.
Is the answer reasonable?

1 **(a)** 27 + 11 = ?

27 + 11
↓ ↓
30 + 10 = 40
27 + 11 ≈ 40

27 + 11 = 38

The answer is reasonable as 38 is close to **40**.

(b) 3810 – 1460 = ?

3810 – 1460
↓ ↓
4000 – 1500 = 2500
3810 – 1460 ≈ 2500

3810 – 1460 = 2350

The answer is reasonable as 2350 is close to **2500**.

Can you think of another way to estimate?

For 1**(b)**, we may round 3810 to the nearest hundred, instead of the nearest thousand, to estimate.

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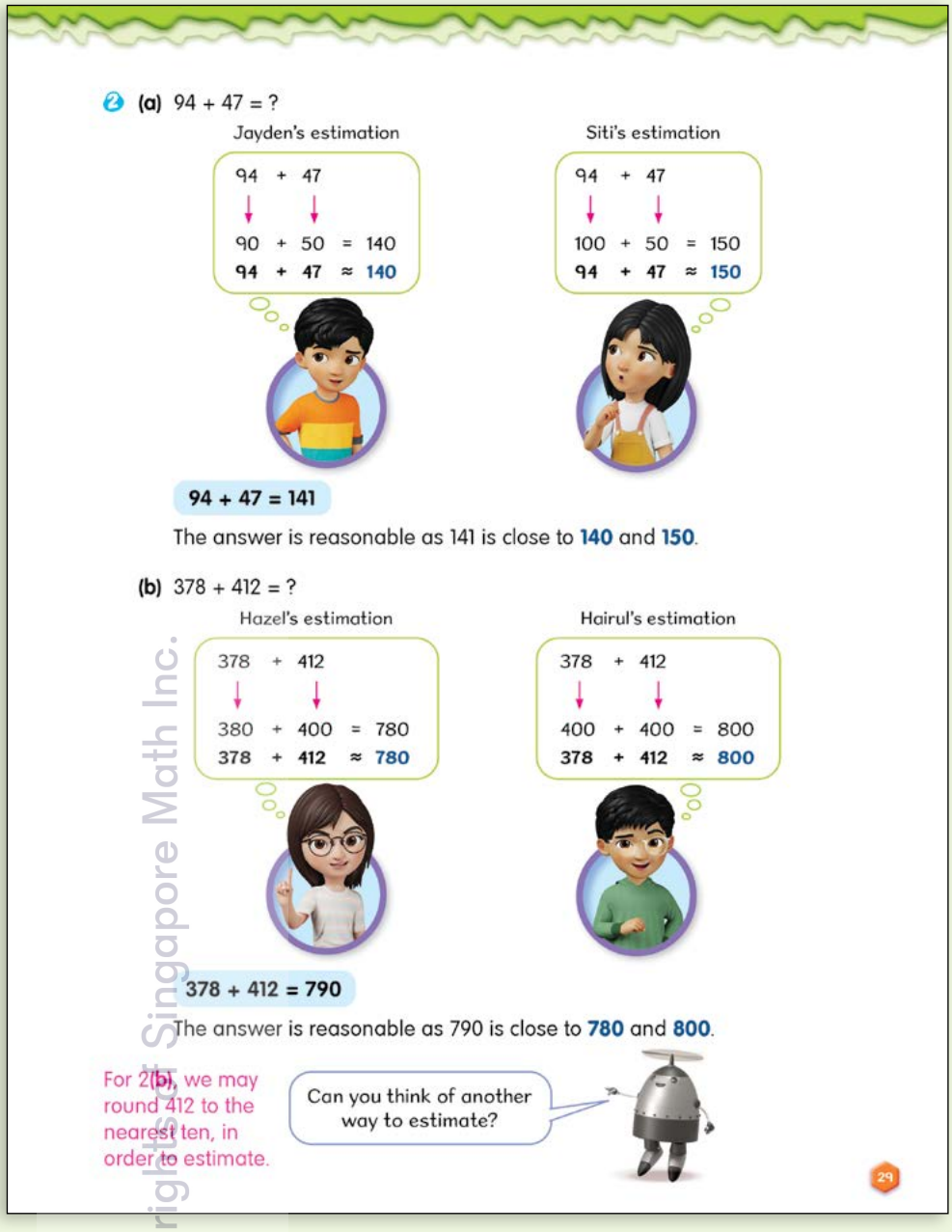

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(a)

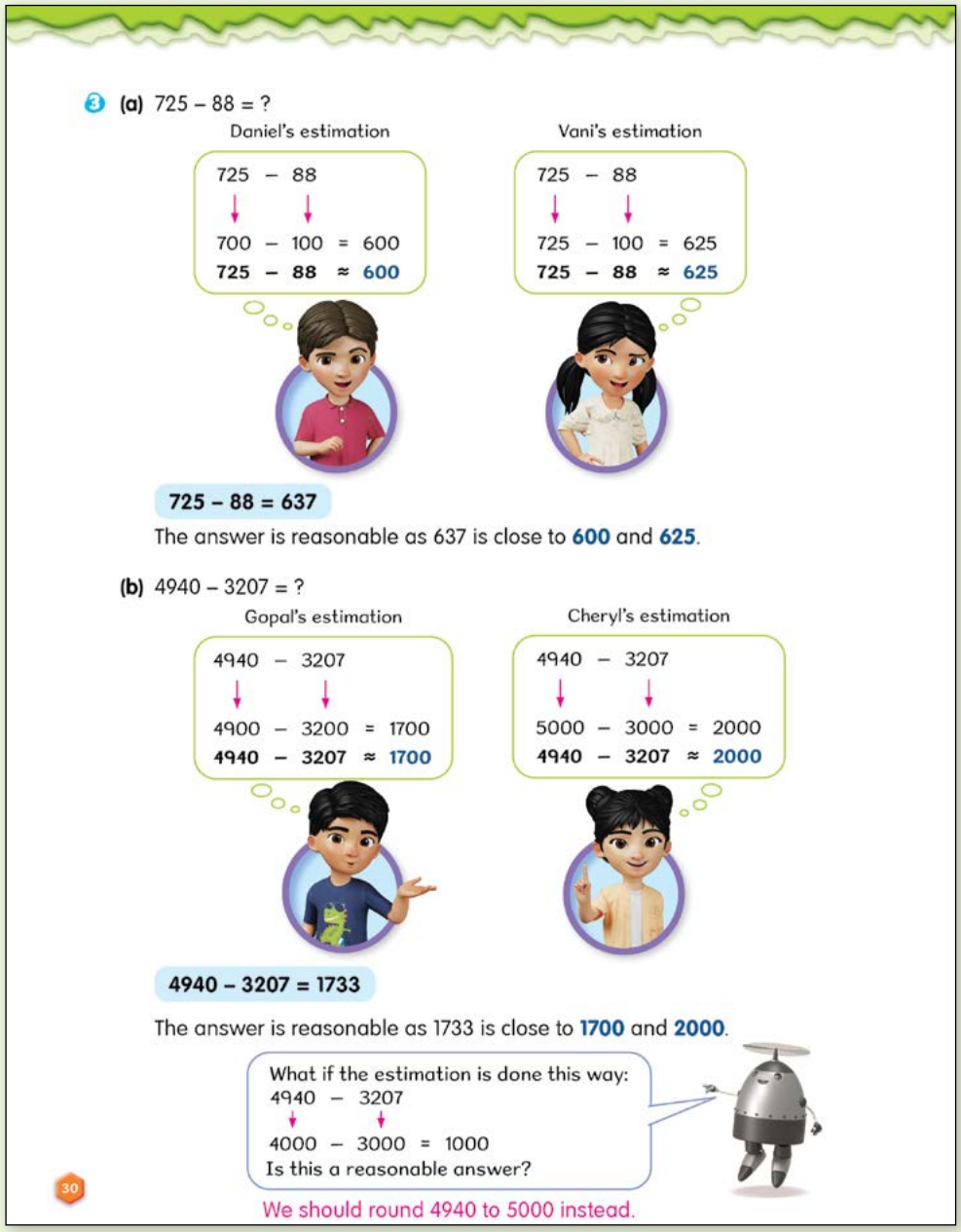
- Refer students to the context in the textbook.
- Have students note that different estimation strategies are used by Jayden and Siti for "94 + 47".
- Ask why Jayden and Siti obtain different estimates for the same calculation.
- Affirm their responses and draw attention to Jayden's estimation where 94 is rounded down to 90, and 47 is rounded up to 50.
- Lead students to state the estimate: 90 + 50 = 140
- Then, focus on Siti's estimation where 94 is rounded up to 100, and 47 is rounded up to 50.
- Have students state the estimate: 100 + 50 = 150
- Guide students to calculate the actual sum, 94 + 47 = 141.
- Compare the actual answer with both estimates.
- Ask whether one estimate is more accurate than the other, and discuss their responses.
- Reinforce the idea of reasonableness by pointing out that
  - 141 is close to 140, and
  - 141 is also close to 150
- Emphasise the key message conveyed by the illustration: Different estimation methods can all be valid, as long as they help check whether the answer makes sense.

(b)

- Carry out the teaching in a similar manner to **(a)**.
- Draw attention to the speech bubble at the bottom of the page and ask students to suggest possible ways to estimate.
- Discuss their responses and conclude that there can be more than one valid way to estimate, depending on how numbers are rounded.
- Encourage flexible thinking rather than a single "correct" method.

3 (a) and **(b)**

- Carry out the teaching in a similar manner to **2 (a)** and **2 (b)**.
- Draw attention to the speech bubble at the bottom of the page and ask students to reflect on the estimation shown.
- Ask if rounding 4940 to 4000 makes sense and how rounding affects the accuracy of an estimate.
- Discuss their responses and explain that not all rounding choices lead to a good estimate. In this case, rounding 4940 down to 4000 changes the value significantly.
- Ask students to consider a better rounding choice: 4940 should be rounded to 5000, not 4000.
- Reinforce the key idea that estimation requires sensible rounding choices, not just any rounding.



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Mathematics AROUND US

The photographs below show some stadiums and their seating capacities. How do the seating capacities of these stadiums compare to the seating capacity of the National Stadium in Singapore?

Can you find another stadium that has a larger seating capacity than these stadiums?

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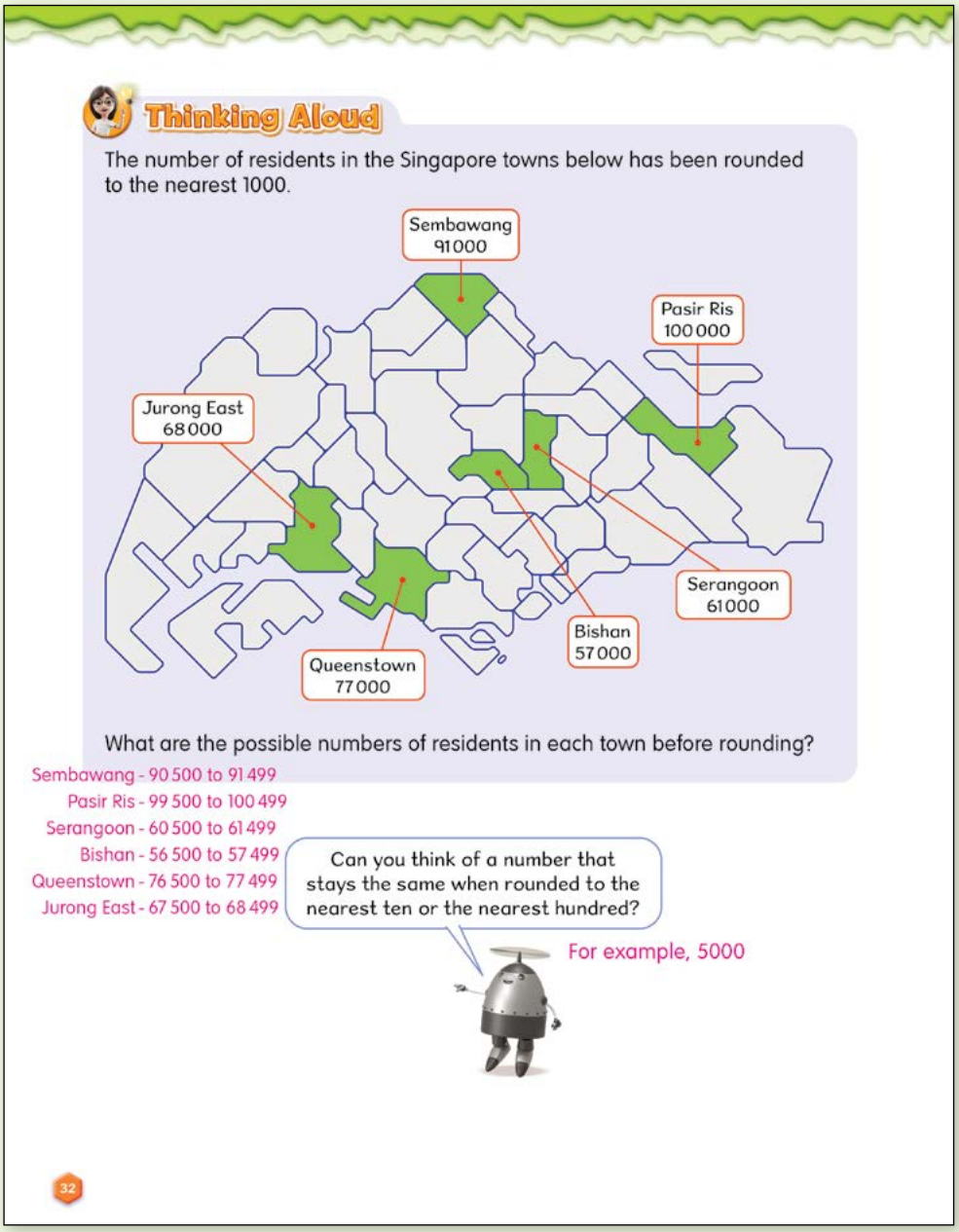
Mathematics AROUND US

- Go through the context with the students and say that we want to see how mathematics helps us understand and compare real-world information, such as sizes, capacities, and quantities we encounter in daily life.
- Invite students to observe the photographs of the stadiums.
- Direct students to read the seating capacities shown for each stadium and emphasise that these numbers represent the maximum number of people the stadium can accommodate.
- Highlight the National Stadium in Singapore as a reference point. Explain that comparing other stadiums to a familiar one helps students make sense of large numbers.
- Guide students to compare the seating capacities.
- Ask students why some countries might need larger stadiums, for example, due to population size, popularity of sports, or international events.
- Conclude by encouraging them to apply their comparison skills independently by researching other stadiums with larger seating capacities and sharing with the class.

Thinking Aloud

- Go through the context with the students.
- Ask them to look at the populations of the given towns and discuss what range of numbers could round to each population value.
- Invite them to explain how they determined the lower and upper bounds and discuss their responses.
- Ask questions like "Could another number also round to this value?" as students provide some possible numbers.
- Scaffold the task by providing sentence frames such as:
  - "The smallest number that rounds to ___ is ___."
  - "The largest number that rounds to ___ is ___."
- Refer students to the stand-alone prompt at the bottom of the page.
- Use the prompt about rounding to the nearest ten or hundred to extend students' thinking.
- Encourage students to consider why some numbers remain unchanged under different rounding units.
- Conclude by consolidating findings and explicitly naming the mathematical idea discovered: When a number is rounded, the original value could be any number within a specific range, expressed as an interval (e.g. "from ___ to ___").



AfL Are students able to:

- Ask why the answer must be a range and not a single number?
- Correctly identify the lower and upper bounds when rounding to the nearest thousand?

Suggested Action(s)

For students who need additional support:

- Revisit the teaching of rounding to the nearest thousand using a number line, and encourage them to say the rounding rule in their own words.
- Use one of the given town populations and guide them to check the range by testing numbers just inside and just outside the boundary when rounding.
- Then have them try the same process for the remaining population values.

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What Have I Learnt?

1 Place value.

A 5-digit number is made up of digits in the ten thousands, thousands, hundreds, tens and ones place.

74 958 is written as seventy-four thousand, nine hundred and fifty-eight.

74 958 = 70 000 + 4000 + 900 + 50 + 8

= (7 × 10 000) + (4 × 1000) + (9 × 100) + (5 × 10) + (8 × 1)

The digit 7 is in the ten thousands place and it stands for 70 000.
The digit 4 is in the thousands place and it stands for 4000.
The digit 9 is in the hundreds place and it stands for 900.
The digit 5 is in the tens place and it stands for 50.
The digit 8 is in the ones place and it stands for 8.

2 Comparing and ordering numbers.

Compare and order 40 678, 32 567 and 40 672.

- The numbers in increasing order are:
  32 567 , 40 672 , 40 678
- The numbers in decreasing order are:
  40 678 , 40 672 , 32 567

3 Number patterns.

Here are some examples of number patterns:

- 77 654, 78 654, 79 654, 80 654, 81 654, 82 654
  (+ 1000, + 1000)
- 12 987, 12 887, 12 787, 12 687, 12 587, 12 487
  (− 100, − 100)

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What Have I Learnt?

- Encourage students to read each summary section slowly and connect it to what they have learned earlier in the chapter, such as estimating, comparing numbers, and rounding.
- Invite students to reflect on which summary point helped them the most and which point they are still uncertain about and may need to revisit.
- Conclude by reinforcing that the summary serves as a tool students can revisit to check their understanding and support problem solving in future lessons.

4 Rounding numbers to the nearest 10, 100 or 1000.

- **Round** the following numbers to the **nearest 10**.
  1354 ≈ 1350
  5137 ≈ 5140

  If the digit in the ones place is 4 or less, round the number to the **lower ten**.

  If the digit in the ones place is 5 or more, round the number to the **higher ten**.

- **Round** the following numbers to the **nearest 100**.
  4539 ≈ 4500
  7153 ≈ 7200

  If the digit in the tens place is 4 or less, round the number to the **lower hundred**.

  If the digit in the tens place is 5 or more, round the number to the **higher hundred**.

- **Round** the following numbers to the **nearest 1000**.
  46 192 ≈ 46 000
  25 829 ≈ 26 000

  If the digit in the hundreds place is 4 or less, round the number to the **lower thousand**.

  If the digit in the hundreds place is 5 or more, round the number to the **higher thousand**.

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