Online onlineresources.sapgrp.com

Learning MATHS 3A

Reviewed and recommended by Teachers and Parents

SAMPLE

Author
Tina Myung
Dip.Ed.

Executive Editor
Chelsea Cheh

NAME : _____

CLASS : _____

Learning Maths Book 3A

New Edition 2018

© Singapore Asia Publishers Pte Ltd

Published and Distributed by:

Singapore Asia Publishers Pte Ltd
219 Henderson Road #10-04
Henderson Industrial Park
Singapore 159556
Tel : +65 6276 8280
Fax : +65 6276 8292
Email: info.sg@sapgrp.com
Website: www.sapgrp.com
Facebook: Singapore-Asia-Publishers

ALL RIGHTS RESERVED
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the publishers.

ISBN-13 978-981-274-236-0
ISBN-10 981-274-236-0

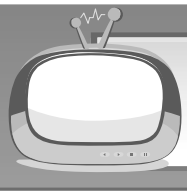
Printed under licence in Australia by Five Senses Education Pty Ltd

SAP Global Partners' Network:

Antigua & Barbuda
Australia
Bahrain
Bangladesh
Barbados
Bhutan
Bostwana
Brazil
Brunei
Cambodia
Canada
Chile
China
Colombia
Egypt
Fiji Island
Ghana
Grenada
Guyana
Hong Kong
India
Indonesia
Jamaica
Japan
Laos
Lebanon
Macau
Malaysia
Malawi
Maldives
Mauritius
Myanmar
Namibia
Nepal
New Zealand
Nigeria
Pakistan
Papua New Guinea
Philippines
Poland
Portugal
Qatar
Rwanda
Saudi Arabia
Seychelles
Singapore
Solomon Islands
Sri Lanka
Saint Lucia
Saint Vincent & the Grenadines
South Africa
South Korea
Syria
Taiwan
Tanzania
Thailand
Trinidad & Tobago
United Arab Emirates
United Kingdom
United States of America
Vietnam
Zambia
Zimbabwe

For international business enquiries, email **ibg@sapgrp.com**

SAMPLE



PREFACE

Learning Maths Book 3A is a comprehensive workbook that provides students with ample practice on various mathematics question types. How is the book helpful to students?

Summary of Learning Outcomes
Refer to the overview of the topics in the book which sets the pace for learning each topic.

Formulae Sheet
Check and recall the essential and critical mathematical formulae and information for each topic.

Free Online Activities
Go online to try the fun activities. Refer to the Contents page to access them.

Topical Exercises
Work on these questions as you learn and become familiar with various question types.

Revision Papers
Test yourself. This is the best way to assess your understanding of the topics taught and learnt.

Non-routine Questions
Understand the heuristics better. Try these non-routine questions to develop your thinking and analytical skills.

Step-by-step Solutions
Learn from the carefully worked out solutions included at the back of the book.

Through this comprehensive workbook, students can gain a thorough understanding of the mathematical concepts, hone their problem-solving skills and develop creative and critical thinking skills. This book will inspire confidence as the student progresses.

Tina Myung
Dip. Ed.

SAMPLE

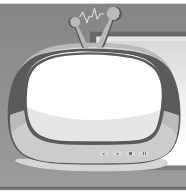
CONTENTS

❶ Log on to onlineresources.sapgrp.com
❷ Click on the title of the book.
❸ Key in the 13-digit ISBN of this book (found on back cover).



Summary of Learning Outcomes ---------- (i)
Formulae Sheet ---------- (ii)
Unit 1 Numbers within 10 000 ---------- 1
Unit 2 Adding Numbers within 10 000 ---------- 7
REVISION 1 ---------- 14
Unit 3 Subtracting Numbers within 10 000 ---------- 17
Unit 4 Problem-Solving (Adding and Subtracting) ---------- 22
REVISION 2 ---------- 28
Unit 5 Multiplying Numbers by 6, 7, 8 and 9 ---------- 33
Unit 6 Multiplying Numbers ---------- 42
REVISION 3 ---------- 48
Unit 7 Dividing Numbers ---------- 53
Unit 8 Problem-Solving (Multiplying and Dividing) ---------- 60
Unit 9 Mental Calculations ---------- 70
REVISION 4 ---------- 73
FINAL REVISION ---------- 77
NON-ROUTINE QUESTIONS
Heuristics: Look for a Pattern ---------- 82
Word Problems ---------- 84
SOLUTIONS ---------- 87

SAMPLE



LEARNING OUTCOMES

Unit 1 Numbers within 10 000
Students should be able to
- recognise and write numbers within 10 000 in numerals and words
- understand the place value of numbers within 10 000
- compare and arrange numbers within 10 000
- complete number patterns

Unit 2 Adding Numbers within 10 000
Students should be able to
- add numbers within 10 000
- perform addition by regrouping ones, tens and hundreds
- solve up to two-step addition word problems

Revision 1
This revision paper tests a student's understanding of Units 1 & 2.

Unit 3 Subtracting Numbers within 10 000
Students should be able to
- subtract numbers within 10 000
- perform subtraction by regrouping ones, tens, hundreds and thousands
- solve up to two-step subtraction word problems

Unit 4 Problem-Solving (Adding and Subtracting)
Students should be able to
- solve up to two-step word problems related to addition and subtraction

Revision 2
This revision paper tests a student's understanding of Units 3 & 4.

Unit 5 Multiplying Numbers by 6, 7, 8 and 9
Students should be able to
- multiply numbers by 6, 7, 8 and 9
- divide numbers by 6, 7, 8 and 9
- solve up to two-step multiplication word problems

Unit 6 Multiplying Numbers
Students should be able to
- multiply numbers without regrouping
- multiply numbers by regrouping ones, tens, hundreds and thousands
- solve up to two-step multiplication word problems

Revision 3
This revision paper tests a student's understanding of Units 5 & 6.

Unit 7 Dividing Numbers
Students should be able to
- divide numbers by regrouping hundreds, tens and ones
- find quotient and remainder by dividing
- identify odd and even numbers
- solve up to two-step division word problems

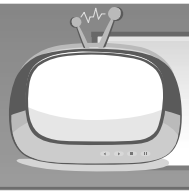
Unit 8 Problem-Solving (Multiplying and Dividing)
Students should be able to
- solve up to two-step word problems involving addition, subtraction, multiplication and division

Unit 9 Mental Calculations
Students should be able to
- add and subtract two 2-digit numbers mentally
- multiply and divide numbers within 10 × 10 multiplication table mentally

Revision 4
This revision paper tests a student's understanding of Units 7, 8 & 9.

Final Revision
This revision paper is an excellent assessment of a student's understanding of all the topics in this book.

SAMPLE



FORMULAE SHEET

Unit 1 Numbers within 10 000

4-digit numbers can be written in this manner.
Example: Write 8945 in words.
eight thousand, nine hundred and forty-five

Place value

In a 4-digit number, each digit is in a different place and has a different value. The place value will help us identify the particular place such as thousands, hundreds, tens or ones of a digit and its value.

Example:
In 3785,
the digit 3 is in the **thousands** place.
the digit 3 stands for **3000**.
the value of the digit 3 is **3000**.

Comparing numbers

Start comparing the two numbers from the thousands place.

- When one number is bigger than the other, use the words **greater than** to describe it.
- When one number is smaller than the other, use the words **smaller than** to describe it.

Order and Pattern

When arranging a set of numbers in order,

- take note if the order must begin with the greatest or the smallest,
- compare the place value of the numbers,
- arrange these numbers in the correct order.

For number pattern,

- take note if the number pattern is in an increasing or a decreasing order,
- find the difference between two consecutive numbers,
- apply the difference to find the unknown number.

'More than' and 'Less than'

Substitute the words **more than** with an addition sign (+).
Example: What is 1000 more than 6007?
1000 + 6007 = 7007

Similarly, substitute the words **less than** with a subtraction sign (**–**).
Example: What is 1000 less than 6007?
6007 – 1000 = 5007

Unit 2 Adding Numbers within 10 000

The word **sum** means addition.

Adding without regrouping

- Add the digits in the ones place first.
- Add the digits in the tens place.
- Add the digits in the hundreds place.
- Add the digits in the thousands place.

Adding with regrouping

- Add the digits in the ones place first. Regroup the ones if there are more than 10 ones.
- Add the digits in the tens place. Add another ten if there is a regrouping of ones. Regroup the tens if there are more than 10 tens.
- Add the digits in the hundreds place. Add another hundred if there is a regrouping of tens. Regroup the hundreds if there are more than 10 hundreds.
- Add the digits in the thousands place. Add another thousand if there is a regrouping of hundreds.

Unit 3 Subtracting Numbers within 10 000

The word **difference** means subtraction.

Subtracting without regrouping

- Subtract the digits in the ones place first.
- Subtract the digits in the tens place.
- Subtract the digits in the hundreds place.
- Subtract the digits in the thousands place.

Subtracting with regrouping

- Subtract the digits in the ones place first. If this is not possible, regroup the tens and ones.
- Subtract the digits in the tens place. If this is not possible, regroup the hundreds and tens.
- Subtract the digits in the hundreds place. Regroup the thousands and hundreds if needed.
- Subtract the digits in the thousands place.

Unit 4 Problem-Solving (Adding and Subtracting)

Below are suggested steps to solve routine mathematical problems.

1. First, read and understand the problem.
2. Look for keywords to determine whether to add or subtract.
3. Draw models to help you understand the problem better.
4. Write the number sentences.
5. Do your working on the right side of the space.
6. Remember to write your answers in the number sentences.
7. Write a statement to answer the word problem. You can underline the final answer in the statement.

Unit 5 Multiplying Numbers by 6, 7, 8 and 9

Below are the multiplication tables of 6, 7, 8 and 9.

×	6	7	8	9
1	6	7	8	9
2	12	14	16	18
3	18	21	24	27
4	24	28	32	36
5	30	35	40	45
6	36	42	48	54
7	42	49	56	63
8	48	56	64	72
9	54	63	72	81
10	60	70	80	90
11	66	77	88	99
12	72	84	96	108

SAMPLE

Unit 6 Multiplying Numbers

The terms in multiplication are:

multiplicand × multiplier = product

Multiplying without regrouping

- Multiply the digit in the ones place by the multiplier first.
- Multiply the digit in the tens place by the multiplier.
- Multiply the digit in the hundreds place by the multiplier.

Multiplying with regrouping

- Multiply the digit in the ones place by the multiplier first. Regroup the ones if there are more than 10 ones.
- Multiply the digit in the tens place by the multiplier. Remember to add the tens from the regrouping of ones if there is any. Regroup the tens if there are more than 10 tens.
- Multiply the digit in the hundreds place by the multiplier. Remember to add the hundreds from the regrouping of tens if there is any. Regroup the hundreds if there are more than 10 hundreds.

Unit 7 Dividing Numbers

The terms in division are:

dividend ÷ divisor = quotient and remainder

When the dividend can be divided equally by the divisor, there will be no remainder.
When the dividend cannot be divided equally by the divisor, there will be a remainder. The remainder will be less than the divisor.

In order to do division, you have to know the multiplication table by heart.

Division without regrouping

- Divide the digit in the hundreds place by the divisor first.
- Divide the digit in the tens place by the divisor.
- Divide the digit in the ones place by the divisor.

Division with regrouping

- Divide the digit in the hundreds place by the divisor first. Find the remainder of hundreds if there is any.
- Regroup the remainder of hundreds to tens. Add up all tens. Divide the tens by the divisor. Find the remainder of tens if there is any.
- Regroup the remainder of tens to ones. Add up all ones. Divide the ones by the divisor. Find the remainder if there is any.

Odd numbers are numbers that will have a remainder of 1 when divided by 2.
Example of odd numbers: 1, 3, 5, 7, 9, 11, ...

Even numbers are numbers that will have no remainder when divided by 2.
Example of even numbers: 2, 4, 6, 8, 10, 12, ...

Unit 8 Problem-Solving (Multiplying and Dividing)

Below are suggested steps to solve routine mathematical problems.

1. First, read and understand the problem.
2. Look for keywords to determine whether to multiply or divide.
3. Draw models to help you understand the problem better.
4. Write the number sentences.
5. Do your working on the right side of the space.
6. Remember to write your answers in the number sentences.
7. Write a statement to answer the word problem. You can underline the final answer in the statement.

Unit 9 Mental Calculations

Adding mentally

Method 1

Step 1: Break up one of the addends into tens and ones.
Step 2: Add the other addend to the tens in Step 1.
Step 3: Add the remaining ones to the result in Step 2.

Method 2

Step 1: Round up one of the addends to the nearest tens. Remember to find the difference between the addend and its round tens.
Step 2: Add the round tens to the other addend.
Step 3: Subtract the difference in Step 1 from the result obtained from Step 2.

Method 3

Step 1: Round up one of the addends to 100. Remember to find the difference between the addend and 100.
Step 2: Add 100 to the other addend.
Step 3: Subtract the difference in Step 1 from the result obtained from Step 2.

Subtracting mentally

Method 1

Step 1: Break up one of the subtraheads into tens and ones.
Step 2: Subtract the tens in Step 1 from the other subtrahead.
Step 3: Subtract the remaining ones from the result obtained from Step 2.

Method 2

Step 1: Round up one of the subtraheads to the nearest tens. Remember to find the difference between the subtrahead and its round tens.
Step 2: Subtract the round tens from the other subtrahead.
Step 3: Add the difference in Step 1 to the result obtained from Step 2.

Multiplying and Dividing mentally

In order to multiply and divide fast and accurate, you must memorise the multiplication tables of 2 to 10 by heart.

When multiplying and dividing tens or hundreds by a number, we can substitute the zeros in the tens and hundreds by the words **tens** or **hundreds**. This will make the multiplication or division of numbers look smaller and manageable.

SAMPLE

SAMPLE



1 NUMBERS WITHIN 10 000

Examples

1. Write 3208 in words. **three thousand, two hundred and eight**

2. In 6927,
   (a) the digit **2** is in the **tens** place.
   (b) the digit **9** is in the **hundreds** place.
   (c) the value of the digit **7** is **7**.
   (d) the value of the digit **6** is **6000**.
   (e) the digit **9** stands for **900**.

3. Arrange these numbers in order. Begin with the smallest.
   4205, 3761, 4502, 6389 **3761, 4205, 4502, 6389**

4. Complete the number pattern below.
   1936, _____, _____, 2236, 2336, _____
   1936, **2036**, **2136**, 2236, 2336, **2436**

Write the numbers on the lines provided.

1. three thousand, six hundred and twenty-five _____
2. nine thousand and ninety-nine _____
3. six thousand, two hundred and eight _____
4. five thousand, eight hundred and seventeen _____
5. eight thousand and thirty-five _____

SAMPLE

Write the following numbers in words.

6. 9693 _____

7. 4313 _____

8. 8440 _____

9. 7015 _____

10. 6505 _____

Count the numbers by tens, hundreds or thousands. Write the correct answer in each blank.

11.	8050	8060		8080	
12.	2111		2311		2511
13.	3593	4593		6593	
14.	1999		2199	2299	
15.	7080		7100		7120

Fill in each blank with the correct answer.

16. 3740 = ____ thousands ____ hundreds ____ tens ____ ones

17. 9361 = ____ thousands ____ hundreds ____ tens ____ one

18. 7001 = ____ thousands ____ hundreds ____ tens ____ one

19. 6384 = _____ + _____ + _____ + _____

20. 1072 = _____ + _____ + _____ + _____

21. 4951 = _____ + _____ + _____ + _____

SAMPLE

22. 5818 = 5000 + _____ + 10 + 8

23. 2756 = _____ + 700 + 50 + 6

24. 8668 = 8000 + _____ + 60 + 8

25. In 1540,
    (a) the digit _____ is in the ones place.
    (b) the digit 1 is in the _____ place.
    (c) the value of the digit 5 is _____.
    (d) the value of the digit _____ is 40.

26. In 8429,
    (a) the digit _____ is in the hundreds place.
    (b) the digit 9 is in the _____ place.
    (c) the value of the digit 2 is _____.
    (d) the value of the digit _____ is 8000.

27. In 5741,
    (a) the digit _____ is in the thousands place.
    (b) the digit 4 is in the _____ place.
    (c) the value of the digit 7 is _____.
    (d) the value of the digit _____ is 1.

Circle the smaller number.

28. 6447 6474

29. 1704 1047

30. 4196 8196

SAMPLE

Circle the greater number.

31. 6456 6656

32. 8294 8942

33. 3010 3001

Circle the greatest number.

34. 4614 4216 4461

35. 9909 9999 9099

36. 5115 5515 5551

Circle the smallest number.

37. 8624 2468 2648

38. 3829 3920 9833

39. 5625 6250 2056

Fill in each blank with 'greater' or 'smaller'.

40. 1068 is _____ than 1168.

41. 8843 is _____ than 8803.

42. 7452 is _____ than 5252.

SAMPLE

43. 3090 is _____ than 309.

44. 4234 is _____ than 4324.

Complete the number patterns.

45. 1540, 1545, _____, _____, 1560

46. 4869, _____, 4669, 4569, _____

47. 2330, 2340, _____, 2360, _____

48. 8719, _____, _____, 5719, 4719

49. 5876, 5886, _____, _____, 5916

Arrange these numbers in order. Begin with the greatest.

50. 3619 6193 1936 9316

_____, _____, _____, _____

51. 5805 5508 5850 5058

_____, _____, _____, _____

52. 9396 6939 3699 9963

_____, _____, _____, _____

53. 4120 2014 4210 2104

_____, _____, _____, _____

SAMPLE

SOLUTIONS
Learning Maths 3A

Unit 1: Numbers within 10 000

1. **3625**
2. **9099**
3. **6208**
4. **5817**
5. **8035**
6. **nine thousand, six hundred and ninety-three**
7. **four thousand, three hundred and thirteen**
8. **eight thousand, four hundred and forty**
9. **seven thousand and fifteen**
10. **six thousand, five hundred and five**
11. **8070**, **8090**
    8060 – 8050 = 10
    8060 + 10 = 8070
    8080 + 10 = 8090
12. **2211**, **2411**
    2111 + 100 = 2211
    2311 + 100 = 2411
13. **5593**, **7593**
    4593 – 3593 = 1000
    4593 + 1000 = 5593
    6593 + 1000 = 7593
14. **2099**, **2399**
    2299 – 2199 = 100
    1999 + 100 = 2099
    2299 + 100 = 2399
15. **7090**, **7110**
    7080 + 10 = 7090
    7100 + 10 = 7110
16. **3**, **7**, **4**, **0**
17. **9**, **3**, **6**, **1**
18. **7**, **0**, **0**, **1**
19. **6000**, **300**, **80**, **4**
20. **1000**, **0**, **70**, **2**
21. **4000**, **900**, **50**, **1**
22. **800**
23. **2000**
24. **600**
25. (a) **0**
    (b) **thousands**
    (c) **500**
    (d) **4**
26. (a) **4**
    (b) **ones**
    (c) **20**
    (d) **8**
27. (a) **5**
    (b) **tens**
    (c) **700**
    (d) **1**
28. **6447**
29. **1047**
30. **4196**
31. **6656**
32. **8942**
33. **3010**
34. **4614**
35. **9999**
36. **5551**
37. **2468**
38. **3829**
39. **2056**
40. **smaller**
41. **greater**
42. **greater**
43. **greater**
44. **smaller**
45. **1550**, **1555**
    1545 – 1540 = 5
    1545 + 5 = 1550
    1550 + 5 = 1555
46. **4769**, **4469**
    4669 – 4569 = 100
    4869 – 100 = 4769
    4569 – 100 = 4469
47. **2350**, **2370**
    2340 – 2330 = 10
    2340 + 10 = 2350
    2360 + 10 = 2370
48. **7719**, **6719**
    5719 – 4719 = 1000
    8719 – 1000 = 7719
    7719 – 1000 = 6719
49. **5896**, **5906**
    5886 – 5876 = 10
    5886 + 10 = 5896
    5896 + 10 = 5906
50. **9316**, **6193**, **3619**, **1936**
51. **5850**, **5805**, **5508**, **5058**
52. **9963**, **9369**, **6939**, **3699**
53. **4210**, **4120**, **2104**, **2014**
54. **8616**, **8116**, **6881**, **6818**
55. **1424**, **2424**, **4424**, **8424**
56. **8001**, **8011**, **8101**, **8118**
57. **4025**, **4520**, **5045**, **5240**
58. **3369**, **3693**, **6339**, **6933**
59. **4169**, **4619**, **4691**, **4916**
60. **8621**
61. **3579**

Unit 2: Adding Numbers within 10 000

1. 1386 + 2001 = **3387**

$$\begin{array}{r} 1\,3\,8\,6 \\ +\,2\,0\,0\,1 \\ \hline 3\,3\,8\,7 \end{array}$$

2. 5210 + 4689 = **9899**

$$\begin{array}{r} 5\,2\,1\,0 \\ +\,4\,6\,8\,9 \\ \hline 9\,8\,9\,9 \end{array}$$

3. 4037 + 2232 = **6269**

$$\begin{array}{r} 4\,0\,3\,7 \\ +\,2\,2\,3\,2 \\ \hline 6\,2\,6\,9 \end{array}$$

4. 6512 + 3076 = **9588**

$$\begin{array}{r} 6\,5\,1\,2 \\ +\,3\,0\,7\,6 \\ \hline 9\,5\,8\,8 \end{array}$$

5. 4378 + 1521 = **5899**

$$\begin{array}{r} 4\,3\,7\,8 \\ +\,1\,5\,2\,1 \\ \hline 5\,8\,9\,9 \end{array}$$

6. **11**, **9**
   1, **1**, **9**
   3 hundreds 6 tens + 8 hundreds 3 tens
   = 3 + 8 hundreds 6 + 3 tens
   = 11 hundreds 9 tens
   = 1 thousand 1 hundred 9 tens
7. **11**, **13**, **5**
   1, **2**, **3**, **5**
   5 hundreds 9 tens 3 ones + 6 hundreds 4 tens 2 ones
   = 5 + 6 hundreds 9 + 4 tens 3 + 2 ones
   = 11 hundreds 13 tens 5 ones
   = 1 thousand 2 hundreds 3 tens 5 ones
8. **12**, **8**, **13**
   1, **2**, **9**, **3**
   7 hundreds 6 tens 9 ones + 5 hundreds 2 tens 4 ones
   = 7 + 5 hundreds 6 + 2 tens 9 + 4 ones
   = 12 hundreds 8 tens 13 ones
   = 1 thousand 2 hundreds 9 tens 3 ones
9. **12**, **10**, **14**
   1, **3**, **1**, **4**
   4 hundreds 2 tens 5 ones + 8 hundreds 8 tens 9 ones
   = 4 + 8 hundreds 2 + 8 tens 5 + 9 ones
   = 12 hundreds 10 tens 14 ones
   = 1 thousand 3 hundreds 1 ten 4 ones
10. **17**, **6**, **5**
    1, **7**, **6**, **5**
    9 hundreds 1 ten 5 ones + 8 hundreds 5 tens
    = 9 + 8 hundreds 1 + 5 tens 5 ones
    = 17 hundreds 6 tens 5 ones
    = 1 thousand 7 hundreds 6 tens 5 ones
11. 2790 + 5637 = **8427**

$$\begin{array}{r} {\scriptstyle 1\ 1\ \ \ } \\ 2\,7\,9\,0 \\ +\,5\,6\,3\,7 \\ \hline 8\,4\,2\,7 \end{array}$$

12. 4078 + 3659 = **7737**

$$\begin{array}{r} {\scriptstyle \ 1\ 1\ \ } \\ 4\,0\,7\,8 \\ +\,3\,6\,5\,9 \\ \hline 7\,7\,3\,7 \end{array}$$

13. 8316 + 1473 = **9789**

$$\begin{array}{r} 8\,3\,1\,6 \\ +\,1\,4\,7\,3 \\ \hline 9\,7\,8\,9 \end{array}$$

SAMPLE

© SAP Group Pte Ltd • ALL RIGHTS RESERVED •