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Learning MATHS

Reviewed and recommended by Teachers and Parents

1B

Author
Tina Myung
Dip.Ed.

Executive Editor
Chelsea Cheh

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Learning Maths Book 1B

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219 Henderson Road #10-04
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Website: www.sapgrp.com
Facebook: Singapore-Asia-Publishers

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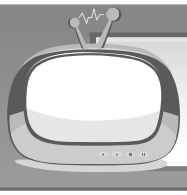
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PREFACE

Learning Maths Book 1B 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

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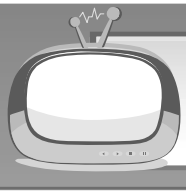
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❷ Click on the title of the book.
❸ Key in the 13-digit ISBN of this book (found on back cover).



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LEARNING OUTCOMES

Unit 10 Mass
Students should be able to
- find the mass of objects in units
- compare and arrange the mass of objects
- understand the words 'light', 'lighter', 'lightest', 'heavy', 'heavier' and 'heaviest'

Unit 11 Picture Graphs
Students should be able to
- create picture graphs based on the given data
- understand and interpret data from picture graphs

Revision 1
This revision paper tests a student's understanding of Units 10 & 11.

Unit 12 Numbers within 40
Students should be able to
- recognise numbers within 40
- group numbers into tens and ones
- compare numbers within 40
- arrange numbers in order within 40
- complete number patterns
- add and subtract numbers within 40
- add three numbers
- solve addition and subtraction word problems

Unit 13 Mental Calculations
Students should be able to
- add two numbers without regrouping mentally
- subtract two numbers without regrouping mentally

Unit 14 Multiplying
Students should be able to
- write correct multiplication sentences
- find the total in multiplication sentences
- solve one-step multiplication word problems

Revision 2
This revision paper tests a student's understanding of Units 12, 13 & 14.

Unit 15 Dividing
Students should be able to
- find the number of items in each group
- find the number of groups

Unit 16 Time
Students should be able to
- read time at the hour (o'clock) and half hour (half past)

Revision 3
This revision paper tests a student's understanding of Units 15 & 16.

Unit 17 Numbers within 100
Students should be able to
- recognise numbers within 100
- group numbers into tens and ones
- compare numbers within 100
- complete number patterns
- add and subtract numbers within 100
- solve one-step word problems

Unit 18 Money (Part 1)
Students should be able to
- count coins and dollar notes in different denominations
- match money of one denomination to the same value of another denomination

Unit 19 Money (Part 2)
Students should be able to
- perform addition and subtraction in dollars
- perform addition and subtraction in cents
- solve word problems related to money

Revision 4
This revision paper tests a student's understanding of Units 17, 18 & 19.

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

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FORMULAE SHEET

Unit 10 Mass

Comparing the mass of two objects

When two objects of different mass are placed on a balance, the object that sinks is heavier.

When two objects of different mass are placed on a balance, the object that rises is lighter.

When both sides of the balance are equal in height, it shows that the objects have the same mass.

To find the mass of an object, look at the number of units needed to balance the mass of the object.

Unit 11 Picture Graphs

To create a picture graph, you need to

- collect data,
- organise and place the data in a table.

We can read and use the picture graph to answer questions.

Note that the symbol used in the picture graph stands for 1 item.

Unit 12 Numbers within 40

Numerals	Words	Numerals	Words
21	twenty-one	31	thirty-one
22	twenty-two	32	thirty-two
23	twenty-three	33	thirty-three
24	twenty-four	34	thirty-four
25	twenty-five	35	thirty-five
26	twenty-six	36	thirty-six
27	twenty-seven	37	thirty-seven
28	twenty-eight	38	thirty-eight
29	twenty-nine	39	thirty-nine
30	thirty	40	forty

Place value

We can group numbers greater than 10 into tens and ones.

Example:

35 = **3** tens **5** ones

Number pattern

When completing number patterns,

- see if the number pattern is in an increasing or a decreasing order
- observe the difference between each number
- add or subtract to get the next number

Number order

When arranging numbers in order, determine if the series starts with the smallest or the biggest number.

Comparing numbers

You can replace these words with the operation signs.

The words 'greater than' and 'more than' mean addition (+).

The words 'smaller than' and 'less than' mean subtraction (–).

The word 'is' means equal sign (=).

Example:

____ *is* 3 *more than* 19.

____ = 3 + 19

Adding numbers

- Add the digits in the ones place first.
- If the answer is more than 9, you need to regroup the ones and add a one to the tens place.
- Add the digits in the tens place. Remember to add the one that was carried if there is one.

Subtracting numbers

- Subtract the digits in the ones place first.
- If subtraction is not possible in the ones place, regroup the tens and lend a ten (10) to the ones.
- Subtract the digits in the ones place.
- Then subtract the digits in the tens place.

Adding three numbers

- Make a ten first.
- Add the remaining numbers to get a sum.
- Add 10 to the sum to get the final answer.

Unit 13 Mental Calculations

Adding two-digit number and one-digit number mentally

- Regroup the two-digit number into tens and ones.
- Add the ones to get a sum.
- Add the sum to the tens to get the final answer.

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Adding two-digit number and tens mentally

- Regroup the two-digit number into tens and ones.
- Add the tens to get a sum.
- Add the ones to the sum to get the final answer.

Subtracting one-digit number from two-digit number mentally

- Regroup the two-digit number into tens and ones.
- Subtract the ones.
- Add the ones to the tens to get the final answer.

Subtracting tens from two-digit number mentally

- Regroup the two-digit number into tens and ones.
- Subtract the tens to get the result.
- Add the result to the ones to get the final answer.

Unit 14 Multiplication

Multiplication is repeated addition.

The sign '×' is used to represent multiplication in a number sentence.

Example:

$4 + 4 + 4 = 12$

$3 \times 4 = 12$

Unit 15 Division

Division is the opposite of multiplication.

Division allows us to find the equal number of items in each group. It also allows us to find the number of groups.

Unit 16 Time

There are two hands on the face of a clock. The short hand is called the hour hand. The long hand is called the minute hand.

We can see numbers 1 to 12 on the clock. There are 24 hours in a day so the hour and minute hands will go two rounds every day.

When the hour hand is at 2 and the minute hand is at 12, the time is read as 2 o'clock.

When the hour hand is between 2 and 3 and the minute hand is at 6, the time is read as half past 2.

Unit 17 Numbers within 100

Numerals	Words
50	fifty
60	sixty
70	seventy
80	eighty
90	ninety
100	one hundred

Adding two-digit number and two-digit number

- Add the digits in the ones place. If the sum is more than 10, regroup the ones and add a carry (1) in the tens place.
- Add the digits in the tens place. Add the carry if there is one.

Subtracting two-digit number from two-digit number

- Subtract the digits in the ones place. If it is not possible, you need to regroup the tens and lend a ten (10) to the ones.
- Subtract the digits in the tens place accordingly.

Unit 18 Money (Part 1)

The symbol for cents is ¢.
The symbol for dollars is $.

Ways of exchanging coins

1 ten-cent coin = 2 five-cent coins
1 twenty-cent coin = 4 five-cent coins
= 2 ten-cent coins
1 fifty-cent coin = 5 ten-cent coins
1 dollar coin = 10 ten-cent coins
= 5 twenty-cent coins
= 2 fifty-cent coins

Ways of exchanging notes

1 two-dollar note = 2 one-dollar coins
1 ten-dollar note = 10 one-dollar coins
= 5 two-dollar notes
= 2 five-dollar notes

Unit 19 Money (Part 2)

Adding in cents or in dollars

1. Add the digits in the ones place. If the sum is more than 10, add a carry in the tens place.
2. Add the digits in the tens place. Add the carry if there is one.

Subtracting in cents or in dollars

1. Subtract the digits in the ones place. If this is not possible, lend a ten (10) to the ones.
2. Subtract the digits in the tens place.

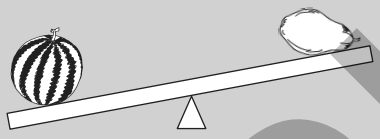
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10 MASS

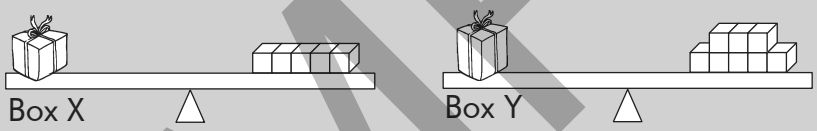
Examples

1. Which of the following fruit is heavier?



The **watermelon** is heavier than the papaya.

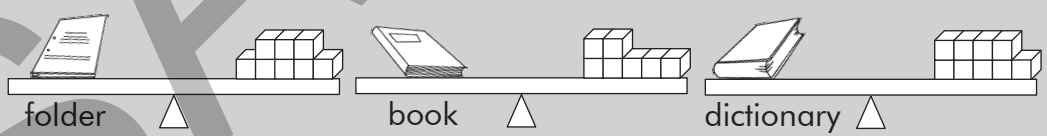
2. Study the pictures and fill in each blank with the correct answer.



(a) Box **Y** is heavier than Box **X**.

(b) Box **X** is lighter than Box **Y**.

3. Study the pictures carefully and fill in each blank with the correct answer.



(a) The mass of the file is about **8** units.

(b) The mass of the book is about **7** units.

(c) The mass of the dictionary is about **9** units.

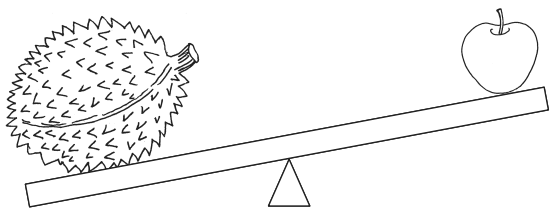
(d) Arrange these items in order. Begin with the lightest.

book, **file**, **dictionary**

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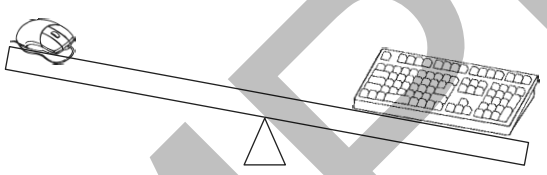
Fill in each blank with 'as heavy as', 'heavier than' or 'lighter than'.

1.



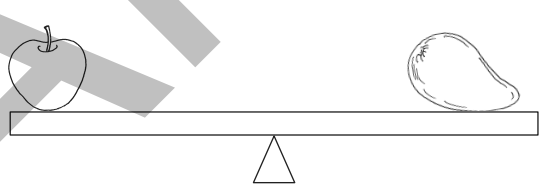
The apple is _____ the durian.

2.



The keyboard is _____ the computer mouse.

3.

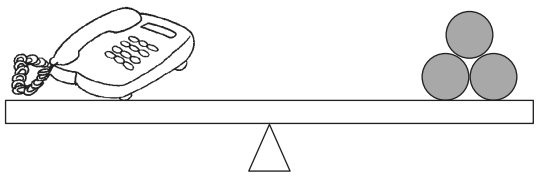


The apple is _____ the mango.

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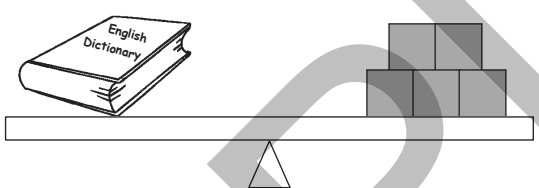
Fill in each blank with the correct answer.

4. Each ● stands for 1 unit.



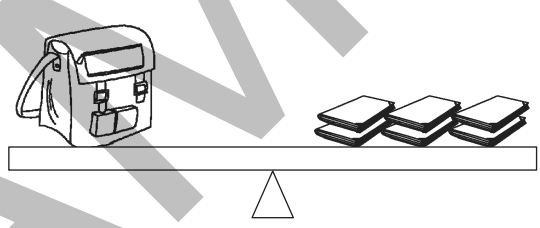
The mass of the telephone is about _____ units.

5. Each ■ stands for 1 unit.



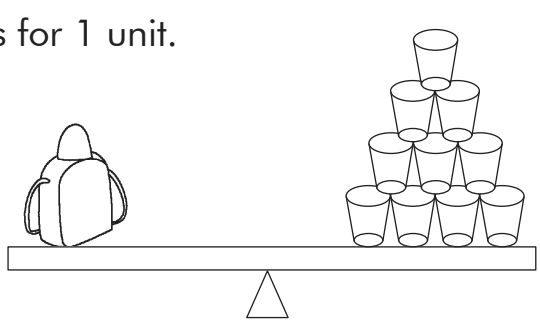
The mass of the dictionary is about _____ units.

6. Each ▬ stands for 1 unit.



The mass of the schoolbag is about _____ units.

7. Each ▯ stands for 1 unit.

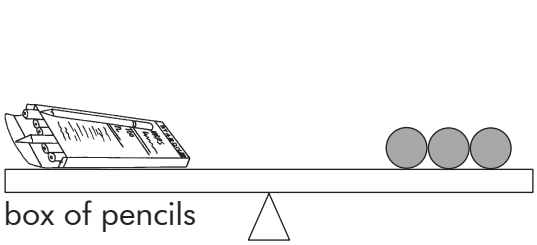


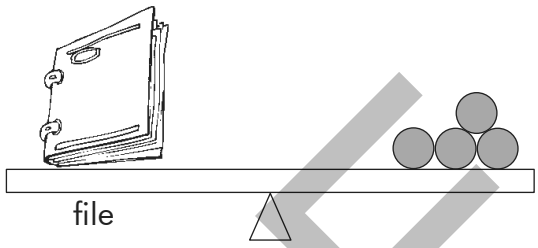
The mass of the water bottle is about _____ units.

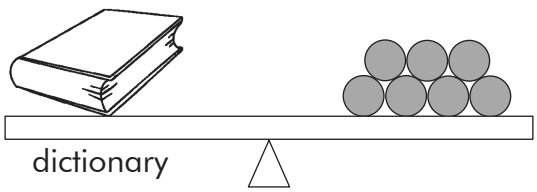
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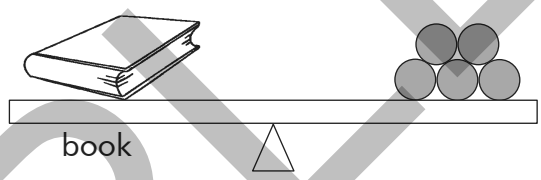
Fill in each blank with the correct answer.

Each ● stands for 1 unit.


box of pencils


file


dictionary


book

8. The mass of the file is about _____ units.

9. The mass of the dictionary is about _____ units.

10. The mass of the box of pencils is about _____ units.

11. The mass of the book is about _____ units.

12. The _____ is heavier than the book.

13. The _____ is lighter than the file.

14. The _____ is the heaviest.

15. The _____ is the lightest.

16. Arrange the four items in order. Begin with the lightest.

_____, _____, _____, _____

lightest

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SOLUTIONS
Learning Maths 1B

Unit 10: Mass

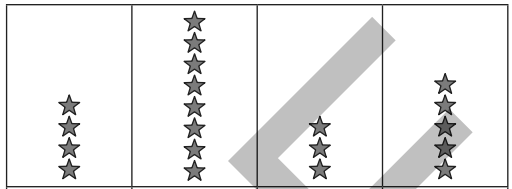
1. **lighter than**
   When the apple on the balance moves upwards, this shows it is lighter.
2. **heavier than**
   When the keyboard on the balance moves downwards, this shows it is heavier.
3. **as heavy as**
   When the balance is equal, this shows both the apple and mango have the same mass.
4. **3**
5. **5**
6. **6**
7. **10**
8. **4**
9. **7**
10. **3**
11. **5**
12. **dictionary**
    The mass of the book is 5 units and the mass of the dictionary is 7 units.
13. **box of pencils**
    The mass of the box of pencils is 3 units and the mass of the file is 4 units.
14. **dictionary**
15. **box of pencils**
16. **box of pencils**, **file**, **book**, **dictionary**
17. **7**
18. **5**
19. **4**
20. **2**
21. **kite**
    The mass of the doll is 4 units and the mass of the kite is 2 units.
22. **teddy bear**
    The mass of the teddy bear is 7 units and the mass of the toy car is 5 units.
23. **kite**
24. **teddy bear**
25. **doll**
26. **11**
27. **9**
28. **10**
29. **B**
    The mass of Basket C is 10 units and the mass of Basket B is 9 units.
30. **A**
    The mass of Basket A is 11 units and the mass of Basket C is 10 units.
31. **A**
32. **B**
33. **A**, **C**, **B**
34. **D**
35. **B**
36. **11**
37. **12**
38. **B**
    The mass of Bag C is 8 units and the mass of Bag B is 7 units.
39. **A**
    The mass of Bag D is 12 units, the mass of Bag A is 11 units and the mass of Bag C is 8 units.
40. **D**, **A**, **C**, **B**

Unit 11: Picture Graphs

1.

Monkey	● ● ● ● ● ●
Lion	● ● ●
Tiger	● ●
Giraffe	● ● ● ●
Parrot	● ●

2.



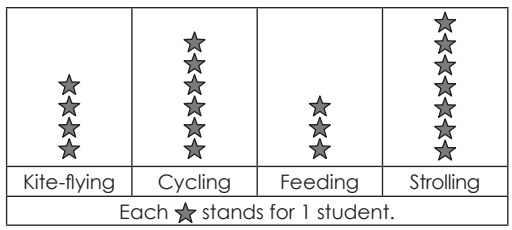
3.

Soccer	▲ ▲ ▲ ▲ ▲ ▲ ▲
Kite-flying	▲ ▲ ▲ ▲
Feeding	▲ ▲
Walking	▲ ▲ ▲ ▲ ▲

4. **4**
5. **5**
6. **spring roll**
7. **chicken wing**
8. 4 – 2 = **2**
9. 5 – 3 = **2**
10. **6**
11. **10**
12. **football**
13. **skipping**
14. **swimming**, **badminton**
15. 7 – 4 = **3**
16. 10 – 4 = **6**
17. 7 + 6 + 10 = 23
    23 + 6 + 4 = **33**
18. **4**
19. **2**
20. **ant**
21. **ladybird**
22. 7 – 4 = **3**
23. 5 – 2 = **3**
24. 4 + 5 + 7 = 16
    16 + 2 = **18**

Revision 1

1. **8**
2. **5**
3. **tumbler**
4. **pot**
5. 8 – 5 = **3**
6. 10 – 7 = **3**
7. **5**
8. **2**
9. **6**
10. **9**
11. **D**
12. **B**
13.



14. **heavier than**
    When the phone book on the balance moves downwards, this shows it is heavier.
15. **lighter than**
    When the glass on the balance moves upwards, this shows it is lighter.
16. **as heavy as**
    When the balance is equal, this shows both the water bottle and telephone have the same mass.
17. **heavier than**
    When the picture frame on the balance moves downwards, this shows it is heavier.
18. **8**
19. **12**
20. **3**

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