1 Numbers to 10 Million

Main Instructional Section(s)	Learning Objective(s)
Numbers to 1 Million	Read and write numbers in numerals and in words.
Numbers to 10 Million	

Maths Vocabulary

Place values (ones, tens, hundreds, thousands, ten thousands, hundred thousands, millions)

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.

Chapter Opener

- Invite students to look carefully at the Chapter Opener.
- Ask students to describe what they see happening on the screen.
- Refer students to the numbers of views shown for the different videos and ask them to read the numbers aloud.
- Ask:
  - Which video has the highest number of views?
  - Which has the lowest?
  - How do you know?
- Invite students to explain how they compare large numbers.
- Draw attention to the spacing in the numbers and ask why the digits are grouped that way.
- Ask students what the first digit in 3 964 127 represents.
- Encourage students to share other real-life situations where they have seen large numbers.
- Conclude by explaining that the chapter will focus on reading, writing and comparing numbers up to 10 million, and understanding place value in large numbers.

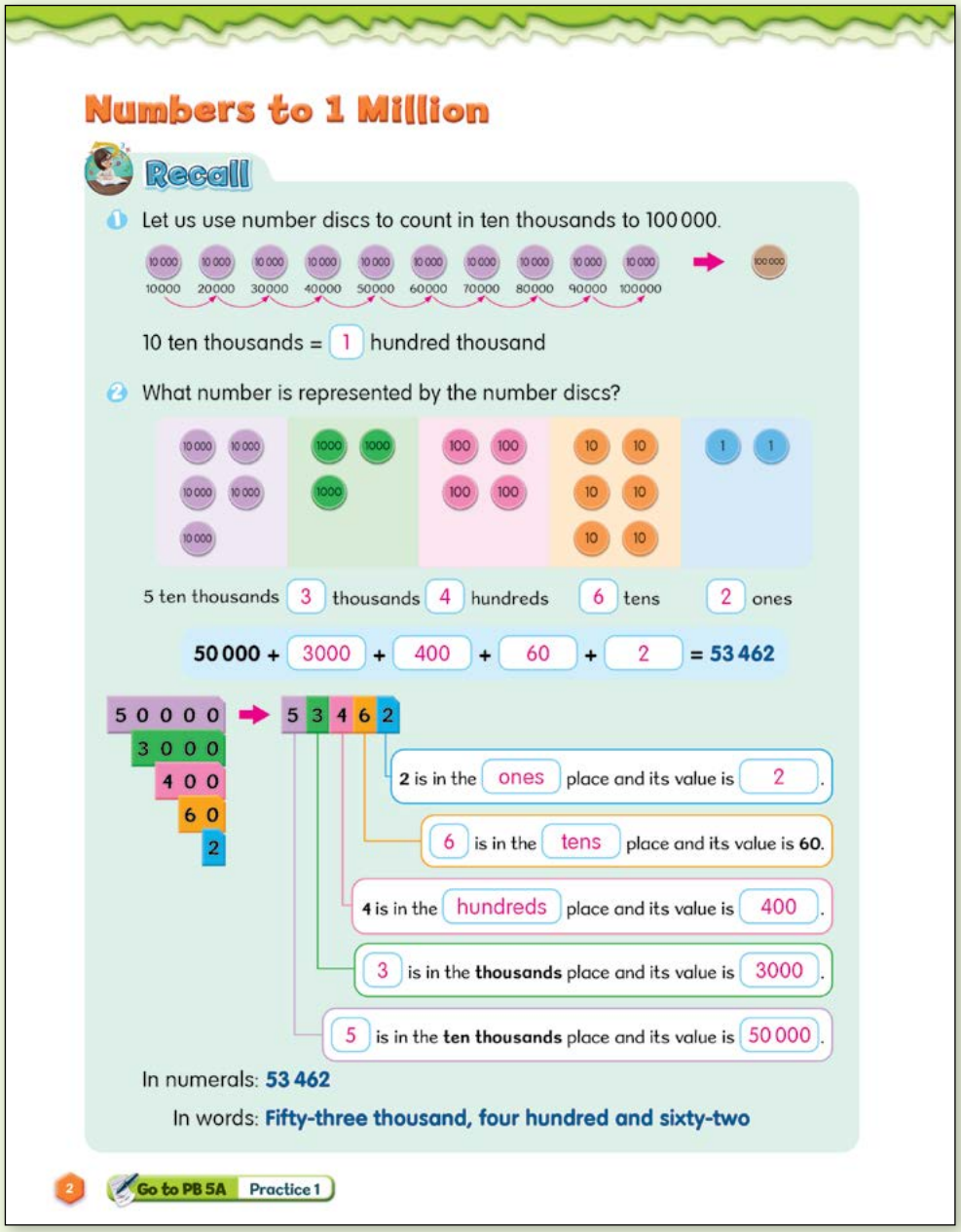
Recall

1

- Remind students that they have previously learnt about place values up to hundred thousands and that this section helps them refresh that knowledge.
- Ask students to observe the number discs and count in ten thousands together, guiding them to complete the statement "10 ten thousands = ___ hundred thousand."

2

- Refer students to study the second set of number discs and identify how many ten thousands, thousands, hundreds, tens and ones are shown.
- Invite students to fill in the boxes relating to the values shown by the number discs and explain how they know each answer.
- Ask students to write the expanded form and then the numeral represented by the discs.
- Call on different students to share their answers and reasoning, affirm correct place-value language such as "5 is in the ten thousands place" and "6 is in the tens place".
- Address any misconceptions immediately, especially confusion between place and value.
- Conclude by reinforcing that understanding place value helps us read, write and build larger numbers confidently.



Numbers to 1 Million

Recall

1 Let us use number discs to count in ten thousands to 100 000.

10 000 → 100 000

10 000 20 000 30 000 40 000 50 000 60 000 70 000 80 000 90 000 100 000

10 ten thousands = 1 hundred thousand

2 What number is represented by the number discs?

5 ten thousands 3 thousands 4 hundreds 6 tens 2 ones

50 000 + 3000 + 400 + 60 + 2 = 53 462

50 000 + 3 000 + 400 + 60 + 2 → 5 3 4 6 2

2 is in the ones place and its value is 2.

6 is in the tens place and its value is 60.

4 is in the hundreds place and its value is 400.

3 is in the **thousands** place and its value is 3000.

5 is in the **ten thousands** place and its value is 50 000.

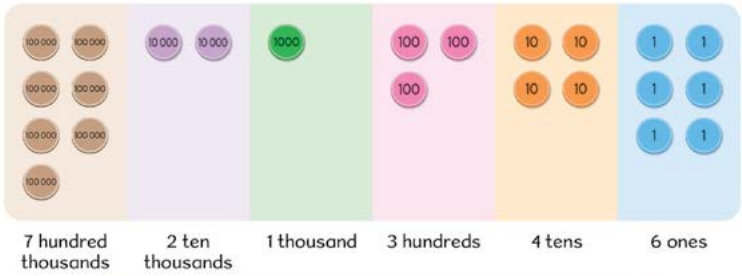
In numerals: **53 462**

In words: **Fifty-three thousand, four hundred and sixty-two**

2 Go to PB 5A Practice 1

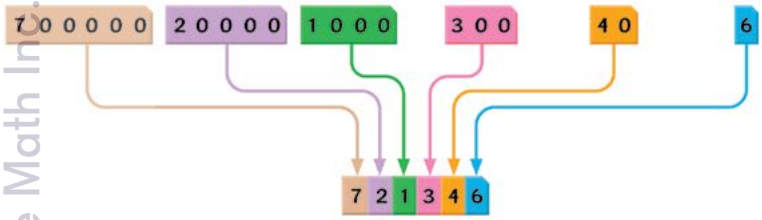
Let's Learn

(a) The video "Joy Band" has 721 346 views.
Let us represent 721 346 using number discs.



721 346 = 700 000 + 20 000 + 1000 + 300 + 40 + 6

(b) Let us use place-value cards to represent the numbers that make up 721 346.



Seven hundred and twenty-one thousand, three hundred and forty-six

Let's Learn

Materials: Number discs, place-value cards

(a)

- Go through the context with students by reading aloud: "The video 'Joy Band' has 721 346 views." Ask students what they notice about the size of this number.
- Use magnetic number discs and group them according to place values to help students interpret 721 346. Ask them to identify how many hundred thousands, ten thousands, thousands, hundreds, tens and ones are needed.
- Ask: What does the 7 represent? What does the 2 represent? Continue through each digit to reinforce place-value meaning.
- Write 721 346 = 700 000 + 20 000 + 1000 + 300 + 40 + 6. Ask students why we break the number into parts this way.
- Emphasise that each digit has a value depending on its place, not just its face value.

(b)

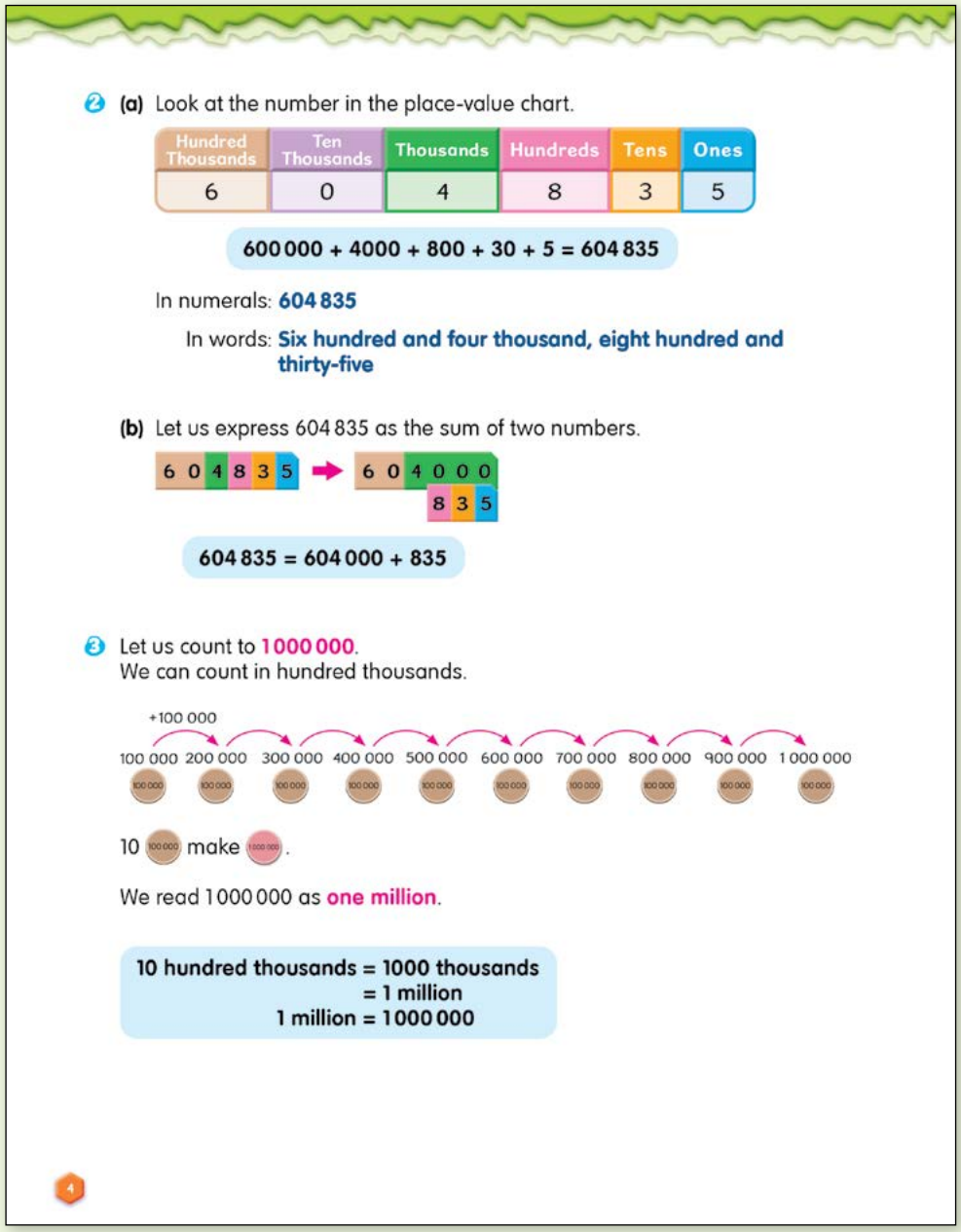
- Use place-value cards and show how each card represents one part of the expanded form. Ask students how the cards combine to form the complete number, and read the number together.
- Ask:
  - If we remove the 20 000 card, what number would remain?
  - If we change the 3 hundreds to 5 hundreds, what would the new number be?
- Affirm accurate use of place-value language such as "7 hundred thousands" and "4 tens". Encourage students who explain clearly by highlighting their reasoning.
- Write the number words and ask students to check if they match how students have read the number.
- Refer students to the textbook page and inform them to review the example as reinforcement of the demonstration.

2 (a)

- Refer students to study the place-value chart carefully and identify the digit in each column.
- Ask:
  - What does the 6 represent?
  - What does the 4 represent? Continue through each digit to reinforce that each digit's value depends on its place.
- Guide students to express the number in expanded form:
  - 600 000 + 4000 + 800 + 30 + 5.
- Ask students to state the number in numerals and then read it aloud in words.
- Discuss why there is a zero in the ten thousands place and what it tells us.

(b)

- Ask students to observe how the number is split into 604 000 and 835.
- Discuss why 604 000 represents the thousands part and 835 represents the remaining hundreds, tens and ones.
- Ask:
  - Why does the breaking up of this number still give the same total?
  - What does this show about place value?
- Encourage students to explain how regrouping by place value helps us break numbers into convenient parts.
- Affirm clear explanations and reinforce that large numbers can be decomposed flexibly using place value.



2 (a) Look at the number in the place-value chart.

Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
6	0	4	8	3	5

600 000 + 4000 + 800 + 30 + 5 = 604 835

In numerals: **604 835**

In words: **Six hundred and four thousand, eight hundred and thirty-five**

(b) Let us express 604 835 as the sum of two numbers.

6 0 4 8 3 5 → 6 0 4 0 0 0 + 8 3 5

604 835 = 604 000 + 835

3 Let us count to **1 000 000**.
We can count in hundred thousands.

+100 000
100 000 200 000 300 000 400 000 500 000 600 000 700 000 800 000 900 000 1 000 000

10 make 1.

We read 1 000 000 as **one million**.

10 hundred thousands = 1000 thousands
= 1 million
1 million = 1 000 000

4

3

- Guide students to count in hundred thousands based on the number discs illustrations.
- Ask:
  - How many hundred thousands make 1 000 000?
  - How do you know?
- Direct attention to the statement "10 hundred thousands = 1 million" and discuss why this is true.
- Ask students to count the number of digits in 1 000 000 and describe what each zero represents.
- Reinforce that 1 million equals 1 000 000 and can also be seen as 1000 thousands.
- Affirm accurate reasoning and conclude by highlighting the relationship between thousands, hundred thousands and millions.

4 We can show 1 million using a place-value chart.

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
1	0	0	0	0	0	0

Let's Practise

1 Express in numerals.

(a) Two hundred and six thousand 206 000

(b) Seven hundred thousand and ninety-nine 700 099

(c) Four hundred and three thousand and ten 403 010

(d) Three hundred and fourteen thousand, nine hundred and sixty-seven 314 967

(e) Eight hundred and twenty-two thousand, five hundred and four 822 504

2 Express in words.

(a) 800 200

(b) 750 040

(c) 645 279

(d) 507 507

(e) 480 084

(a) Eight hundred thousand and two hundred

(b) Seven hundred and fifty thousand and forty

(c) Six hundred and forty-five thousand, two hundred and seventy-nine

(d) Five hundred and seven thousand, five hundred and seven

(e) Four hundred and eighty thousand and eight-four

3 What are the missing numbers?

(a) 491 862 = 491 000 + 862

(b) 549 607 = 549 000 + 607

(c) 345 660 = 345 000 + 660

(d) 823 000 + 943 = 823 943

(e) 681 526 = 681 000 + 526

Go to PB 5A Practice 2

4

- Refer students to the place-value chart and ask them to observe which column has the digit 1.
- Ask:
  - What does the 1 represent in the millions column?
  - Why are all the other digits zero?
- Guide students to conclude that 1 000 000 has one digit in the millions place and zeros in all other places because there are no hundred thousands, ten thousands, thousands, hundreds, tens or ones.
- Ask:
  - How many digits are there in 1 million?
  - Encourage students to count carefully and explain their reasoning.
- Affirm correct responses and reinforce that understanding place value helps us read and write large numbers accurately.
- Conclude by reinforcing that large numbers can be understood clearly when we break them into place-value parts and represent them in different ways: discs, expanded form, place-value charts and cards, and words.

Let's Practise

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

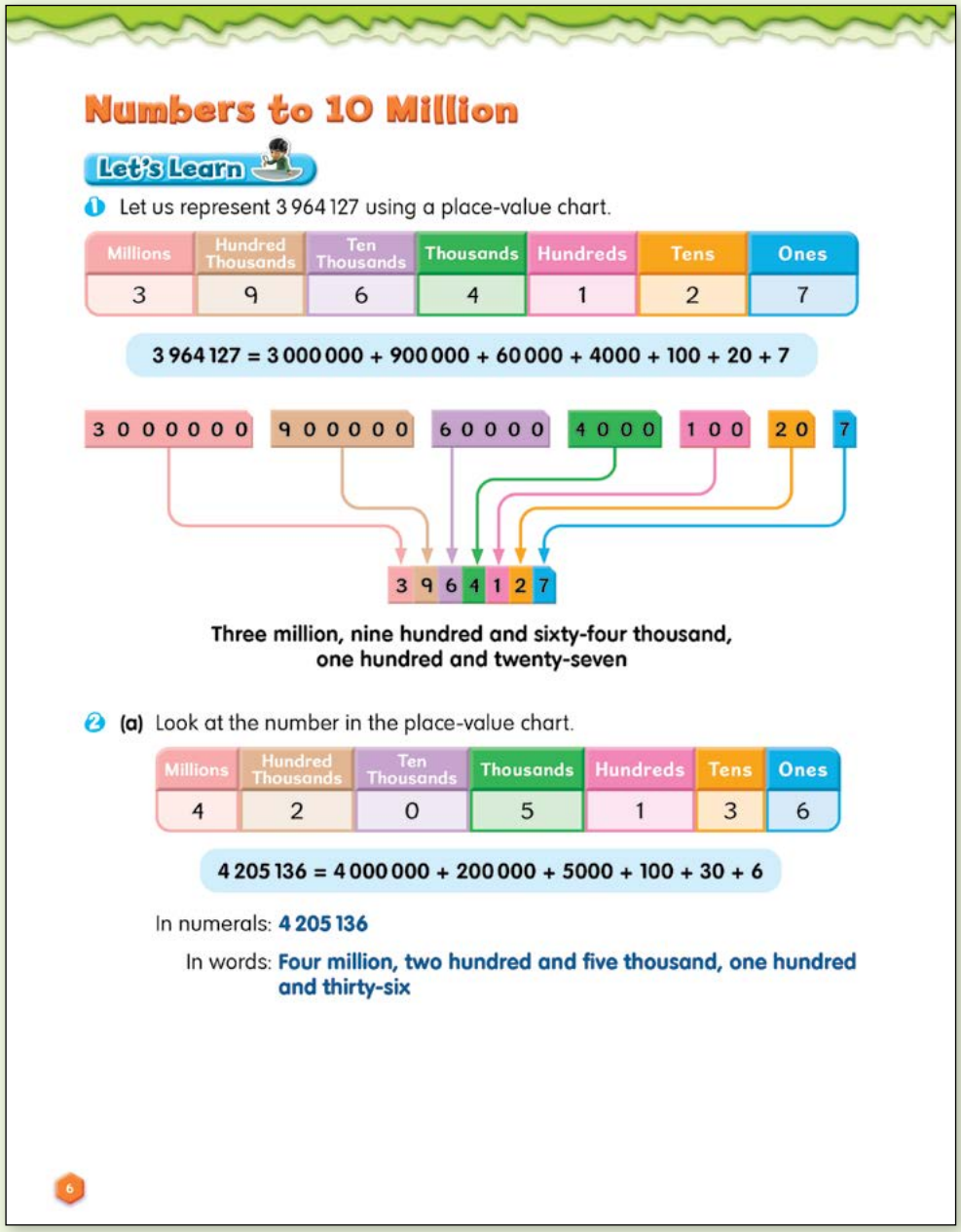
Let's Learn

1

- Begin by asking students to read the number 3 964 127 aloud.
- Have students identify the digit in each column of the place-value chart, starting from millions to ones.
- Ask:
  - What does the 3 represent?
  - What does the 9 represent?
  - Continue through each digit to reinforce the value of each place.
- Guide students to express the number in expanded form:
  - 3 000 000 + 900 000 + 60 000 + 4000 + 100 + 20 + 7.
- Discuss how each place-value card shows the value of one digit and how combining the cards forms the complete number.
- Ask:
  - If we remove the 900 000 card, what number would remain?
  - What if the 4000 is changed to 8000?
- Invite students to read the number in words and compare it with the expanded form.

2 (a)

- Go through the teaching in a similar manner as 1.



Numbers to 10 Million

Let's Learn

1 Let us represent 3 964 127 using a place-value chart.

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
3	9	6	4	1	2	7

3 964 127 = 3 000 000 + 900 000 + 60 000 + 4000 + 100 + 20 + 7

3 0 0 0 0 0 0 | 9 0 0 0 0 0 | 6 0 0 0 0 | 4 0 0 0 | 1 0 0 | 2 0 | 7

3 9 6 4 1 2 7

Three million, nine hundred and sixty-four thousand, one hundred and twenty-seven

2 **(a)** Look at the number in the place-value chart.

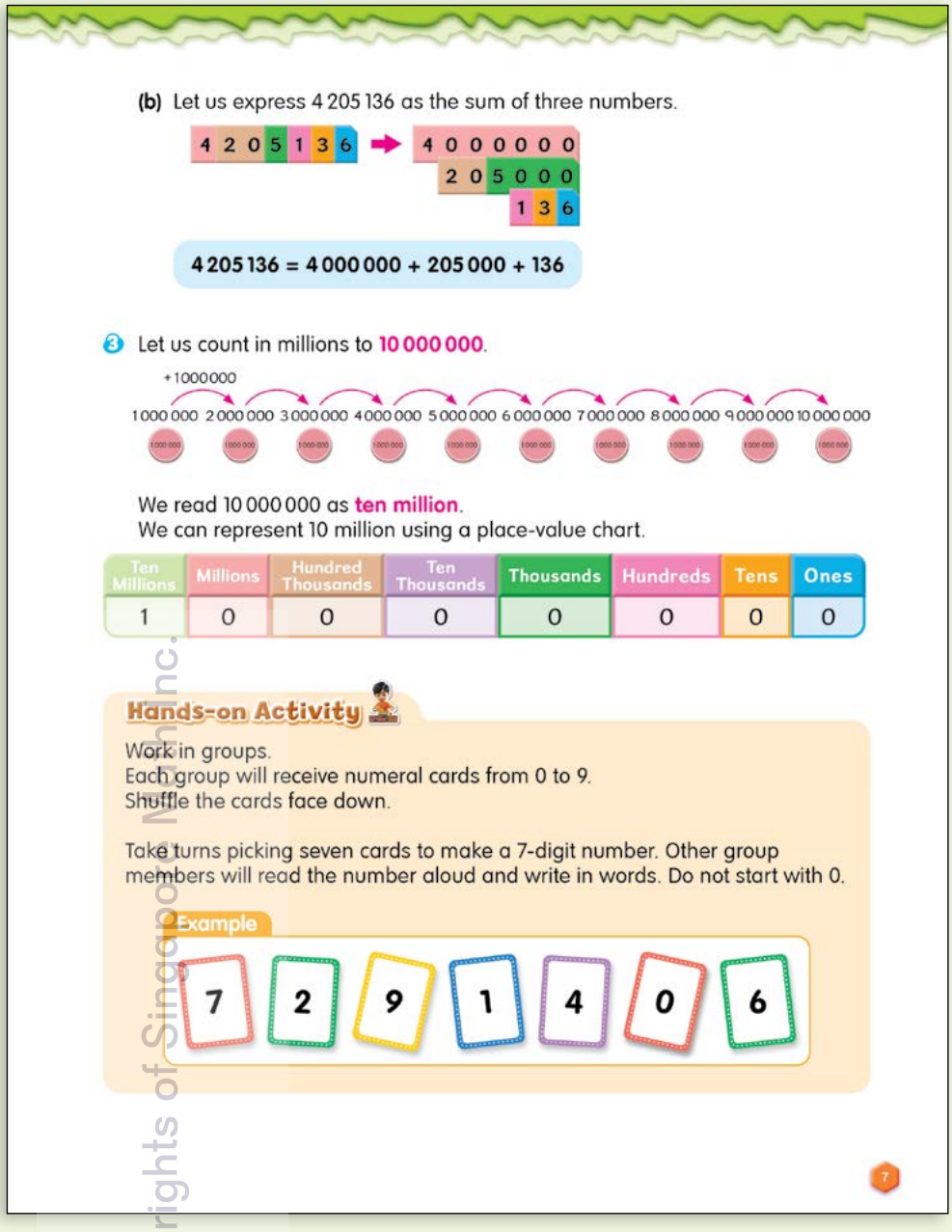
Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
4	2	0	5	1	3	6

4 205 136 = 4 000 000 + 200 000 + 5000 + 100 + 30 + 6

In numerals: **4 205 136**

In words: **Four million, two hundred and five thousand, one hundred and thirty-six**

6



Hands-on Activity

Materials: Numeral cards

- Distribute numeral cards (0–9) to each group. Remind them to shuffle the cards and place them face down.
- Go through the instructions with them.
- Ask key questions to guide discussion:
  - What is the value of the digit in the millions place?
  - Why can't the number start with 0?
  - Which digit has the greatest value in your number? Why?
- Invite groups to share one example with the class. Ask them to explain how they determined the place value of each digit.
- Discuss any errors openly and constructively, especially misreading large numbers or omitting place values when writing in words.
- Conclude by highlighting the learning point: a 7-digit number includes millions, and the value of each digit depends on its position. Understanding place value allows us to read, write and interpret large numbers accurately.

(Continued on Pg 10.)

(b)

- Ask students to read the number 4 205 136 aloud and guide them to observe how the number is grouped into 4 000 000, 205 000 and 136.
- Ask:
  - Why can 205 136 be split into 205 000 and 136?
  - What place values are in each part?
- Discuss how the breaking up keeps the place values intact and makes the number easier to understand.

3

- Guide students to count aloud in millions from 1 000 000 to 10 000 000.
- Ask:
  - What increases each time we count in millions?
  - Which digit changes?
- Emphasise that 10 000 000 is read as "ten million."
- Direct attention to the place-value chart and ask which column now has the digit 1.
- Ask:
  - How many zeros are there in 10 000 000?
  - What does each zero represent?
- Reinforce that 10 million equals 10 groups of one million and can be clearly shown using a place-value chart.
- Conclude by highlighting that understanding place value helps us extend counting from thousands to millions and beyond.

(Continued from Pg 9.)

AfL Are students able to:

- Interpret digits correctly according to place value?
- Write the number in words, including appropriate use of "thousand" and "million"?

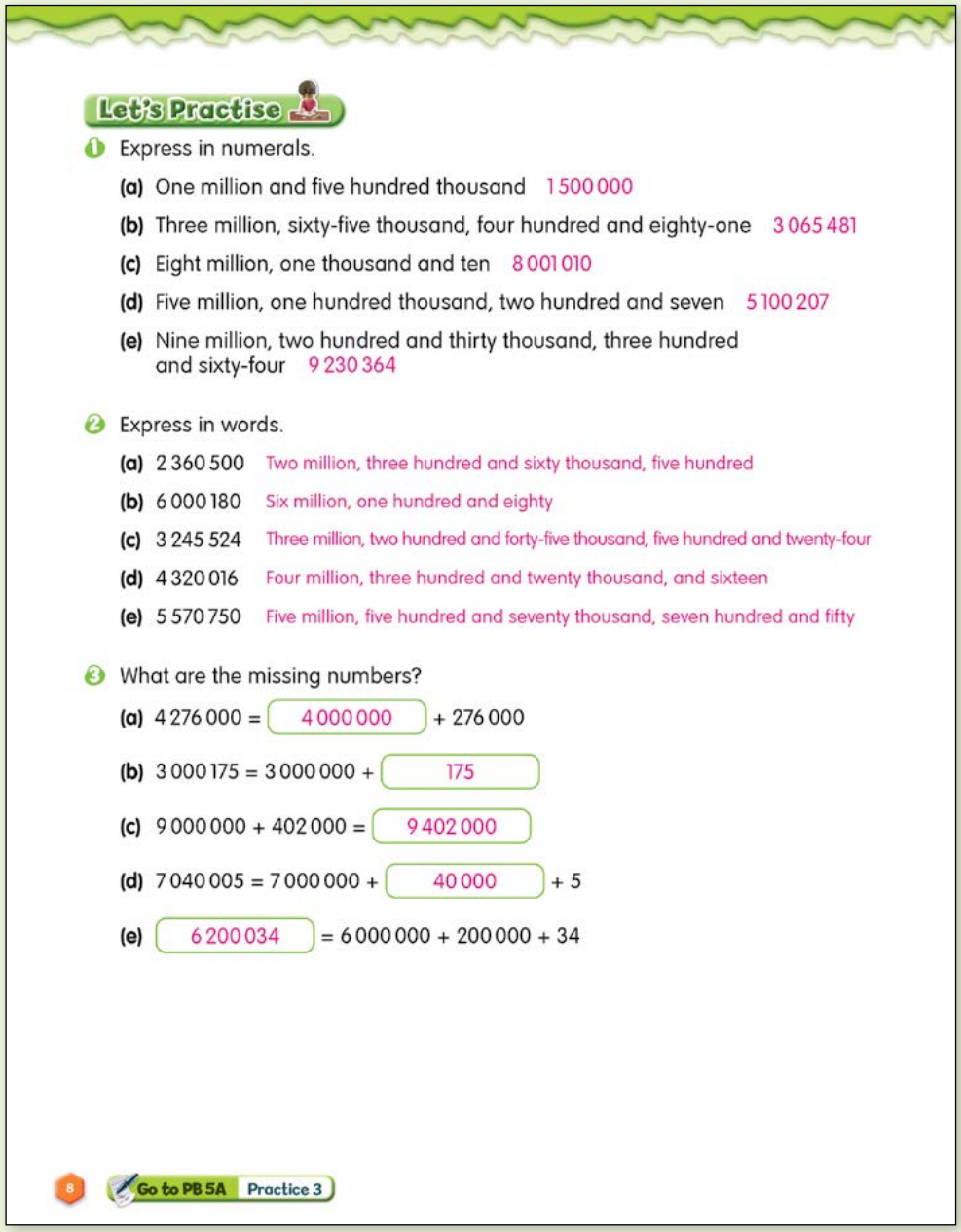
Suggested Action(s)

For students who need additional support:

- Provide a place-value chart template as visual support when arranging their digits.
- Model one example as a class before the group activity, thinking aloud while forming and reading the number.
- Encourage them to first identify the millions digit, then build the number step by step from left to right.

Let's Practise

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



Let's Practise

1 Express in numerals.

(a) One million and five hundred thousand 1 500 000

(b) Three million, sixty-five thousand, four hundred and eighty-one 3 065 481

(c) Eight million, one thousand and ten 8 001 010

(d) Five million, one hundred thousand, two hundred and seven 5 100 207

(e) Nine million, two hundred and thirty thousand, three hundred and sixty-four 9 230 364

2 Express in words.

(a) 2 360 500 Two million, three hundred and sixty thousand, five hundred

(b) 6 000 180 Six million, one hundred and eighty

(c) 3 245 524 Three million, two hundred and forty-five thousand, five hundred and twenty-four

(d) 4 320 016 Four million, three hundred and twenty thousand, and sixteen

(e) 5 570 750 Five million, five hundred and seventy thousand, seven hundred and fifty

3 What are the missing numbers?

(a) 4 276 000 = [4 000 000] + 276 000

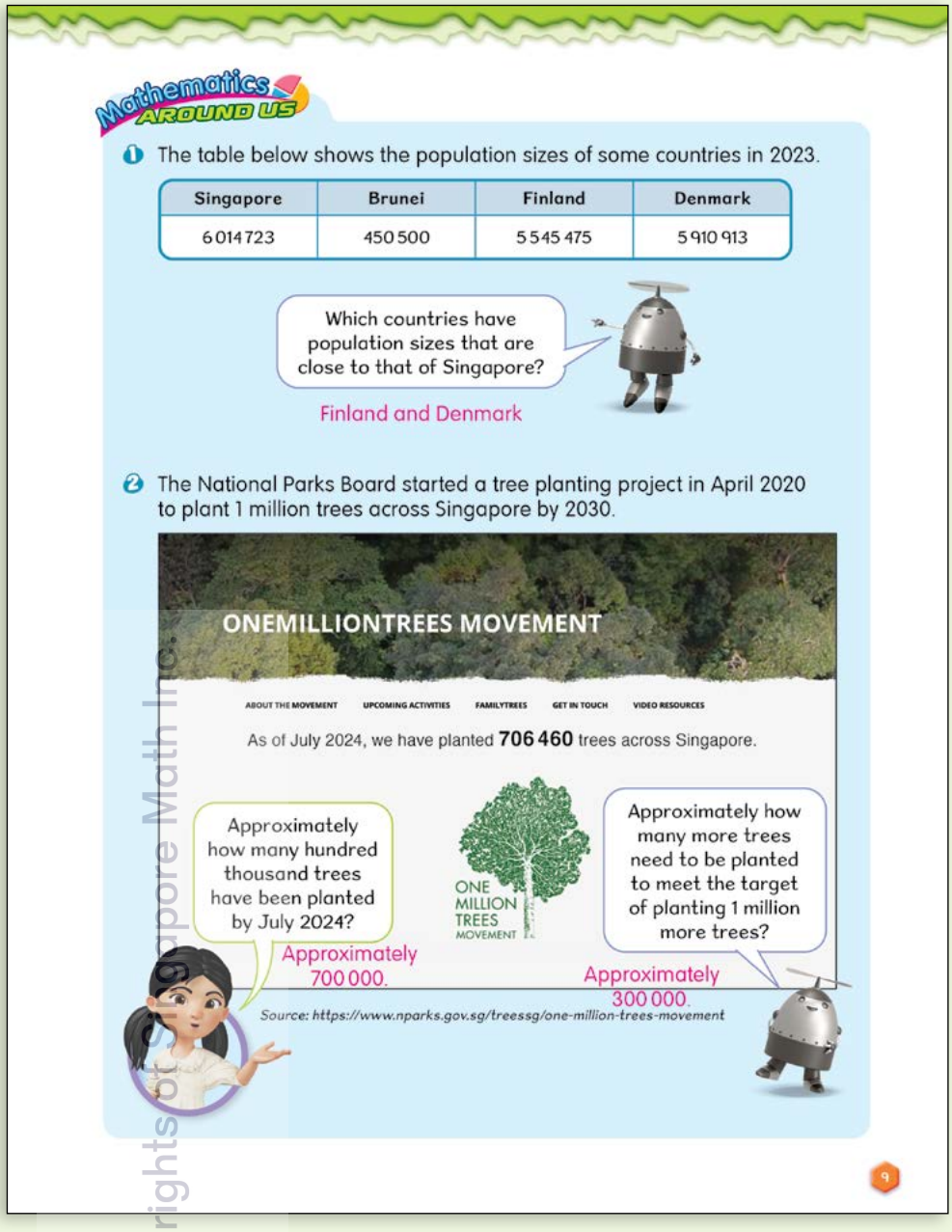
(b) 3 000 175 = 3 000 000 + [175]

(c) 9 000 000 + 402 000 = [9 402 000]

(d) 7 040 005 = 7 000 000 + [40 000] + 5

(e) [6 200 034] = 6 000 000 + 200 000 + 34

8 Go to PB 5A Practice 3



- Conclude by reinforcing that comparing, estimating and interpreting large numbers help us make sense of real-world information and evaluate progress toward goals.

Mathematics AROUND US 2

1

- Refer students to the table showing the population sizes of different countries in 2023. Ask them what they notice about the numbers.
- Invite students to read each population aloud and compare them with Singapore's population.
- Ask:
  - Which countries have population sizes close to Singapore's?
  - How do you know?
  - What makes a number "close"?
- Encourage students to explain their reasoning, such as comparing the millions first before looking at the remaining digits.
- Discuss how governments and organisations use large numbers like population figures to plan housing, transport and services.

2

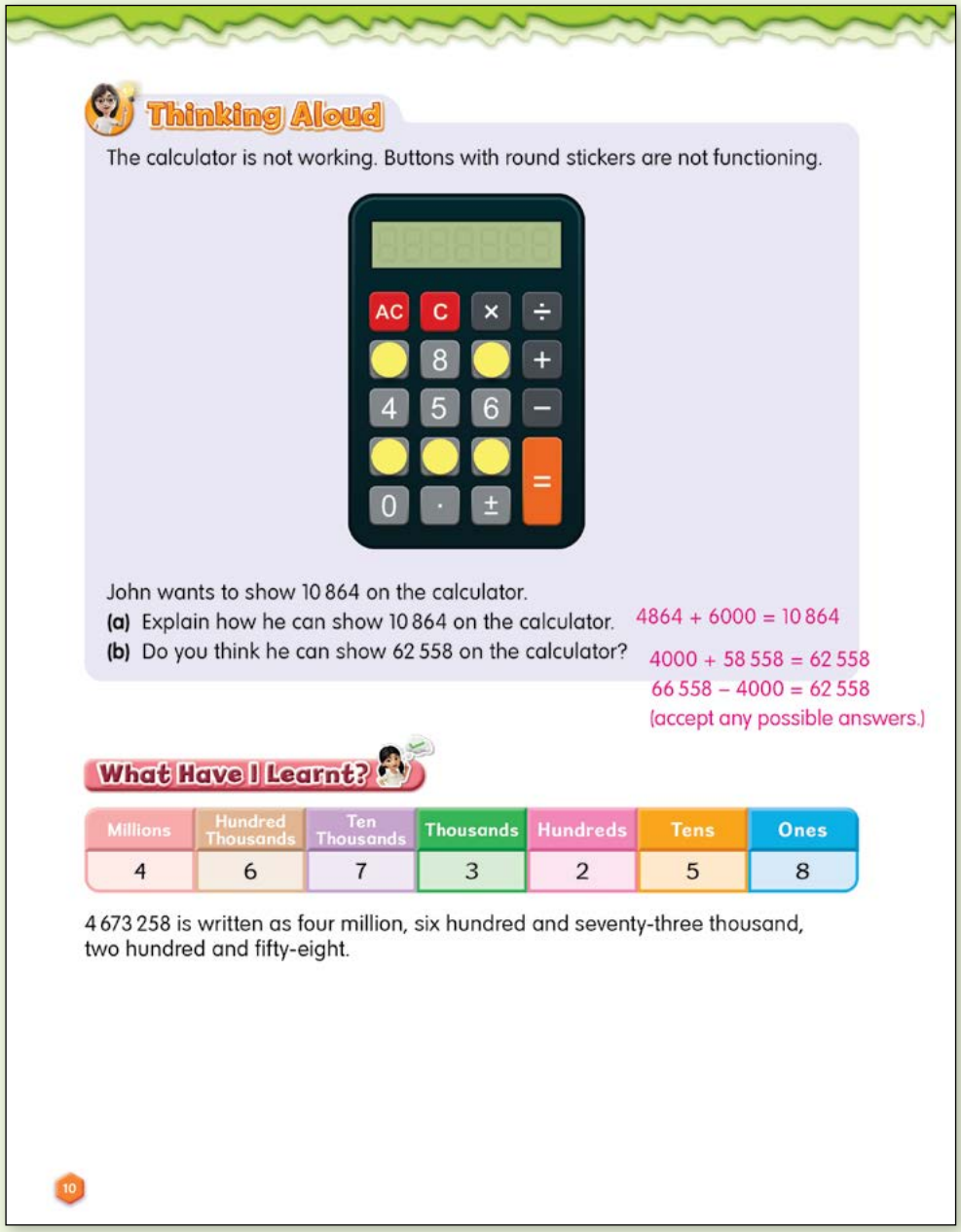
- Refer students to the OneMillionTrees Movement. Ask students to read the statement about planting 706 460 trees.
- Ask:
  - Approximately how many hundred thousand trees have been planted?
  - How did you estimate?
- Guide students to round or approximate the number and explain why 706 460 is close to 700 000.
- Ask:
  - If the target is 1 000 000 trees, approximately how many more trees are needed?
  - How did you find your answer?
- Invite students to share different strategies, such as subtracting exactly or estimating by rounding.
- Discuss how estimation helps people quickly understand progress in large projects.
- Emphasise that mathematics is used daily in understanding population data, national projects, planning and decision-making.

Thinking Aloud

- Have them observe the calculator carefully and identify which buttons are not functioning (those with round stickers).
- Ask students what difficulties John might face when trying to key in 10 864 directly.
- Encourage students to think flexibly: If some digits cannot be pressed, how else can the number be formed using working buttons?
- Invite students to suggest expressions that equal 10 864, such as combining addition or subtraction.
- Ask:
  - How can we break 10 864 into two or more numbers that we are able to key in?
  - Why does your method work?
- Write students' suggested expressions on the board and evaluate them together to check whether they equal 10 864.
- Move to part **(b)** and ask whether 62 558 can be shown. Encourage students to justify their reasoning using place value and number decomposition.
- Highlight multiple valid strategies and affirm creative yet mathematically correct approaches.
- Conclude by reinforcing the learning point: understanding place value and number relationships allows us to break up and combine numbers flexibly to reach the same total, even when constraints are present.

AfL Are students able to:

- Break up 10 864 into valid sums or differences using available digits?
- Use place-value reasoning when forming alternative expressions?
- Recognise that addition and subtraction can also be used strategically?



Thinking Aloud

The calculator is not working. Buttons with round stickers are not functioning.

John wants to show 10 864 on the calculator.

(a) Explain how he can show 10 864 on the calculator. 4864 + 6000 = 10 864

(b) Do you think he can show 62 558 on the calculator? 4000 + 58 558 = 62 558
66 558 − 4000 = 62 558
(accept any possible answers.)

What Have I Learnt?

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
4	6	7	3	2	5	8

4 673 258 is written as four million, six hundred and seventy-three thousand, two hundred and fifty-eight.

10

Suggested Action(s)

For students who need additional support:

- Model one example aloud, demonstrating how to think about "building" a number using friendly parts based on place values.
- Encourage them to test expressions before sharing.

What Have I Learnt?

- Encourage students to read the summary section slowly and connect it to what they have learned earlier in the chapter, such as numbers to 1 million and 10 millions.
- Invite students to reflect on whether the summary points helped them and if they are still uncertain about them 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.