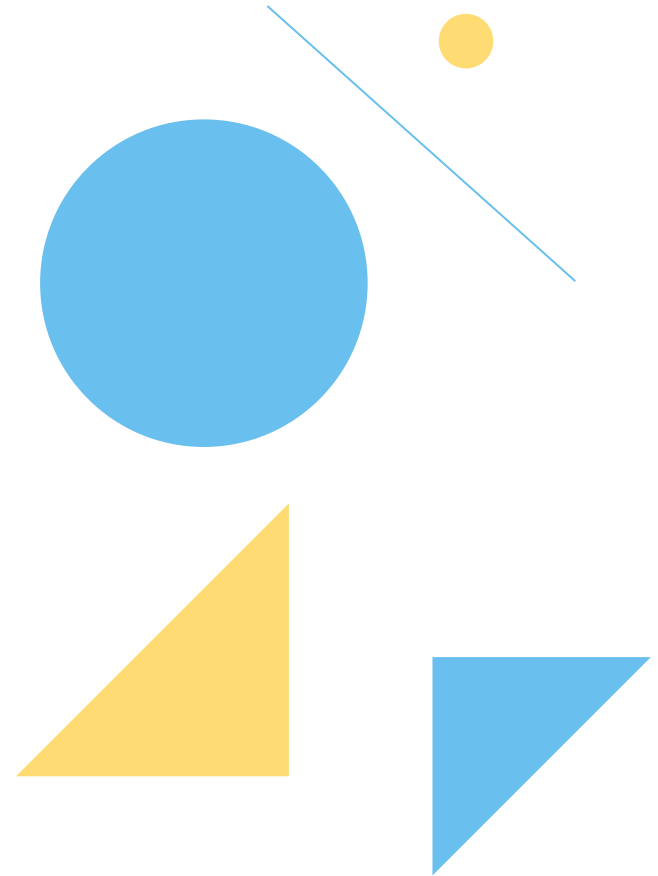


JICA Primary Mathematics Teacher Manual

B6



Ghana Education
Service (GES)



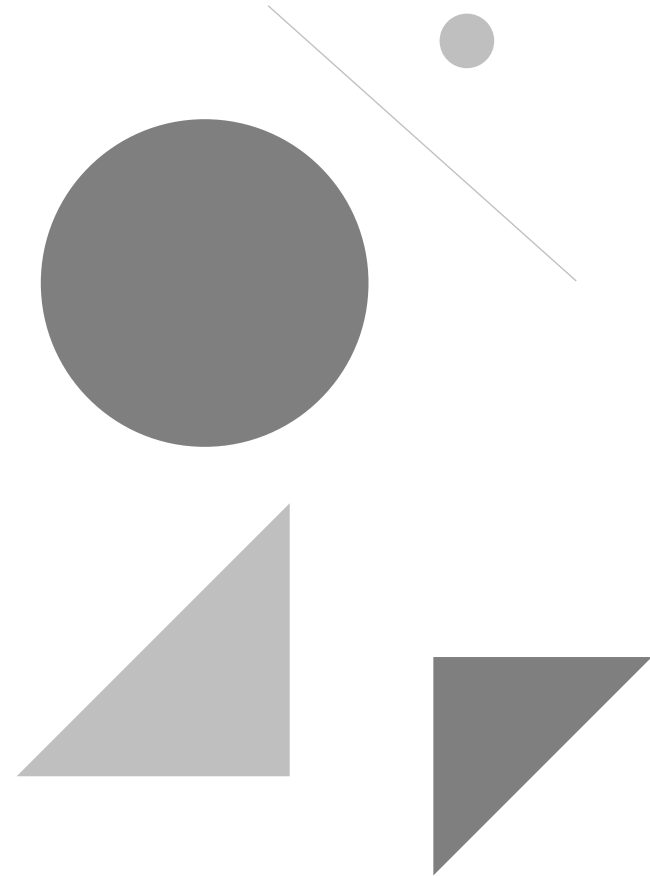
JICA

B6

Primary

Mathematics

Teacher Manual



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Acknowledgements

This teacher manual was developed by the GES, National STEM Resource Unit, in collaboration with mathematics specialists from Japan. Special thanks are extended to:

- Prof. Ernest Kofi Davis, Director-General of GES
- The National STEM Coordinator in charge of mathematics
- The teachers from the pilot schools

A special acknowledgement is given to the People and the Government of Japan for the partnership and support in funding and expertise through Japan International Cooperation Agency (JICA).

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ANNUAL REVIEW

JICA Mathematics Teacher Manual

April 2025

About the teacher manual

This teacher manual was developed by the National STEM Resource Unit in GES, in collaboration with the Japan International Cooperation Agency (JICA) to improve mathematics achievement in primary education. This teacher manual was piloted for two years (from March 2023 to July 2024) for validation, and the schools that used this manual improved their academic achievement.

Purpose of the teacher manual.

Two major challenges were identified through various reports and school visits before the development of this teacher manual.

1. Learner achievement in mathematics is low, and learners do not have enough time to work on exercises.
2. Learners are weaker in reading and writing compared to listening and speaking.

To address these challenges, the teacher manual was designed to give learners the following:

1. high-quality exercises with examples;
2. enough time to work on exercises; and
3. enough chance to read and write.

Design of teacher manual

There are two types of lessons in the teacher manuals.

1. Main lessons (learning new topics in the curriculum)
2. Review lessons (reviewing the previous four lessons)
*Lesson numbers are multiples of 5 for review lessons.

A week consists of four main lessons and one review lesson. There are 120 lessons in a year.

Download the teacher manual and training contents

You can download the pdf files of this teacher manual. There are training contents (videos) explaining the above contents on the National STEM Resource Unit website.

Download files or watch the training video from the QR code below.



Lesson structure of the teacher manual

The teacher manual is designed for one lesson per page.

1. Basic information about the lesson

- This section shows the lesson number, the corresponding curriculum page, the lesson objective, sample activities for the introduction, teaching tips, and teacher's notes.
- Teaching tips are general guidelines that apply to all lessons, while the teacher's notes are specific to each lesson.

2. Title and exercise (Part 1)

- The title is the lesson objective stated for learners.
- Tasks in Part 1 are labeled as [1], [1A], or [1B]. Tasks with answers written in black are examples.
- The first sub-task should be used to evaluate learners' understanding. If more than half of the learners cannot solve it, please re-explain it to the whole class.
- Answers are shown in pink and should be written on the board after learners have attempted the task.
- Each lesson is divided into two sections by a dotted line. Exercise Part 1 ends at the dotted line.

3. Exercise (Part 2)

- Tasks in Part 2 are labeled as [2], [2A], or [2B].
- [R] indicates a review task from the previous lesson. Skip this part if you don't have time.

4. Mental Maths

- This section provides practice in mental calculations. Learners are expected to memorise the addition facts up to 20 and their corresponding subtraction facts, as well as the multiplication tables up to 9×9 .

5. Homework

- If you wish to assign homework, you may use the tasks provided in this section.

1. Basic Information

Lesson	9 /120	Curriculum	5.1.1.1.5 (p.58) e.g.1,2
Teaching Tips	Have learners distribute exercise books before the lesson starts.		
Objective	Understand the difference between round up, round down and round off.		
Introduction (sample)	40,136	Round up	Round down
	to the nearest ten	40,140	40,130
	to the nearest hundred	40,100	40,200
		40,100	40,100

2. Title and Exercises (Part 1)

L9: Round up, down and off

Round up... 0-9 → 10

Round down... 0-9 → 0

Round off... 0,1,2,3,4 → 0

5,6,7,8,9 → 10

[1A] Fill in the blanks.

47,825	Round up	Round down	Round off
to the nearest ten	47,830	47,820	47,830
to the nearest hundred	47,900	47,800	47,800

[1B] Round off:

a) 234,649 to the nearest hundred. 234,600

b) 236,500 to the nearest thousand. 237,000

.....

[2] a) Round up 126,531 to the nearest ten. 126,540

b) Round down 35,781 to the nearest hundred. 35,700

c) Round off 14,650 to be multiples of 100s. 14,700

d) Round down 132,328 to be a multiple of 10s. 132,320

4. Mental Maths

<Mental Maths>

a) $60 + 70 = 130$ b) $90 + 70 = 160$ c) $120 - 90 = 30$

d) $130 - 60 = 70$ e) $130 - 90 = 40$

<Homework>

a) Round up 13,632 to the nearest ten. 13,640

b) Round down 34,795 to the nearest hundred. 34,700

c) Round off 253,499 to the nearest thousand. 253,000

5. Homework

e) Round up 132,401 to be a multiple of 100s. 132,500

f) Round off 236,499 to be a multiple of 1000s. 236,000

[R] Order from big to small numbers.

a) 86,280 86,300 87,090 87,020

87,090 87,020 86,300 86,280

b) 21,394 21,349 21,439 21,493

3. Exercise (Part 2)

How to conduct the main lesson

	Procedure	Teacher manual
Introduction (15 min.)	- Explain today's topic. - The introduction is a sample activity related to today's lesson objective. - See this part if it is written "as shown on the board". Let learners copy it within the introduction time. *Do not exceed 15 minutes to maximise the time for exercise. *You can do group work if necessary.	
Exercise Part 1 (15 min. + 5 min.)	<Exercise (15 min.)> This is a speech bubble. Writes all the black parts except speech bubbles before the dotted line. - Have learners copy all the content into their exercise books and work on them independently. Look around to support learners. <Peer marking (5 min.)> Write the pink parts (answers). - Have learners swap their exercise books and conduct peer marking.	
Exercise Part 2 (15 min. + 5 min.)	- Do it in the same way as Part 1 for the rest of the exercises. - The task shown in [R] is a revision task from the previous day. - Some questions are written as "Answer as [1]" to save time. This means the question is the same as [1]. *Skip [R] if you don't have enough time.	
Mental Maths (5 min.)	- Give mental maths tasks verbally (don't write them). - Let learners write the tasks and answers in their exercise books. - Write the tasks and answers on the board. - Let learners conduct peer marking. - Let learners stand up and practice where they made mistakes. Let learners repeat them 5 times verbally if you have time.	

Lesson flow

The diagram shows the lesson flow.

In the introduction, the teacher provides the most support. As the lesson progresses to Exercise Part 1 and Part 2, learners are expected to work more independently. Exercise Part 1 has fewer tasks than Part 2, allowing more time for explanation.



How to conduct the review lesson

	Procedure	Teacher manual
Test (30 min.)	- Write all the black parts. - Have learners copy all the contents into their exercise books and work on them independently for 30 minutes.	
Correction (25 min.)	- Write the pink parts. - Let learners conduct peer marking. - Give feedback for some of the tasks and let them do the correction. - Group work is encouraged.	
Mental Maths (5 min.)	Do it in the same way as the main lesson.	

FAQ

Time Management and Lesson Coverage

Q. What if learners cannot finish the exercises within the expected time?

A. Please follow the suggested time limits. The exercises are designed for different levels. For example, if there are six questions:

1. fast learners may finish all;
2. average learners may finish three or four;
3. slow learners may finish one or two.

The lesson design already considers this variation.

Q. How should I handle lessons that take longer than the suggested time but are crucial for understanding?

A. If you are ahead of the scheme of work, repeat the lesson that learners could not solve after a while. If you are behind it, conduct remedial lessons.

Q. How should I support learners who are always unable to finish?

A. Encourage them to complete at least one or two tasks. Provide remedial lessons if possible.

Q. What should I do after completing the teacher manual?

A. Review lessons that learners found difficult. The manual covers all topics in 120 hours, fewer than the total lessons available, so you can use extra time for revision.

Q. What if I cannot finish the introduction within 15 minutes?

A. Prepare carefully to avoid this. Over-explaining is not effective. Instead, let learners attempt Exercise 1 first, then explain it so they discover the key points themselves.

Q. How should I handle lessons that take longer than planned but are important for understanding?

A. If you are ahead of schedule, repeat the lesson later. If you are behind, provide remedial lessons.

Lesson Implementation

Q. What is the role of the teacher?

A. Please keep in mind these three points:

1. Write content clearly and correctly on the board.
2. Allow enough time for learners to do exercises instead of over-explaining.
3. Give feedback to support learners.

Q. Can I change or select the tasks if an exercise seems too easy or too difficult?

A. No. Please complete all exercises as they are (unless there is a mistake). If tasks are too easy, add some extra ones. If they are too difficult, provide hints to support learners.

Q. Which part of the board should learners copy?

A. Learners should copy everything written on the board. This also helps them practise writing sentences.

Q. When should learners copy the content of the introduction, which is shown as “as shown on the board”?

A. Learners should copy it during the introduction time, before you explain. It will be used in some of the exercises.

Q. What should I do after writing the black parts?

A. Check learners' answers to the first sub-task. This task works as a quick evaluation of the lesson. If more than half of the learners cannot solve it, re-explain the concept using that sub-task.

Q. Why are some answers written in black?

A. They serve as hints or examples to help learners solve other tasks. Please write the pink parts only after 15 minutes.

Q. Should I write the lesson objective?

A. No. The lesson objective is for teachers and contains difficult terms that learners do not need to know. It also takes time to write. The lesson title works as the objective for learners.

Q. What should I do if I want to do pair or group work?

A. Pair or group work can be done during the introduction. The introduction is a sample activity that you may adjust as needed. Peer marking is also a form of pair work, as learners can discuss solutions. In review lessons, group work is encouraged to support understanding.

Q. Why do there seem to be so many tasks?

A. This teacher manual includes many tasks to keep all learners engaged and ensure inclusivity. All exercises should be presented. Fast learners can complete all of them, while slower learners are not required to finish every task. Please guide learners according to their level.

Q. How should I organise the board?

Ideally, the final board work should match the teacher manual. This makes it clear, even to someone who did not attend the lesson, what the learners have studied. However, if there is not enough space, erase the left half during Exercise Part 2.

Mental Maths Instructions

Q. Why should I not write mental maths questions at first?

A. Mental maths is designed to help learners understand number sentences by listening.

Q. Why do learners have to stand up during correction time?

A. Standing makes it easy for the teacher to see who is practising. Learners who make no mistakes do not have to stand.

Q. How can I ensure that learners are effectively memorising answers during correction time?

A. Erase the answers from the board (but keep the tasks). Learners should read the tasks, not just copy answers from their exercise books. Say the correct answer aloud and have learners repeat it five times.

Scheme of Work

It is recommended to **write the date of the lesson in the teacher manual**. If you skip the review lesson, please write "skipped". This will help you teach next year or to show the progress to the headteacher or SISO.

Lesson	1 /120	Curriculum	B6.1.1.1.1 (p.114) e.g.1,2
Teaching Tips	Divide the board into two parts and copy the teacher manual as it is. Once learners have copied it, erase the left part to write the right part of the teacher manual.		
Objective	Be able to model the numbers by multi-base diagrams.		
Introduction (sample)	- Draw multi-base diagram as shown on the board. - Show numbers (e.g. 24,000 321,000) using a multi-base material and explain the relationship between the multi-base material and the diagrams. - Show collections of objects and let learners estimate the number.		
Teacher's Note	- Simplify multi-base materials when drawing them because drawing flat with 10×10 grid takes time. - Make a multi-base material with a manila paper if you don't have blocks. - Let learners read the comma (e.g. 35,000) as thousand (1000 separator).		

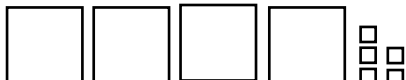
<Mental Maths>

- a) $100 - 70 = 30$ b) $90 + 20 = 110$ c) $70 + 40 = 110$
d) $110 - 20 = 90$ e) $110 - 50 = 60$

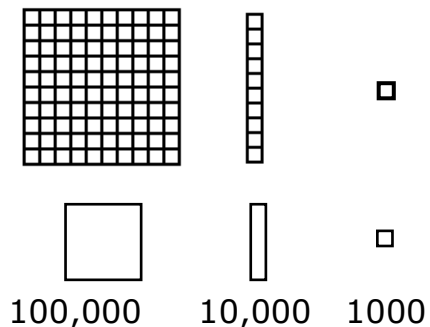
<Homework>

Answer as [2B].

a)  38,000

b)  405,000

L1: Model numbers up to 1,000,000



[1] Model the numbers.

a) 32,000



b) 54,000



c) 235,000



d) 203,000

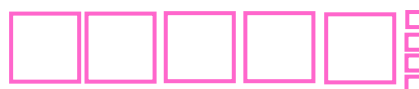


[2A] Answer as [1].

a) 46,000

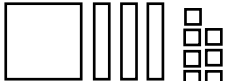


b) 504,000



[2B] Write the numbers represented.

a)  23,000

b)  137,000

c)  305,000

[R] Model the numbers.

a) 42,000 

b) 324,000 

Lesson	2 /120	Curriculum	B6.1.1.1.1 (p.114) e.g.3
Teaching Tips	Encourage learners to write in their exercise books. The more they write, the better their writing skills will become.		
Objective	Be able to model the numbers by money up to ₦100,000.		
Introduction (sample)	- Show learners teacher-made ₦10 and ₦100 notes and ask how many notes are needed to make e.g. ₦130, ₦1030. - Ask how many notes are needed to make ₦4,500, ₦230,050. Write the amount as shown on the board.		
Teacher's Note	Utilise the experience of money. It will help learners grasp the idea of base-ten number system.		

<Mental Maths>

- a) $100 - 80 = 20$ b) $80 + 30 = 110$ c) $80 + 40 = 120$
d) $110 - 30 = 80$ e) $110 - 60 = 50$

<Homework>

How many:

- a) tens make 100,000? **10,000**
b) thousands make 1,000,000? **1,000**
c) tens make 10,000,000? **1,000,000**

*This dotted line separates exercise part 1 and 2.
Write all the black parts up to this line in exercise part 1.*

L2: Model numbers with money

$$₦45,000 = 450 \times ₦100$$

$$₦230,050 = 2300 \times ₦100 + 5 \times ₦10.$$

[1A] How much is it?

- a) $260 \times ₦100$ **₦26,000**
b) $3,405 \times ₦100 + 9 \times ₦10$ **₦340,590**

[1B] Model the amount
by ₦10 or ₦100.

- a) ₦240,000 **$2,400 \times ₦100$**
b) ₦420,560 **$4,205 \times ₦100 + 6 \times ₦10$**
c) ₦6,000,000 **$60,000 \times ₦100$**

[2A] Answer as [1B].

- a) ₦870, 250 **$8,702 \times ₦100 + 5 \times ₦10$**
b) ₦1,000,000 **$10,000 \times ₦100$**

[2B] How many:

- a) thousands make 1,000,000? **1,000**
b) hundreds make 1,000,000? **10,000**
c) thousands make 10,000,000? **10,000**
d) hundreds make 10,000,000? **100,000**

[R] Model the numbers
when a cube is 1,000.

a) 35,000



b) 248,000



c) 402,000



Focus on the number of zeros.

Lesson	5 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. - After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L1, [2]: L2, [3]: L3, [4]: L4, [5]: L4.		

<Mental Maths>

- a) $70 + 50 = 120$ b) $50 + 60 = 110$ c) $80 + 60 = 140$
d) $110 - 90 = 20$ e) $120 - 50 = 70$

<Homework>

*No homework.

L5: Review

[1] Model the numbers
when a cube is 1000.

a) 27,000



b) 403,000



[2] Model the amount by ₡10 or ₡100.

a) ₡800,000 $8,000 \times ₡100$

b) ₡650,030 $6,500 \times ₡100 + 3 \times ₡10$

[3] In 6,427,813,000,
what is the place value of:

a) 2? $20,000,000$

b) 6? $6,000,000,000$

which digit is in the:

c) millions place? 7

d) hundred millions place? 4

[4] Write the words in a number.

a) Thirty-five million two thousand
 $35,002,000$

b) Four billion and eight million
 $4,008,000,000$

[5] Write the numbers in words.

a) 54,200,000

$Fifty-four million, two hundred thousand$

b) 429,000

$Four hundred and twenty-nine thousand$

Lesson	6 /120	Curriculum	B6.1.1.1.2 (p.115) e.g.2; B6.1.1.1.3 (p.116) e.g.1 B6.1.1.1.6 (p.119)
Teaching Tips	When a learner presents, repeat exactly what they said. Do not summarise or rephrase.		
Objective	Be able to expand numbers up to 10 billion.		
Introduction (sample)	- Make groups of four and decide the order in each group. Explain the following rule: Starting from the number the teacher says, each learner takes turns saying the next number in order. Continue for three rounds. - Start at 1 million and increase by 10,000 each time. - Start at 3 million and decrease by 10,000 each time. - Start at 5 million and increase by 5,000 each time. - Show how to expand numbers as shown on the board.		
Teacher's Note	It is important to understand the relationship between the position of numbers and which place value changes. E.g. Moving one up decreases 100,000 in the table in [2B].		

<Mental Maths>

- a) $80 + 50 = 130$ b) $60 + 60 = 120$ c) $90 + 60 = 150$
 d) $120 - 30 = 90$ e) $120 - 60 = 60$

<Homework>

Answer using the table in [2B].

- a) above 420,000? **320,000**
 b) below 310,000? **410,000**
 c) to the left of 320,000? **315,000**

L6: Expand numbers up to 10 billion

1,002,030,400

$$= 1,000,000,000 \times 1 + 1,000,000 \times 2 + 10,000 \times 3 + 100 \times 4$$

[1] Expand the numbers.

a) 74,000,000

$$= 10,000,000 \times 7 + 1,000,000 \times 4$$

b) 601,400,000

$$= 100,000,000 \times 6 + 1,000,000 \times 1 + 100,000 \times 4$$

c) 1,000,020,050

$$= 1,000,000,000 \times 1 + 10,000 \times 2 + 10 \times 5$$

d) 3,060,000,000

$$= 1,000,000,000 \times 3 + 10,000,000 \times 6$$

[2A] Answer as [1].

a) 54,000,030

$$= 10,000,000 \times 5 + 1,000,000 \times 4 + 10 \times 3$$

b) 6,000,090,000

$$= 1,000,000,000 \times 6 + 10,000 \times 9$$

[2B] Answer the questions.

210,000	215,000	220,000
310,000	315,000	320,000
410,000	415,000	420,000

What number is:

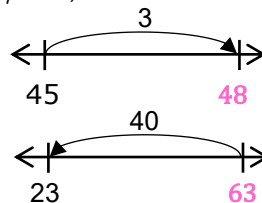
- a) above 315,000? **215,000**
 b) below 320,000? **420,000**
 c) to the right of 215,000? **220,000**

[R] Fill in the blanks.

- a) 30,000 40,000 50,000 **60,000**
 b) 90,000 **100,000** 110,000 120,000
 c) 500,000 600,000 **700,000** 800,000

Give [R] if you have time; skip it if not.

Lesson	7 /120	Curriculum	B6.1.1.1.4 (p.117) e.g.1
Teaching Tips	While you are writing on the board, let learners copy it in their exercise books.		
Objective	Understand relative size of numbers by finding the start or end values.		
Introduction (sample)	- Draw ₦215 (two ₦100, one ₦10 and one ₦5 notes). Confirm that if you add ₦20, it does not affect ones and hundreds places. If you add ₦300, it does not affect tens and ones places. - Draw a number line to fill in the blank. a) <u>480,000</u> is 30,000 more than 450,000. b) 230,000 is 400,000 less than <u>630,000</u>. *Omit the last 3 digits when drawing a number line.		
Teacher's Note	- Relative size means comparing a number to another one and find the difference. - Draw number lines so that they can see the relationship visually. A right arrow shows "more" and a left arrow shows "less".		



<Mental Maths>

- a) $40 + 70 = 110$ b) $70 + 70 = 140$ c) $120 - 70 = 50$
d) $130 - 40 = 90$ e) $130 - 70 = 60$

<Homework>

Answer as [1].

- a) 270,000 is 30,000 more than 240,000.
b) 370,000 is 500,000 less than 870,000.
c) 650,000 is 400,000 more than 250,000.
d) 420,000 is 50,000 less than 470,000.

L7: Find relative size of numbers (1)

[1] Fill in the blanks.

- a) 570,000 is 30,000 more than 540,000.
- b) 320,000 is 40,000 less than 360,000.
- c) 840,000 is 500,000 more than 340,000.
- d) 280,000 is 200,000 less than 480,000.

Let learners hide the last 3 digits.

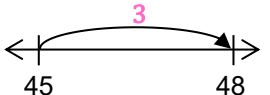
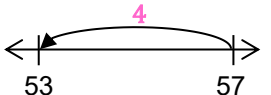
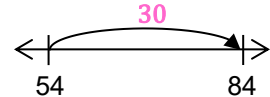
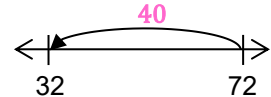
[2] Answer as [1].

- a) 460,000 is 40,000 more than 420,000.
- b) 710,000 is 50,000 less than 760,000.
- c) 810,000 is 300,000 more than 510,000.
- d) 360,000 is 500,000 less than 860,000.

- e) 540,000 is 300,000 more than 240,000.
- f) 320,000 is 400,000 less than 720,000.

[R] Expand the numbers.

- a) 53,000,000
 $= 10,000,000 \times 5 + 1,000,000 \times 3$
- b) 300,070,000
 $= 100,000,000 \times 3 + 10,000 \times 7$
- c) 1,000,100,010
 $= 1,000,000,000 \times 1 + 100,000 \times 1 + 10 \times 1$

Lesson	8 /120	Curriculum	B6.1.1.1.4 (p.117) e.g.1
Teaching Tips	Have learners repeat what you said to check their understanding.		
Objective	Understand relative size of numbers by finding the differences.		
Introduction (sample)	Fill in the blanks. Draw a number line to show the answers. a) 480,000 is <u>30,000</u> more than 450,000. b) 530,000 is <u>40,000</u> less than 570,000.   c) 840,000 is <u>300,000</u> more than 540,000. d) 320,000 is <u>400,000</u> less than 720,000.  		
Teacher's Note	Draw number lines so that they can see the relationship visually. The bigger number comes right on the number line.		

<Mental Maths>

- a) $50 + 70 = 120$ b) $80 + 70 = 150$ c) $120 - 80 = 40$
d) $130 - 50 = 80$ e) $130 - 80 = 50$

<Homework>

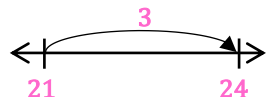
Answer as [1].

- a) 360,000 is 40,000 more than 320,000.
b) 520,000 is 60,000 less than 580,000.
c) 560,000 is 200,000 more than 360,000.
d) 490,000 is 300,000 less than 790,000.

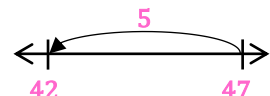
L8: Find relative size of numbers (2)

[1] Fill in the blanks.

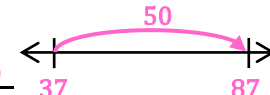
a) 240,000 is 30,000 more than 210,000.



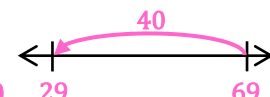
b) 420,000 is 50,000 less than 470,000.



c) 870,000 is 500,000 more than 370,000.

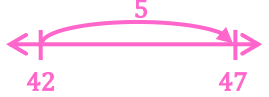


d) 290,000 is 400,000 less than 690,000.

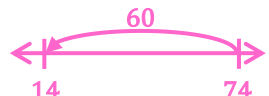



[2] Answer as [1].

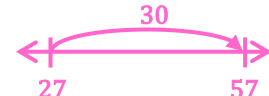
a) 470,000 is 50,000 more than 420,000.



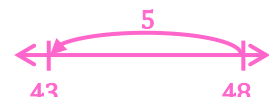
b) 140,000 is 600,000 less than 740,000.



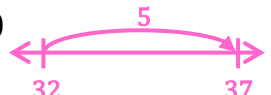
c) 570,000 is 300,000 more than 270,000.



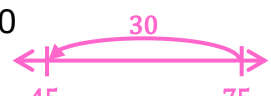
d) 430,000 is 50,000 less than 480,000.



e) 370,000 is 50,000 more than 320,000.



f) 450,000 is 300,000 less than 750,000.



[R] Answer as [1].

a) 380,000 is 40,000 more than 340,000.

b) 730,000 is 60,000 less than 790,000.

c) 250,000 is 400,000 less than 650,000.

c) to f) are from yesterday's contents.

Lesson	10 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L6, [2]: L7 & L8, [3]: L9.		

<Mental Maths>

- a) $30 + 80 = 110$ b) $60 + 80 = 140$ c) $90 + 80 = 170$
d) $140 - 50 = 90$ e) $140 - 80 = 60$

<Homework>

*No homework.

L10: Review

[1] Expand the numbers.

a) 600,300,070

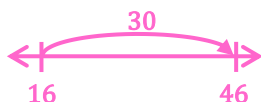
$$= 100,000,000 \times 6 + 100,000 \times 3 + 10 \times 7$$

b) 4,000,300,000

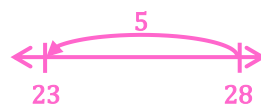
$$= 1,000,000,000 \times 4 + 100,000 \times 3$$

[2] Fill in the blanks.

a) 460,000 is 300,000 more than 160,000.



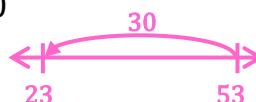
b) 230,000 is 50,000 less than 280,000.



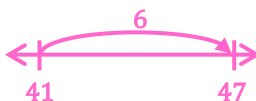
c) 370,000 is 70,000 more than 300,000.



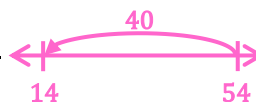
d) 230,000 is 300,000 less than 530,000.



e) 470,000 is 60,000 more than 410,000.



f) 140,000 is 400,000 less than 540,000.



[3] Order from big to small numbers.

a) 129,861 139,761 148,716 128,984

148,716 139,761 129,861 128,984

b) 9,000,010 2,009,100 2,009,099

9,000,010 2,009,100 2,009,099

Lesson	12 /120	Curriculum	B6.1.1.1.5 (p.118) e.g.2
Teaching Tips	Organise the board so that others can understand the lesson content just by looking at it.		
Objective	Be able to solve addition and subtraction by estimation.		
Introduction (sample)	Show how to solve addition and subtraction by estimation. Round off so that only the first digit remains. a) $4,320 + 5,601 \rightarrow 4,000 + 6,000 = 10,000$ b) $6,871 - 3,108 \rightarrow 7,000 - 3,000 = 4,000$ c) $67,024 + 49,032 \rightarrow 70,000 + 50,000 = 120,000$ d) $78,024 - 29,532 \rightarrow 80,000 - 30,000 = 50,000$.		
Teacher's Note	- Let learners point out which number to round off (the second digit in this lesson). - Calculation by estimation is useful in daily life.		

Let learners calculate mentally.

L12: Estimate sums and differences

[1] Estimate the answer by rounding off.

a) $520 + 280$ b) $624 - 371$

$500 + 300 = 800$ $600 - 400 = 200$

c) $3,620 + 5,310$

$4,000 + 5,000 = 9,000$

d) $81,070 - 18,914$

$80,000 - 20,000 = 60,000$

e) $413,280 + 275,620$

$400,000 + 300,000 = 700,000$

[2A] Answer as [1].

a) $38,742 + 48,923$

$40,000 + 50,000 = 90,000$

b) $40,132 - 18,990$

$40,000 - 20,000 = 20,000$

c) $259,200 + 523,090$

$300,000 + 500,000 = 800,000$

d) $381,289 - 131,423$

$400,000 - 100,000 = 300,000$

<Mental Maths>

a) $50 + 80 = 130$ b) $80 + 80 = 160$ c) $30 + 90 = 120$

d) $140 - 70 = 70$ e) $150 - 60 = 90$

<Homework>

Answer as [2B].

a) $236 + 576$

b) $865 - 258$

$200 + 600 = 800$

$900 - 300 = 600$

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

$$\begin{array}{r} 5 \quad 15 \\ 8 \quad 6 \quad 5 \\ - 2 \quad 5 \quad 8 \\ \hline 6 \quad 0 \quad 7 \end{array}$$

[2B] Estimate the answer by rounding off, then find the correct answer.

$475 - 159$

$500 - 200 = 300$

$$\begin{array}{r} 6 \quad 15 \\ 4 \quad 7 \quad 5 \\ - 1 \quad 5 \quad 9 \\ \hline 3 \quad 1 \quad 6 \end{array}$$

[R] a) Round up 128,641 to

be a multiple of 10s. $128,650$

b) Round down 135,289 to

be a multiple of 100s. $135,200$

c) Round off 341,611 to

be a multiple of 1000s. $342,000$

Lesson	13 /120	Curriculum	B6.1.1.2.1 (p.119) e.g.1,2
Teaching Tips	If more than half of the learners cannot solve the first task, explain how to solve it using it.		
Objective	Be able to convert Hindu Arabic and Roman numerals up to 100 and vice versa.		
Introduction (sample)	- Let learners write Roman numerals as shown on the board. - Explain the rule below. - I = 1, V = 5, X = 10, L = 50, C = 100 - IV means 1 before V (five) which is 4, VI means 1 after V which is 6. - IX means 1 before X (ten) which is 9, XI means 1 after X which is 1. - XL means 10 before L (fifty) which is 40, LX means 10 after L which is 60. - XC means 10 before C (hundred) which is 90.		
Teacher's Note	- Learners need to remember the meaning of I=1, V=5, X=10, L=50, C=100. All the other numbers are shown in the combination of the five numbers. - Divide the Roman numerals to tens and ones.		

<Mental Maths>

- a) $40 + 90 = 130$ b) $70 + 90 = 160$ c) $150 - 70 = 80$
d) $160 - 70 = 90$ e) $170 - 80 = 90$

<Homework>

Answer as [1].

- a) XVI = **16** b) XLIX = **49**
c) CLXXVII = **177** d) CCXCI = **291**

Answer as [2B].

- a) 29 = **XXIX** b) 68 = **LXVIII**
c) 156 = **CLVI** d) 242 = **CCXLII**

L13: Understand Roman numerals

I = 1, II = 2, III = 3, IV = 4, V = 5,
VI = 6, VII = 7, VIII = 8, IX = 9,
X = 10, XL = 40, L = 50, LX = 60,
XC = 90, C = 100, CC = 200

[1] Write in numbers.

- a) XIV = **14** b) XX = **20**
c) XXVI = **26** d) XLII = **42**
e) LIX = **59** f) LXX = **70**
g) CXV = **115** h) CCXX = **220**

.....

[2A] Answer as [1].

- a) XLIV = **44** b) LXIII = **63**
c) CXCIX = **199** d) CCV = **205**

[2B] Write in Roman numerals.

- a) 34 = **XXXIV** b) 48 = **XLVIII**
c) 51 = **LI** d) 72 = **LXXII**
e) 185 = **CLXXXV** f) 304 = **CCCIV**

[R] Estimate the answer by rounding off.

- a) $40,132 + 58,923$
 $40,000 + 60,000 = 100,000$
b) $250,120 + 710,410$
 $300,000 + 700,000 = 1,000,000$
c) $97,362 - 20,199$
 $100,000 - 20,000 = 80,000$
d) $561,889 - 123,357$
 $600,000 - 100,000 = 500,000$

Lesson	14 /120	Curriculum	B6.1.1.2.2 (p.120) e.g.3
Teaching Tips	Have learners copy everything from the board into their exercise books.		
Objective	Be able to add and subtract Roman numerals.		
Introduction (sample)	- Show how to add and subtract Roman numerals as shown on the board. - Convert back to Roman numerals is necessary.		
Teacher's Note	The basic idea is to convert the Roman numerals to Arabic numerals. It is helpful for learners to write Arabic numerals under the Roman numerals.		

<Mental Maths>

- a) $50 + 90 = 140$ b) $80 + 90 = 170$ c) $150 - 80 = 70$
d) $160 - 80 = 80$ e) $170 - 90 = 80$

<Homework>

Solve:

- a) $XVI + IV = XX$
b) $XXII - XVI = VI$
c) $XLI + LV = XCVI$
d) $LXIV - XLI = XXIII$

L14: Add and subtract Roman numerals

$$\begin{array}{rcl} XII + IV & = & XVI \\ 12 \quad 4 \quad 16 \end{array} \quad \begin{array}{rcl} XXIV - IX & = & XV \\ 24 \quad 9 \quad 15 \end{array}$$

[1] Solve:

- a) $VII + IV = XI$ b) $XVI - VII = IX$
 $\quad 7 \quad 4 \quad 11 \quad \quad 16 \quad 7 \quad 9$
c) $XXV + XIII = XXXVIII$
 $\quad 25 \quad 13 \quad 38$
d) $XXX - XIV = XVI$
 $\quad 30 \quad 14 \quad 16$
e) $LX - XXVI = XXXIV$
 $\quad 60 \quad 26 \quad 34$

.....

[2] Solve:

- a) $XV + VIII = XXIII$
 $\quad 15 \quad 8 \quad 23$
b) $XX - XI = IX$
 $\quad 20 \quad 11 \quad 9$
c) $XXII + L = LXXII$
 $\quad 22 \quad 50 \quad 72$
d) $LXXIV - XL = XXXIV$
 $\quad 74 \quad 40 \quad 34$
e) $LXI + XXXIV = XCV$
 $\quad 61 \quad 34 \quad 95$

f) $XCIX - LVII = XLII$
 $\quad 99 \quad 57 \quad 42$

[R] Write in Roman numerals.

- a) $49 = XLIX$ b) $51 = LI$
c) $172 = CLXXII$ d) $206 = CCVI$

Lesson	15 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L11, [2]: L12, [3]: L13, [4]: L13, [5]: L14.		

<Mental Maths>

a) $60 + 90 = 150$ b) $90 + 90 = 180$ c) $150 - 90 = 60$
d) $160 - 90 = 70$ e) $180 - 90 = 90$

<Homework>

*No homework.

L15: Review

- [1]
- a) Round up 134,583 to the nearest ten. **134,590**
- b) Round down 252,681 to the nearest hundred. **252,600**
- c) Round off 148,500 to the nearest thousand. **149,000**
- [2] Estimate the answer by rounding off.
- a) $58,720 + 61,240$
 $60,000 + 60,000 = 120,000$
- b) $91,290 - 28,714$
 $90,000 - 30,000 = 60,000$
- c) $518,340 + 173,820$
 $500,000 + 200,000 = 700,000$
- d) $768,520 - 392,310$
 $800,000 - 400,000 = 400,000$
- [3] Write in numbers.
- a) XXVI = **26** b) XLV = **45**
- c) CXCIX = **199**
- [4] Write in Roman numerals.
- a) $36 = \text{XXXVI}$ b) $154 = \text{CLIV}$
- c) $300 = \text{CCC}$

[5] Solve:

- a) VI + IV = **X**
6 4 10
- b) XXIV + XV = **XXXIX**
24 15 39
- c) XL - XXIV = **XVI**
40 24 16

Lesson	16 /120	Curriculum	B6.1.1.2.2 (p.120) e.g.3
Teaching Tips	Divide the board into two parts and copy the teacher manual as it is. Once learners have copied it, erase the left part to write the right part of the teacher manual.		
Objective	Be able to find the missing numbers in Roman numerals.		
Introduction (sample)	- Show how to find unknown with Roman numerals. a) $XX + \underline{XV} = XXXV$ b) $XXVII - \underline{XIII} = XIV$ 20 15 35 27 13 14 c) $\underline{VI} + XLIV = L$ d) $C - \underline{LXV} = XXXV$ 6 44 50 100 65 35 - You need to convert the answer to Roman numerals.		
Teacher's Note	- The basic idea is to convert the Roman numerals to Arabic numerals. - Use guess and check method to solve the question.		

<Mental Maths>

- a) $4 \times 4 = 16$ b) $4 \times 7 = 28$ c) $5 \times 5 = 25$
 d) $5 \times 8 = 40$ e) $6 \times 7 = 42$

<Homework>

Answer as [1].

- a) $\underline{VI} + XVI = XXII$
 b) $XXVI - \underline{XX} = VI$
 c) $LXIV + \underline{XXIII} = LXXXVII$
 d) $\underline{XCVI} - LV = XLI$

L16: Add and subtract Roman numerals (2)

[1] Fill in the blanks.

- a) $X + \underline{V} = XV$
10 5 15
- b) $XX - \underline{X} = X$
20 10 10
- c) $\underline{X} + XL = L$
10 40 50
- d) $LV - \underline{XXXV} = XX$
55 35 20
- e) $\underline{XL} + LX = C$
40 60 100

.....

[2] Fill in the blanks.

- a) $XI + \underline{XV} = XXVI$
11 15 26
- b) $XXXIV - \underline{XX} = XIV$
34 20 14
- c) $\underline{XXV} + XXV = L$
25 25 50
- d) $XXX - \underline{III} = XXVII$
30 3 27
- e) $\underline{XX} + LXX = XC$
20 70 90

- f) $C - \underline{X} = XC$
100 10 90

[R] Solve:

- a) $XVIII + XLII = \underline{LX}$
18 42 60
- b) $XL - XV = \underline{XXV}$
40 15 25
- c) $LX + XXIX = \underline{LXXXIX}$
60 29 89
- d) $XCIX - XLV = \underline{LIV}$
99 45 54

Lesson	17 /120	Curriculum	B6.1.1.3.1 (p.121) e.g.1,4
Teaching Tips	Encourage learners to write in their exercise books. The more they write, the better their writing skills will become.		
Objective	Understand how to find prime factorisation using a factor tree and draw a Venn diagram.		
Introduction (sample)	- Show how to prime factorise $20=2 \times 2 \times 5$, $24=2 \times 2 \times 2 \times 3$, $36=2 \times 2 \times 3 \times 3$ by factor trees. - Draw a Venn diagram to find the factors of 24 and 36.		
Teacher's Note	In this teacher manual, the Venn diagram by listing the factors. From B6, it is changed to list prime factors.		

<Mental Maths>

- a) $4 \times 5 = 20$ b) $4 \times 8 = 32$ c) $5 \times 6 = 30$
d) $5 \times 9 = 45$ e) $6 \times 8 = 48$

<Homework>

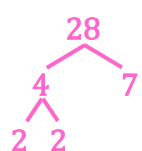
Answer as [1A].

- a) 12. $2 \times 2 \times 3$
b) 24. $2 \times 2 \times 2 \times 3$
c) 60 $2 \times 2 \times 3 \times 5$

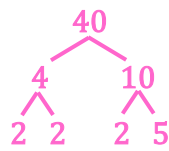
L17: Understand factor trees

[1A] Use a factor tree to prime factorise:

- a) 28. b) 40.

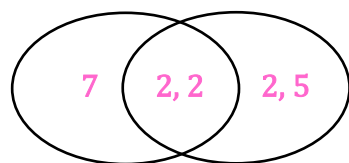


$$2 \times 2 \times 7$$



$$2 \times 2 \times 2 \times 5$$

[1B] Draw a Venn diagram to show common factors of 28 and 40.

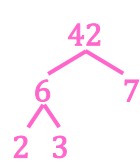


{1, 2, 4}

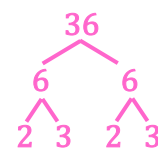


[2A] Answer as [1A].

- a) 42. b) 36.



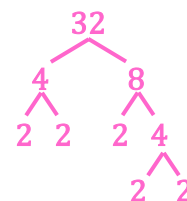
$$2 \times 3 \times 7$$



$$2 \times 2 \times 3 \times 3$$

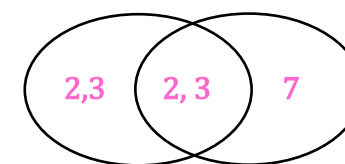
- c) 32.

$$2 \times 2 \times 2 \times 2 \times 2$$



[2B] Answer as [1B].

Show factors of 36 and 42.



{1, 2, 3, 6}

[R] Fill in the blanks.

- a) $L + \underline{XXV} = LXXV$
b) $LXX - \underline{XXX} = XL$
c) $\underline{XL} + XX = LX$
d) $C - \underline{XX} = LXXX$

Lesson	18 /120	Curriculum	B6.1.1.3.1 (p.121) e.g.3
Teaching Tips	Have learners read the sentences, pointing to each word with your finger. Support learners if they have difficulty reading any of the words.		
Objective	Understand how to find LCM using prime factorisation.		
Introduction (sample)	- Show how to find the LCM of 12 and 30 from prime factorisation as shown on the board. - To find the LCM of 12 and 30, we need to multiply each number by a different number so that both products are the same.		
Teacher's Note	It is important to understand why we need to use prime factorisation to find the LCM of two numbers. The key is to identify the prime factors that are missing from each number and include all of them in the LCM.		

<Mental Maths>

- a) $4 \times 6 = 24$ b) $4 \times 9 = 36$ c) $5 \times 7 = 35$
d) $6 \times 6 = 36$ e) $6 \times 9 = 54$

<Homework>

Answer as [1B].

- a) 6 and 8. **24**
b) 6 and 42. **42**
c) 6 and 28. **84**

Underline the prime factors that are missing from each number.

L18: Find LCM using
prime factorisation

$$12 = \underline{2} \times 2 \times 3$$

$$30 = 2 \times 3 \times \underline{5}$$

Multiply all the prime factors except the common factors.

$$2 \times 2 \times 3 \times 5 = 60$$

[1A] Prime factorise:

a) $6 = 2 \times 3$

b) $8 = 2 \times 2 \times 2$

c) $10 = 2 \times 5$

[1B] Find the LCM of 6 and 10.

$$6 \rightarrow 2 \times 3 \times \underline{5} = 30$$

$$10 \rightarrow 2 \times 5 \times \underline{3} = 30 \quad 30$$

.....

[2A] Answer as [1A].

a) $28 = 2 \times 2 \times 7$

b) $42 = 2 \times 3 \times 7$

[2B] Answer as [1B].

a) 8 and 10.

$$8 \rightarrow 2 \times 2 \times 2 \times \underline{5} = 40$$

$$10 \rightarrow 2 \times 5 \times \underline{2} \times \underline{2} = 40 \quad 40$$

b) 28 and 42.

$$28 \rightarrow 2 \times 2 \times 7 \times \underline{3} = 84$$

$$42 \rightarrow 2 \times 3 \times 7 \times \underline{2} = 84 \quad 84$$

Lesson	19 /120	Curriculum	B6.1.1.3.1 (p.121) e.g.2
Teaching Tips	Encourage learners to memorise as many words as possible (not just 1 or 2 letters) when copying from the board.		
Objective	Understand how to find HCF using prime factorisation.		
Introduction (sample)	- Show how to find the HCF of 12 and 30 from prime factorisation as shown on the board. - To find HCF of 12 and 30, we need to take the common factors of each number.		
Teacher's Note	It is important to understand why we use prime factorisation to find the HCF of two numbers. The key is to find the prime factors that both numbers have in common and use only those.		

<Mental Maths>

- a) $7 \times 7 = 49$ b) $8 \times 8 = 64$ c) $4 \times 2 = 8$
d) $4 \times 3 = 12$ e) $8 \times 2 = 16$

<Homework>

Answer as [1B].

- a) 9 and 15. **3**
b) 9 and 18. **9**
c) 15 and 25. **5**

Underline the common factors.

L19: Find HCF using
prime factorisation

$$12 = 2 \times \underline{2} \times \underline{3}$$

$$30 = \underline{2} \times \underline{3} \times 5$$

$$2 \times 3 = 6$$

[1A] Prime factorise:

a) $15 = 3 \times 5$

b) $18 = 2 \times 3 \times 3$

c) $45 = 3 \times 3 \times 5$

[1B] Find the HCF of 15 and 18.

$$15 = \underline{3} \times 5$$

$$18 = 2 \times \underline{3} \times 3 \quad \mathbf{3}$$

[2] Answer as [1B].

a) 15 and 45.

$$15 = \underline{3} \times 5$$

$$45 = 3 \times \underline{3} \times 5 \quad \mathbf{15}$$

b) 18 and 45.

$$18 = 2 \times \underline{3} \times 3$$

$$45 = \underline{3} \times 3 \times 5 \quad \mathbf{9}$$

c) 15, 18 and 45.

$$15 = \underline{3} \times 5$$

$$18 = 2 \times \underline{3} \times 3$$

$$45 = \underline{3} \times 3 \times 5 \quad \mathbf{3}$$

[R] Find the LCM of 18 and 45.

$$18 \rightarrow 3 \times 3 \times 2 \times \underline{5} = 90$$

$$45 \rightarrow 3 \times 3 \times 5 \times \underline{2} = 90 \quad \mathbf{90}$$

Lesson	20 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. - After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L16, [2]: L17, [3]: L18, [4]: L19.		

<Mental Maths>

- a) $7 \times 8 = 56$ b) $8 \times 9 = 72$ c) $5 \times 2 = 10$
d) $7 \times 2 = 14$ e) $9 \times 2 = 18$

<Homework>

*No homework.

L20: Review

[1] Fill in the blanks.

a) $XII + XV = XXVII$

$12 + 15 = 27$

b) $XXV - XV = X$

$25 - 15 = 10$

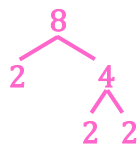
c) $XXX + LX = XC$

$20 + 70 = 90$

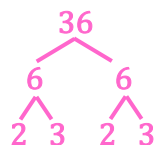
[2] Use a factor tree to prime factorise:

a) 8.

$2 \times 2 \times 2$

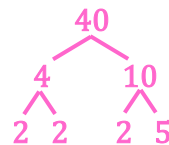


b) 36.



$2 \times 2 \times 3 \times 3$

c) 40.



$2 \times 2 \times 2 \times 5$

[3] Find the LCM of:

a) 8 and 40.

$8 \rightarrow 2 \times 2 \times 2 \times 5 = 40$

$40 \rightarrow 2 \times 2 \times 2 \times 5 = 40$ 40

b) 8 and 36.

$8 \rightarrow 2 \times 2 \times 2 \times 3 \times 3 = 72$

$36 \rightarrow 2 \times 2 \times 3 \times 3 \times 2 = 72$ 72

[4] Find the HCF of:

a) 8 and 40.

$8 = 2 \times 2 \times 2$

$40 = 2 \times 2 \times 2 \times 5$ 8

b) 8 and 36.

$8 = 2 \times 2 \times 2$

$36 = 2 \times 2 \times 3 \times 3$ 4

Lesson	21 /120	Curriculum	B6.1.2.1.1 (p.123) e.g.1
Teaching Tips	When a learner presents, repeat exactly what they said. Do not summarise or rephrase.		
Objective	Be able to solve (3-digit)×(1-digit) using the column method.		
Introduction (sample)	Show how to solve multiplication problems using the column method as shown on the board. Do not draw the dotted line for place value in the last one.		
Teacher's Note	- This lesson involves solving three types of tasks. (i) The products of all places are 1-digit. (ii) (tens) × (ones) is 2-digit and the other places are 1-digit. The sum of products of does not include regrouping. (iii) Both (tens) × (ones) and (ones) × (ones) are 2-digit, and (hundreds) × (ones) is 1-digit. The sum of products of does not include regrouping.		

<Mental Maths>

a) $7 \times 9 = 63$ b) $9 \times 9 = 81$ c) $6 \times 2 = 12$

d) $5 \times 3 = 15$ e) $6 \times 3 = 18$

<Homework>

Solve:

a) 413×2 b) 181×5 c) 234×4 d) 259×3

$$\begin{array}{r} 413 \\ \times 2 \\ \hline 826 \end{array} \quad \begin{array}{r} 181 \\ \times 5 \\ \hline 905 \end{array} \quad \begin{array}{r} 234 \\ \times 4 \\ \hline 936 \end{array} \quad \begin{array}{r} 259 \\ \times 3 \\ \hline 777 \end{array}$$

L21: Solve (3-digit)×(1-digit) (1)

$$\begin{array}{r} \text{H} \text{ T} \text{ O} \\ 2 \ 5 \ 3 \\ \times 3 \\ \hline 7 \ 5 \ 9 \end{array} \quad \begin{array}{r} \text{H} \text{ T} \text{ O} \\ 3 \ 1 \ 2 \\ \times 3 \\ \hline 9 \ 3 \ 6 \end{array}$$

$$\begin{array}{r} 2 \ 5 \ 1 \\ \times 3 \\ \hline 7 \ 5 \ 3 \end{array}$$

[1] Solve:

a) $\begin{array}{r} \text{H} \text{ T} \text{ O} \\ 2 \ 6 \ 3 \\ \times 3 \\ \hline 7 \ 8 \ 9 \end{array}$ b) $\begin{array}{r} \text{H} \text{ T} \text{ O} \\ 2 \ 3 \ 1 \\ \times 4 \\ \hline 9 \ 2 \ 4 \end{array}$

c) $\begin{array}{r} \text{H} \text{ T} \text{ O} \\ 2 \ 4 \ 8 \\ \times 3 \\ \hline 7 \ 4 \ 4 \end{array}$

.....

[2] Solve:

a) 132×3

b) 463×2

$$\begin{array}{r} 1 \ 3 \ 2 \\ \times 3 \\ \hline 3 \ 9 \ 6 \end{array}$$

$$\begin{array}{r} 4 \ 6 \ 3 \\ \times 2 \\ \hline 9 \ 2 \ 6 \end{array}$$

c) 140×6

d) 168×4

$$\begin{array}{r} 1 \ 4 \ 0 \\ \times 6 \\ \hline 8 \ 4 \ 0 \end{array}$$

$$\begin{array}{r} 1 \ 6 \ 8 \\ \times 4 \\ \hline 6 \ 7 \ 2 \end{array}$$

[R] Find the HCF of 28 and 42.

$28 = 2 \times 2 \times 7$

$42 = 2 \times 3 \times 7$ 14

Lesson	22 /120	Curriculum	B6.1.2.2.1 (p.125) e.g.2
Teaching Tips	While you are writing on the board, let learners copy it in their exercise books.		
Objective	Be able to solve (3-digit)×(1-digit) using the column method.		
Introduction (sample)	Show how to solve multiplication problems using the column method as shown on the board. Do not draw the dotted line for place value in the last one.		
Teacher's Note	- This lesson involves solving three types of tasks. (i) (hundreds) × (ones) is 2-digit, but the other places are 1-digit. (ii) The products of all places are 2-digit. The sum of products includes regrouping. (iii) The tens place of the 3-digit number is zero.		

<Mental Maths>

- a) $5 \times 4 = 20$ b) $6 \times 4 = 24$ c) $6 \times 5 = 30$
d) $9 \times 4 = 36$ e) $9 \times 5 = 45$

<Homework>

Solve:

- a) 731×3 b) 763×5 c) 508×2 d) 237×9

$$\begin{array}{r} 731 \\ \times 3 \\ \hline 2193 \end{array} \quad \begin{array}{r} 763 \\ \times 5 \\ \hline 3815 \end{array} \quad \begin{array}{r} 508 \\ \times 2 \\ \hline 1016 \end{array} \quad \begin{array}{r} 237 \\ \times 9 \\ \hline 2133 \end{array}$$

L22: Solve (3-digit)×(1-digit) (2)

$$\begin{array}{r} \text{H T O} \\ 412 \\ \times 4 \\ \hline 1648 \end{array} \quad \begin{array}{r} \text{H T O} \\ 378 \\ \times 4 \\ \hline 1512 \end{array}$$

$$\begin{array}{r} 302 \\ \times 8 \\ \hline 2416 \end{array}$$

[1] Solve:

$$\begin{array}{r} \text{a) H T O} \\ 523 \\ \times 3 \\ \hline 1569 \end{array} \quad \begin{array}{r} \text{b) H T O} \\ 763 \\ \times 5 \\ \hline 3815 \end{array}$$

$$\begin{array}{r} \text{c) H T O} \\ 208 \\ \times 7 \\ \hline 1456 \end{array}$$

.....

[2] Solve:

- a) 621×3 b) 237×9

$$\begin{array}{r} 621 \\ \times 3 \\ \hline 1863 \end{array} \quad \begin{array}{r} 237 \\ \times 9 \\ \hline 2133 \end{array}$$

- c) 427×8

- d) 308×4

$$\begin{array}{r} 427 \\ \times 8 \\ \hline 3416 \end{array} \quad \begin{array}{r} 308 \\ \times 4 \\ \hline 1232 \end{array}$$

[R] Solve:

- a) 374×2 b) 263×3 c) 148×6

$$\begin{array}{r} 374 \\ \times 2 \\ \hline 748 \end{array} \quad \begin{array}{r} 263 \\ \times 3 \\ \hline 789 \end{array} \quad \begin{array}{r} 148 \\ \times 6 \\ \hline 888 \end{array}$$

Lesson	25 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]a),b): L21, [1]c),d): L22, [1] e),f): L23, [1] g),h): L24.		

<Mental Maths>

a) $5 \times 8 = 40$ b) $6 \times 7 = 42$ c) $7 \times 7 = 49$

d) $8 \times 8 = 64$ e) $8 \times 7 = 56$

<Homework>

*No homework.

L25: Review

[1] Solve:

a) 223×3

$$\begin{array}{r} 223 \\ \times 3 \\ \hline 669 \end{array}$$

b) 273×3

$$\begin{array}{r} 273 \\ \times 3 \\ \hline 819 \end{array}$$

c) 631×3

$$\begin{array}{r} 631 \\ \times 3 \\ \hline 1893 \end{array}$$

d) 709×6

$$\begin{array}{r} 709 \\ \times 6 \\ \hline 4254 \end{array}$$

e) 27×47

$$\begin{array}{r} 27 \\ \times 47 \\ \hline 189 \\ 108 \\ \hline 1269 \end{array}$$

f) 76×60

$$\begin{array}{r} 76 \\ \times 60 \\ \hline 00 \\ 456 \\ \hline 4560 \end{array}$$

g) 216×36

$$\begin{array}{r} 216 \\ \times 36 \\ \hline 1296 \\ 648 \\ \hline 7776 \end{array}$$

h) 176×64

$$\begin{array}{r} 176 \\ \times 64 \\ \hline 704 \\ 1056 \\ \hline 11264 \end{array}$$

Lesson	28 /120	Curriculum	B6.1.2.4.1 (p.127) e.g.1
Teaching Tips	If more than half of the learners cannot solve the first task, explain how to solve it using it.		
Objective	Be able to solve division with remainder.		
Introduction (sample)	- Ask, "there are 14 chocolates. Each child get 3 chocolates. How many children can get chocolates?". Present this question with a concrete material. - Write the number sentence $14 \div 3 =$ as shown on the board. - Find the answer by $3 \times \underline{\quad}$. $3 \times 3 = 9$, $3 \times 4 = 12$, $3 \times 5 = 15$. Hence, the quotient is 4 and the remainder is $14 - 12 = 2$. Let learners know the remainder is shown by R. - Check the answer of division with remainder as shown on the board.		
Teacher's Note	It is important to check the answer because it will help learners understand the relationship between the multiplication and division.		

<Mental Maths>

- a) $18 \div 2 = 9$ b) $18 \div 9 = 2$ c) $21 \div 3 = 7$
d) $24 \div 4 = 6$ e) $25 \div 5 = 5$

<Homework>

Answer as [1B].

a) $37 \div 4 = 9 \text{ R } 2$

$4 \times 9 + 2 = 36 + 2 = 38$, Wrong

b) $57 \div 8 = 7 \text{ R } 2$

$8 \times 7 + 2 = 56 + 2 = 58$, Wrong

Let learners use this relationship in [1B].

L28: Division with remainder

$14 \div 3 = 4 \text{ R } 2$

$$\begin{array}{ccc} \downarrow & \downarrow & \downarrow \\ 3 & \times & 4 + 2 = 14 \end{array}$$

[1A] Solve:

a) $16 \div 3 = 5 \text{ R } 1$ b) $30 \div 4 = 7 \text{ R } 2$

c) $66 \div 7 = 9 \text{ R } 3$

[1B] Check if the given answer is correct.

a) $23 \div 4 = 5 \text{ R } 3$

$4 \times 5 + 3 = 20 + 3 = 23$, Correct

b) $23 \div 6 = 4 \text{ R } 1$

$6 \times 4 + 1 = 24 + 1 = 25$, Wrong

.....
[2A] Solve:

a) $21 \div 4 = 5 \text{ R } 1$ b) $18 \div 7 = 2 \text{ R } 4$

c) $50 \div 8 = 6 \text{ R } 2$ d) $55 \div 7 = 7 \text{ R } 6$

[2B] Answer as [1B].

a) $25 \div 3 = 9 \text{ R } 2$

$3 \times 9 + 2 = 27 + 2 = 29$, Wrong

b) $46 \div 6 = 7 \text{ R } 4$

$6 \times 7 + 4 = 42 + 4 = 46$, Correct

c) $73 \div 8 = 8 \text{ R } 7$

$8 \times 8 + 7 = 64 + 7 = 71$, Wrong

[R] Solve:

a) $6,000 \div 3 = 2,000$

b) $5,400 \div 6 = 900$

c) $42 \div 2 = 21$

d) $66 \div 3 = 22$

Lesson	29 /120	Curriculum	B6.1.2.3.1 (p.126) e.g.1
Teaching Tips	Have learners copy everything from the board into their exercise books.		
Objective	Review of (2-digit) ÷ (1-digit).		
Introduction (sample)	Show how to solve division tasks using long division.		
Teacher's Note	- This lesson involves a task that requires solving long division in which the tens place of the dividend is a multiple of the divisor. - Learners can write zero in the tens place if they want to. - This lesson is a review of the contents in B5 to prepare for the next lesson. - This lesson focuses on division without a remainder.		

<Mental Maths>

- a) $18 \div 3 = 6$ b) $20 \div 4 = 5$ c) $21 \div 7 = 3$
d) $24 \div 6 = 4$ e) $27 \div 3 = 9$

<Homework>

Solve:

- a) $78 \div 6$ b) $95 \div 4$ c) $94 \div 3$ d) $62 \div 3$

$$\begin{array}{r} 13 \\ 6 \overline{) 78} \\ \underline{6} \\ 18 \\ \underline{18} \\ 0 \end{array} \quad \begin{array}{r} 23 \\ 4 \overline{) 95} \\ \underline{8} \\ 15 \\ \underline{12} \\ 3 \end{array} \quad \begin{array}{r} 31 \\ 3 \overline{) 94} \\ \underline{9} \\ 4 \\ \underline{3} \\ 1 \end{array} \quad \begin{array}{r} 20 \\ 3 \overline{) 62} \\ \underline{6} \\ 2 \end{array}$$

L29: Solve (2-digit) ÷ (1-digit)

$$\begin{array}{r} 28 \\ 3 \overline{) 84} \\ \underline{6} \\ 24 \\ \underline{24} \\ 0 \end{array} \quad \begin{array}{r} 21 \\ 4 \overline{) 85} \\ \underline{8} \\ 5 \\ \underline{4} \\ 1 \end{array} \quad \begin{array}{r} 10 \\ 6 \overline{) 62} \\ \underline{6} \\ 2 \end{array}$$

[1] Solve:

a)
$$\begin{array}{r} 15 \\ 5 \overline{) 75} \\ \underline{5} \\ 25 \\ \underline{25} \\ 0 \end{array}$$

b)
$$\begin{array}{r} 39 \\ 2 \overline{) 79} \\ \underline{6} \\ 19 \\ \underline{18} \\ 1 \end{array}$$

Zero is omitted here.

c)
$$\begin{array}{r} 22 \\ 3 \overline{) 68} \\ \underline{6} \\ 8 \\ \underline{6} \\ 2 \end{array}$$

d)
$$\begin{array}{r} 10 \\ 6 \overline{) 65} \\ \underline{6} \\ 5 \end{array}$$

[2] Solve:

- a) $84 \div 3$ b) $99 \div 4$ c) $85 \div 2$

$$\begin{array}{r} 28 \\ 3 \overline{) 84} \\ \underline{6} \\ 24 \\ \underline{24} \\ 0 \end{array}$$

$$\begin{array}{r} 24 \\ 4 \overline{) 99} \\ \underline{8} \\ 19 \\ \underline{16} \\ 3 \end{array}$$

$$\begin{array}{r} 42 \\ 2 \overline{) 85} \\ \underline{8} \\ 5 \\ \underline{4} \\ 1 \end{array}$$

- d) $98 \div 3$

$$\begin{array}{r} 32 \\ 3 \overline{) 98} \\ \underline{9} \\ 8 \\ \underline{6} \\ 2 \end{array}$$

- e) $61 \div 3$

$$\begin{array}{r} 20 \\ 3 \overline{) 61} \\ \underline{6} \\ 1 \end{array}$$

[R] Check the answer of:

a) $37 \div 4 = 9 \text{ R } 2$

$4 \times 9 + 2 = 36 + 2 = 38$, Wrong

b) $60 \div 7 = 8 \text{ R } 4$

$7 \times 8 + 4 = 56 + 4 = 60$, Correct

Lesson	30 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. - After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L26, [2]: L27, [3]: L28, [4]: L29.		

<Mental Maths>

- a) $18 \div 6 = 3$ b) $20 \div 5 = 4$ c) $24 \div 3 = 8$
d) $24 \div 8 = 3$ e) $27 \div 9 = 3$

<Homework>

*No homework.

L30: Review

[1] Solve:

a) 605×37

$$\begin{array}{r} 605 \\ \times 37 \\ \hline 4235 \\ 1815 \\ \hline 22385 \end{array}$$

b) 427×325

$$\begin{array}{r} 427 \\ \times 325 \\ \hline 2135 \\ 854 \\ 1281 \\ \hline 138775 \end{array}$$

[2] Solve:

a) $8,000 \div 4 = 2,000$

b) $5,600 \div 8 = 700$

c) $69 \div 3 = 23$

[3] Solve:

a) $17 \div 3 = 5 \text{ R } 2$

b) $37 \div 4 = 9 \text{ R } 1$

c) $41 \div 5 = 8 \text{ R } 1$

[4] Solve:

a) $91 \div 7$

$$\begin{array}{r} 13 \\ 7 \overline{) 91} \\ \underline{7} \\ 21 \\ \underline{21} \\ 0 \end{array}$$

b) $98 \div 4$

$$\begin{array}{r} 24 \\ 4 \overline{) 98} \\ \underline{8} \\ 18 \\ \underline{16} \\ 2 \end{array}$$

c) $65 \div 3$ d) $94 \div 3$

$$\begin{array}{r} 21 \\ 3 \overline{) 65} \\ \underline{6} \\ 5 \\ \underline{3} \\ 2 \end{array}$$

$$\begin{array}{r} 31 \\ 3 \overline{) 94} \\ \underline{9} \\ 4 \\ \underline{3} \\ 1 \end{array}$$

Lesson	31 /120	Curriculum	B6.1.2.4.1 (p.) e.g.1
Teaching Tips	Divide the board into two parts and copy the teacher manual as it is. Once learners have copied it, erase the left part to write the right part of the teacher manual.		
Objective	Be able to solve long division for (3-digit) ÷ (1-digit) with a remainder.		
Introduction (sample)	Show how to solve division tasks using long division. Do not draw the dotted line for place value in the second one.		
Teacher's Note	- This lesson involves solving three types of tasks. (i) (3-digit) ÷ (1-digit) where the hundreds place of the dividend is not a multiple of the divisor. (ii) (3-digit) ÷ (1-digit) where the hundreds place of the dividend is a multiple of the divisor. (iii) (3-digit) ÷ (1-digit) where the hundreds place of the dividend is a multiple of the divisor, and the tens place of the quotient is zero.		

<Mental Maths>

- a) $28 \div 4 = 7$ b) $30 \div 6 = 5$ c) $35 \div 5 = 7$
d) $36 \div 6 = 6$ e) $40 \div 8 = 5$

<Homework>

Solve:

a) $797 \div 6$
$$\begin{array}{r} 132 \\ 6 \overline{) 797} \\ \underline{6} \\ 19 \\ \underline{18} \\ 17 \\ \underline{12} \\ 5 \end{array}$$

$$\begin{array}{r} 221 \\ 4 \overline{) 887} \\ \underline{8} \\ 8 \\ \underline{8} \\ 7 \\ \underline{4} \\ 3 \end{array}$$

$$\begin{array}{r} 105 \\ 9 \overline{) 952} \\ \underline{9} \\ 5 \\ \underline{5} \\ 2 \\ \underline{0} \\ 2 \end{array}$$

b) $887 \div 4$
$$\begin{array}{r} 19 \\ 4 \overline{) 887} \\ \underline{8} \\ 8 \\ \underline{8} \\ 7 \\ \underline{4} \\ 3 \end{array}$$

$$\begin{array}{r} 221 \\ 4 \overline{) 887} \\ \underline{8} \\ 8 \\ \underline{8} \\ 7 \\ \underline{4} \\ 3 \end{array}$$

$$\begin{array}{r} 105 \\ 9 \overline{) 952} \\ \underline{9} \\ 5 \\ \underline{5} \\ 2 \\ \underline{0} \\ 2 \end{array}$$

c) $952 \div 9$
$$\begin{array}{r} 105 \\ 9 \overline{) 952} \\ \underline{9} \\ 5 \\ \underline{5} \\ 2 \\ \underline{0} \\ 2 \end{array}$$

$$\begin{array}{r} 221 \\ 4 \overline{) 887} \\ \underline{8} \\ 8 \\ \underline{8} \\ 7 \\ \underline{4} \\ 3 \end{array}$$

$$\begin{array}{r} 105 \\ 9 \overline{) 952} \\ \underline{9} \\ 5 \\ \underline{5} \\ 2 \\ \underline{0} \\ 2 \end{array}$$

L31: Solve (3-digit) ÷ (1-digit) (1)

[1] Solve:

$$\begin{array}{r} 146 \\ 5 \overline{) 734} \\ \underline{5} \\ 23 \\ \underline{20} \\ 34 \\ \underline{30} \\ 4 \end{array}$$

$$\begin{array}{r} 206 \\ 3 \overline{) 619} \\ \underline{6} \\ 0 \\ \underline{0} \\ 19 \\ \underline{18} \\ 1 \end{array}$$

a)
$$\begin{array}{r} 238 \\ 3 \overline{) 715} \\ \underline{6} \\ 11 \\ \underline{9} \\ 25 \\ \underline{24} \\ 1 \end{array}$$
 b)
$$\begin{array}{r} 114 \\ 6 \overline{) 689} \\ \underline{6} \\ 8 \\ \underline{6} \\ 29 \\ \underline{24} \\ 5 \end{array}$$
 c)
$$\begin{array}{r} 306 \\ 2 \overline{) 613} \\ \underline{6} \\ 1 \\ \underline{0} \\ 13 \\ \underline{12} \\ 1 \end{array}$$

[2] Solve:

a) $625 \div 4$

$$\begin{array}{r} 156 \\ 4 \overline{) 625} \\ \underline{4} \\ 22 \\ \underline{20} \\ 25 \\ \underline{24} \\ 1 \end{array}$$

b) $883 \div 3$

$$\begin{array}{r} 294 \\ 3 \overline{) 883} \\ \underline{6} \\ 28 \\ \underline{27} \\ 13 \\ \underline{12} \\ 1 \end{array}$$

c) $867 \div 4$

$$\begin{array}{r} 216 \\ 4 \overline{) 867} \\ \underline{8} \\ 6 \\ \underline{4} \\ 27 \\ \underline{24} \\ 3 \end{array}$$

d) $762 \div 7$

$$\begin{array}{r} 108 \\ 7 \overline{) 762} \\ \underline{7} \\ 6 \\ \underline{0} \\ 62 \\ \underline{56} \\ 6 \end{array}$$

[R] Solve:

a) $99 \div 8$ b) $94 \div 3$ c) $62 \div 3$

$$\begin{array}{r} 12 \\ 8 \overline{) 99} \\ \underline{8} \\ 19 \\ \underline{16} \\ 3 \end{array}$$

$$\begin{array}{r} 31 \\ 3 \overline{) 94} \\ \underline{9} \\ 4 \\ \underline{3} \\ 1 \end{array}$$

$$\begin{array}{r} 20 \\ 3 \overline{) 62} \\ \underline{6} \\ 2 \\ \underline{0} \\ 2 \end{array}$$

Lesson	32 /120	Curriculum	B6.1.2.4.1 (p.127) e.g.1
Teaching Tips	Encourage learners to write in their exercise books. The more they write, the better their writing skills will become.		
Objective	Be able to solve long division with a remainder for (3-digit) ÷ (1-digit) with a special cases.		
Introduction (sample)	Show how to solve division tasks using long division. Do not draw the dotted line for place value in the second one.		
Teacher's Note	- This lesson involves solving two types of tasks. (i) (3-digit) ÷ (1-digit) whose quotient is a multiple of 10s. (ii) (3-digit) ÷ (1-digit) whose quotient is 2-digit.		

<Mental Maths>

a) $28 \div 7 = 4$ b) $32 \div 4 = 8$ c) $35 \div 7 = 5$

d) $36 \div 9 = 4$ e) $42 \div 6 = 7$

<Homework>

Solve:

a) $922 \div 4$
$$\begin{array}{r} 230 \\ 4 \overline{) 922} \\ \underline{8} \\ 12 \\ \underline{12} \\ 0 \end{array}$$

b) $238 \div 6$
$$\begin{array}{r} 39 \\ 6 \overline{) 238} \\ \underline{18} \\ 58 \\ \underline{54} \\ 4 \end{array}$$

c) $657 \div 8$
$$\begin{array}{r} 82 \\ 8 \overline{) 657} \\ \underline{64} \\ 17 \\ \underline{16} \\ 1 \end{array}$$

L32: Solve (3-digit) ÷ (1-digit) (2)

$$\begin{array}{r} 240 \\ 3 \overline{) 721} \\ \underline{6} \\ 12 \\ \underline{12} \\ 0 \end{array}$$

$$\begin{array}{r} 35 \\ 6 \overline{) 214} \\ \underline{18} \\ 34 \\ \underline{30} \\ 4 \end{array}$$

[1] Solve:

a)
$$\begin{array}{r} 270 \\ 3 \overline{) 812} \\ \underline{6} \\ 21 \\ \underline{21} \\ 0 \end{array}$$

b)
$$\begin{array}{r} 39 \\ 6 \overline{) 237} \\ \underline{18} \\ 57 \\ \underline{54} \\ 3 \end{array}$$

c)
$$\begin{array}{r} 89 \\ 3 \overline{) 269} \\ \underline{24} \\ 29 \\ \underline{27} \\ 2 \end{array}$$

.....
[2] Solve:

a) $845 \div 7$
$$\begin{array}{r} 120 \\ 7 \overline{) 845} \\ \underline{7} \\ 14 \\ \underline{14} \\ 0 \end{array}$$

b) $632 \div 3$
$$\begin{array}{r} 210 \\ 3 \overline{) 632} \\ \underline{6} \\ 3 \\ \underline{3} \\ 0 \end{array}$$

c) $193 \div 5$
$$\begin{array}{r} 38 \\ 5 \overline{) 193} \\ \underline{15} \\ 43 \\ \underline{40} \\ 3 \end{array}$$

d) $611 \div 7$
$$\begin{array}{r} 87 \\ 7 \overline{) 611} \\ \underline{56} \\ 51 \\ \underline{49} \\ 2 \end{array}$$

[R] Solve:

a) $437 \div 3$
$$\begin{array}{r} 145 \\ 3 \overline{) 437} \\ \underline{3} \\ 13 \\ \underline{12} \\ 17 \\ \underline{15} \\ 2 \end{array}$$

b) $793 \div 3$
$$\begin{array}{r} 264 \\ 3 \overline{) 793} \\ \underline{6} \\ 19 \\ \underline{18} \\ 13 \\ \underline{12} \\ 1 \end{array}$$

c) $652 \div 6$
$$\begin{array}{r} 108 \\ 6 \overline{) 652} \\ \underline{6} \\ 5 \\ \underline{0} \\ 52 \\ \underline{48} \\ 4 \end{array}$$

d) $817 \div 4$
$$\begin{array}{r} 204 \\ 4 \overline{) 817} \\ \underline{8} \\ 1 \\ \underline{0} \\ 17 \\ \underline{16} \\ 1 \end{array}$$

Lesson	35 /120	Curriculum	Review Lesson
Teaching Tips	Divide the board into two parts and copy the teacher manual as it is. Once learners have copied it, erase the left part to write the right part of the teacher manual.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. - After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1] a), b): L31 [1] c), d): L32, [1] e), f): L33, [1] g), h): L34.		

<Mental Maths>

a) $45 \div 9 = 5$ b) $49 \div 7 = 7$ c) $56 \div 7 = 8$

d) $63 \div 9 = 7$ e) $72 \div 9 = 8$

<Homework>

*No homework.

L35: Review

[1] Solve:

a) $814 \div 6$

$$\begin{array}{r} 135 \\ 6 \overline{) 814} \\ \underline{6} \\ 21 \\ \underline{18} \\ 34 \\ \underline{30} \\ 4 \end{array}$$

b) $709 \div 3$

$$\begin{array}{r} 236 \\ 3 \overline{) 709} \\ \underline{6} \\ 10 \\ \underline{9} \\ 19 \\ \underline{18} \\ 1 \end{array}$$

c) $754 \div 5$

$$\begin{array}{r} 150 \\ 5 \overline{) 754} \\ \underline{5} \\ 25 \\ \underline{25} \\ 4 \end{array}$$

d) $239 \div 3$

$$\begin{array}{r} 79 \\ 3 \overline{) 239} \\ \underline{21} \\ 29 \\ \underline{27} \\ 2 \end{array}$$

e) $79 \div 22$

$$\begin{array}{r} 3 \\ 22 \overline{) 79} \\ \underline{66} \\ 13 \end{array}$$

f) $58 \div 19$

$$\begin{array}{r} 3 \\ 19 \overline{) 58} \\ \underline{57} \\ 1 \end{array}$$

g) $395 \div 12$

$$\begin{array}{r} 32 \\ 12 \overline{) 395} \\ \underline{36} \\ 35 \\ \underline{24} \\ 11 \end{array}$$

h) $721 \div 32$

$$\begin{array}{r} 22 \\ 32 \overline{) 721} \\ \underline{64} \\ 81 \\ \underline{64} \\ 17 \end{array}$$

Lesson	38 /120	Curriculum	B6.1.2.6.1 (p.128) e.g.1
Teaching Tips	Have learners repeat what you said to check their understanding.		
Objective	Be able to compare integers using the rule to compare integers.		
Introduction (sample)	- Draw a number line as shown on the board. - Fill in the blanks, i.e., -3, -2 and 2.		
Teacher's Note	- The point is that learners first compare numbers using a number line, and then they learn the rules for comparing integers in [1B]. The learners are expected to find the rule by themselves from the number line. - In [2A] and [2B], learners are expected to apply the rule they found, not by drawing a number line.		

<Mental Maths>

a) $3 \times 3 = 9$ b) $3 \times 6 = 18$ c) $3 \times 9 = 27$
d) $4 \times 6 = 24$ e) $4 \times 9 = 36$

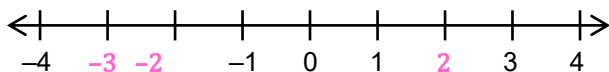
<Homework>

Answer as [2B].

a) -6, 2, -3, 1 -6, -3, 1, 2
b) 10, -10, -15, -5 -15, -10, -5, 10

Apply the rule to solve the [2A] and [2B].

L38: Compare integers



[1A] Write < or >.

a) $-3 < 2$ b) $-1 > -2$ c) $-3 < 0$

[1B] Fill in the blanks.

When comparing:

i) Two negative numbers:

The number with the larger numerical value is smaller.

ii) A negative and a positive number:
The negative number is always smaller.

.....

[2A] Write < or >.

a) $4 > -5$ b) $-7 < -5$ c) $-9 < 0$

[2B] Order from small to big.

a) -5, 3, -4, 1 -5, -4, 1, 3
b) 5, -10, -20, -15 -20, -15, -10, 5

[R] There are 180 mangoes.
Kofi put them in a box designed with 2 rows and 3 columns.
How many boxes does he need?

A box: $2 \times 3 = 6$, $180 \div 6 = 30$, 30 boxes.

Lesson	40 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L36, [2]: L37, [3]: L38, [4]: L39.		

<Mental Maths>

a) $5 \times 6 = 30$ b) $5 \times 9 = 45$ c) $6 \times 8 = 48$

d) $7 \times 8 = 56$ e) $8 \times 9 = 72$

<Homework>

*No homework.

L40: Review

[1] Kwame bought 4 avocados for ₵8 each. He paid ₵40. How much change did he get?

$4 \times 8 = 32, 40 - 32 = 8, \text{₵}8$

[2] There are 92 eggs.

Kwaku places them in a case designed with 3 rows and 2 columns. How many cases does he need?

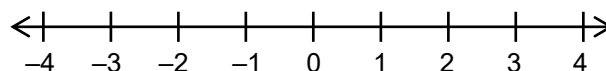
A Case: $2 \times 3 = 6, 92 \div 6 = 15 \text{ R } 2$

16 cases.

[3] Order from big to small.

a) $-5, 2, -4, 1$ $2, 1, -4, -5$

b) $-5, 10, -20, -15$ $10, -5, -15, -20$



[4] Solve by using the number line.

a) $2 - 4 = -2$ b) $-2 + 4 = 2$

c) $-3 + 3 = 0$

Lesson	43 /120	Curriculum	B6.1.3.1.2 (p.132) e.g.1,2
Teaching Tips	If more than half of the learners cannot solve the first task, explain how to solve it using it.		
Objective	Be able to solve additions and subtractions of mixed fractions to improper fractions with the same denominator.		
Introduction (sample)	Show how to add mixed fractions by converting mixed fractions as shown on the board.		
Teacher's Note	- This lesson is a review of B5 to prepare for the later lessons. - If the answer is an improper fraction, it should be converted to a mixed fraction. However, we leave it as it is up to L46 to focus on the objective of each lesson.		

*This dotted line separates exercise part 1 and 2.
Write all the black parts up to this line in exercise part 1.*

<Mental Maths>

- a) $4 \times 2 = 8$ b) $4 \times 3 = 12$ c) $8 \times 2 = 16$
d) $5 \times 4 = 20$ e) $6 \times 4 = 24$

<Homework>

Solve:

- a) $1\frac{2}{5} + 2\frac{1}{5} = \frac{18}{5}$ b) $3\frac{1}{3} - 1\frac{2}{3} = \frac{5}{3}$
c) $3\frac{1}{4} + 1\frac{1}{4} = \frac{9}{2}$ d) $2\frac{1}{4} - 1\frac{3}{4} = \frac{1}{2}$

L43: Add and subtract mixed fractions

$$2\frac{3}{5} = \frac{10}{5} + \frac{3}{5} = \frac{13}{5} \quad 3\frac{2}{5} = \frac{15}{5} + \frac{2}{5} = \frac{17}{5}$$

$$2\frac{3}{5} + 3\frac{2}{5} = \frac{13}{5} + \frac{17}{5} = \frac{30}{5} = 6$$

[1A] Convert to improper fractions.

a) $1\frac{2}{3} = \frac{3}{3} + \frac{2}{3} = \frac{5}{3}$ b) $3\frac{1}{5} = \frac{15}{5} + \frac{1}{5} = \frac{16}{5}$

[1B] Solve:

a) $3\frac{2}{5} + 1\frac{2}{5} = \frac{17}{5} + \frac{7}{5} = \frac{24}{5}$

b) $2\frac{1}{4} - 1\frac{3}{4} = \frac{9}{4} - \frac{7}{4} = \frac{2}{4} = \frac{1}{2}$

[2] Solve:

a) $1\frac{2}{5} + 2\frac{1}{5} = \frac{7}{5} + \frac{11}{5} = \frac{18}{5}$

b) $3\frac{1}{3} - 1\frac{2}{3} = \frac{10}{3} - \frac{5}{3} = \frac{5}{3}$

c) $3\frac{1}{4} + 1\frac{1}{4} = \frac{13}{4} + \frac{5}{4} = \frac{18}{4} = \frac{9}{2}$

d) $2 - 1\frac{2}{6} = \frac{12}{6} - \frac{8}{6} = \frac{4}{6} = \frac{2}{3}$

e) $2\frac{3}{4} + 1\frac{1}{4} = \frac{11}{4} + \frac{5}{4} = \frac{16}{4} = 4$

[R] Make the denominators the same.

a) $\frac{3}{2} \frac{5}{4} \frac{9}{7} \{7, 14, 21, 28\} \frac{42}{28} \frac{35}{28} \frac{36}{28}$

b) $\frac{4}{2} \frac{9}{5} \frac{7}{3} \{5, 10, 15, 20, 25, 30\} \frac{60}{30} \frac{54}{30} \frac{70}{30}$

Lesson	45 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L41, [2]: L42, [3]: L43, [4]: L44.		

<Mental Maths>

- a) $6 \times 2 = 12$ b) $5 \times 3 = 15$ c) $6 \times 3 = 18$
d) $8 \times 3 = 24$ e) $7 \times 4 = 28$

<Homework>

*No homework.

L45: Review

[1] Solve:

- a) $2 \times (-6) = -12$ b) $(-1) \times 4 = -4$
c) $4 \times (-5) = -20$ d) $(-6) \times 4 = -24$
e) $6 \times (-6) = -36$ f) $(-7) \times 7 = -49$

[2] Make the denominators the same.

a) $\frac{1}{2} \frac{1}{3} \frac{1}{4}$
 $\{4, 8, 12\} \quad \frac{6}{12} \frac{4}{12} \frac{3}{12}$

b) $\frac{7}{6} \frac{4}{3} \frac{6}{5}$
 $\{6, 12, 18, 24, 30\} \quad \frac{35}{30} \frac{40}{30} \frac{36}{30}$

c) $\frac{5}{3} \frac{15}{10} \frac{8}{5}$
 $\{5, 10, 15, 20, 25, 30\} \quad \frac{50}{30} \frac{45}{30} \frac{48}{30}$

[3] Solve:

a) $1\frac{4}{5} - 1\frac{2}{5} = \frac{9}{5} - \frac{7}{5} = \frac{2}{5}$

b) $3\frac{2}{3} + 1\frac{1}{3} = \frac{11}{3} + \frac{4}{3} = \frac{15}{3} = 5$

c) $2\frac{4}{6} - 1\frac{1}{6} = \frac{16}{6} - \frac{7}{6} = \frac{9}{6} = 1\frac{1}{2}$

[4] Solve:

a) $\frac{1}{5} + \frac{1}{7} = \frac{7}{35} + \frac{5}{35} = \frac{12}{35}$

b) $\frac{3}{8} + \frac{3}{5} = \frac{15}{40} + \frac{24}{40} = \frac{39}{40}$

c) $\frac{2}{3} + \frac{3}{8} = \frac{16}{24} + \frac{9}{24} = \frac{25}{24}$

d) $\frac{4}{5} + \frac{2}{7} = \frac{28}{35} + \frac{10}{35} = \frac{38}{35}$

Lesson	46 /120	Curriculum	B6.1.3.1.2 (p.132) e.g.1,2
Teaching Tips	Have learners copy everything from the board into their exercise books.		
Objective	Be able to solve additions and subtractions of mixed fractions whose denominator is the multiple of the other.		
Introduction (sample)	Show how to subtract mixed fractions by converting mixed fractions to improper fractions as shown on the board.		
Teacher's Note	- Memorising multiplication table up to 9×9 is important to solve fractions. - This lesson involves solving two types of tasks. (i) Both minuend and subtrahend are proper fractions. (ii) Minuend is an improper fraction.		

<Mental Maths>

a) $5 \times 2 = 10$ b) $7 \times 2 = 14$ c) $9 \times 2 = 18$

d) $7 \times 3 = 21$ e) $9 \times 3 = 27$

<Homework>

Solve:

a) $\frac{2}{3} - \frac{1}{2} = \frac{1}{6}$ b) $\frac{5}{7} - \frac{3}{5} = \frac{4}{35}$

c) $\frac{9}{7} - \frac{3}{4} = \frac{15}{28}$ d) $\frac{6}{5} - \frac{5}{9} = \frac{29}{45}$

Improper fractions should be converted to mixed fractions.

L46: Subtract fractions with different denominators

$$\frac{3}{4} - \frac{2}{3} = \frac{9}{12} - \frac{8}{12} = \frac{1}{12}$$

$$\frac{4}{3} - \frac{2}{5} = \frac{20}{15} - \frac{6}{15} = \frac{14}{15}$$

[1] Solve:

a) $\frac{3}{4} - \frac{1}{3} = \frac{9}{12} - \frac{4}{12} = \frac{5}{12}$

b) $\frac{5}{7} - \frac{2}{5} = \frac{25}{35} - \frac{14}{35} = \frac{11}{35}$

c) $\frac{3}{4} - \frac{5}{9} = \frac{27}{36} - \frac{20}{36} = \frac{7}{36}$

d) $\frac{5}{4} - \frac{2}{3} = \frac{15}{12} - \frac{8}{12} = \frac{7}{12}$

e) $\frac{7}{5} - \frac{5}{6} = \frac{42}{30} - \frac{25}{30} = \frac{17}{30}$

[2] Solve:

a) $\frac{1}{3} - \frac{1}{8} = \frac{8}{24} - \frac{3}{24} = \frac{5}{24}$

b) $\frac{5}{8} - \frac{2}{5} = \frac{25}{40} - \frac{16}{40} = \frac{9}{40}$

c) $\frac{5}{9} - \frac{1}{4} = \frac{20}{36} - \frac{9}{36} = \frac{11}{36}$

d) $\frac{5}{8} - \frac{2}{7} = \frac{35}{56} - \frac{16}{56} = \frac{19}{56}$

e) $\frac{3}{2} - \frac{1}{3} = \frac{9}{6} - \frac{2}{6} = \frac{7}{6}$

f) $\frac{7}{5} - \frac{5}{8} = \frac{56}{40} - \frac{25}{40} = \frac{31}{40}$

g) $\frac{9}{8} - \frac{2}{7} = \frac{63}{56} - \frac{16}{56} = \frac{47}{56}$

[R] Solve:

a) $\frac{1}{5} + \frac{1}{7} = \frac{12}{35}$ b) $\frac{3}{8} + \frac{3}{5} = \frac{39}{40}$

c) $\frac{2}{3} + \frac{3}{8} = \frac{16}{24} + \frac{9}{24} = \frac{25}{24}$

d) $\frac{4}{5} + \frac{2}{7} = \frac{28}{35} + \frac{10}{35} = \frac{38}{35}$

Lesson	47 /120	Curriculum	B6.1.3.1.2 (p.132) e.g.1,2
Teaching Tips	Encourage learners to write in their exercise books. The more they write, the better their writing skills will become.		
Objective	Be able to solve additions and subtractions of mixed fractions whose denominator is the multiple of the other.		
Introduction (sample)	Show how to add or subtract improper fractions. This lesson includes simplifying fractions and converting improper fractions to mixed fractions when presenting an answer as shown on the board.		
Teacher's Note	- Learners must convert improper fractions to mixed fractions when they answer. - In the exam, learners should convert improper fractions to mixed fractions. - The common denominator is not the product of two denominators in this lesson.		

<Mental Maths>

a) $2 \times 4 = 8$ b) $8 \times 4 = 32$ c) $8 \times 5 = 40$

d) $8 \times 6 = 48$ e) $9 \times 7 = 63$

<Homework>

Solve:

a) $\frac{4}{3} + \frac{4}{5} = 2\frac{2}{15}$ b) $\frac{11}{5} - \frac{4}{3} = \frac{13}{15}$

c) $\frac{9}{8} + \frac{3}{6} = 1\frac{5}{8}$ d) $\frac{20}{6} - \frac{10}{4} = \frac{5}{6}$

Improper fractions should be converted to mixed fractions.

L47: Add and subtract improper fractions with different denominators

$$\frac{5}{3} + \frac{4}{5} = \frac{25}{15} + \frac{12}{15} = \frac{37}{15} = 2\frac{7}{15}$$

$$\frac{10}{4} - \frac{5}{6} = \frac{30}{12} - \frac{10}{12} = \frac{20}{12} = \frac{5}{3} = 1\frac{2}{3}$$

[1] Solve:

a) $\frac{6}{5} + \frac{7}{4} = \frac{24}{20} + \frac{35}{20} = \frac{59}{20} = 2\frac{19}{20}$

b) $\frac{5}{3} - \frac{8}{7} = \frac{35}{21} - \frac{24}{21} = \frac{11}{21}$

c) $\frac{5}{6} + \frac{3}{8} = \frac{20}{24} + \frac{9}{24} = \frac{29}{24} = 1\frac{5}{24}$

d) $\frac{9}{4} - \frac{3}{6} = \frac{27}{12} - \frac{6}{12} = \frac{21}{12} = 1\frac{3}{4}$

[2] Solve:

a) $\frac{7}{4} + \frac{5}{3} = \frac{21}{12} + \frac{20}{12} = \frac{41}{12} = 3\frac{5}{12}$

b) $\frac{8}{5} - \frac{4}{7} = \frac{56}{35} - \frac{20}{35} = \frac{36}{35} = 1\frac{1}{35}$

c) $\frac{9}{4} + \frac{7}{10} = \frac{45}{20} + \frac{14}{20} = \frac{59}{20} = 2\frac{19}{20}$

d) $\frac{7}{6} - \frac{7}{10} = \frac{35}{30} - \frac{21}{30} = \frac{14}{30} = \frac{7}{15}$

e) $\frac{11}{8} - \frac{3}{12} = \frac{33}{24} - \frac{6}{24} = \frac{27}{24} = 1\frac{1}{8}$

[R] Solve:

a) $\frac{4}{5} - \frac{2}{3} = \frac{12}{15} - \frac{10}{15} = \frac{2}{15}$

b) $\frac{5}{6} - \frac{3}{7} = \frac{35}{42} - \frac{18}{42} = \frac{17}{42}$

c) $\frac{4}{3} - \frac{3}{7} = \frac{28}{21} - \frac{9}{21} = \frac{19}{21}$

Lesson	48 /120	Curriculum	B6.1.3.1.2 (p.132) e.g.1,2
Teaching Tips	Have learners read the sentences, pointing to each word with your finger. Support learners if they have difficulty reading any of the words.		
Objective	Be able to add and subtract improper fractions with different denominators.		
Introduction (sample)	Show how to solve the following addition and subtraction. a) $1\frac{3}{5} + 2\frac{2}{3} = \frac{8}{5} + \frac{8}{3} = \frac{24}{15} + \frac{40}{15} = \frac{64}{15} = 4\frac{4}{15}$ b) $2\frac{1}{4} - \frac{5}{6} = \frac{9}{4} - \frac{5}{6} = \frac{27}{12} - \frac{10}{12} = \frac{17}{12} = 1\frac{5}{12}$		
Teacher's Note	This lesson is the integration of L43-46. Learners must convert improper fractions to mixed fractions when they answer.		

<Mental Maths>

- a) $2 \times 5 = 10$ b) $7 \times 5 = 35$ c) $7 \times 6 = 42$
 d) $9 \times 6 = 54$ e) $9 \times 8 = 72$

<Homework>

- a) $1\frac{1}{3} + 2\frac{1}{2} = 3\frac{5}{6}$ b) $1\frac{3}{4} - \frac{1}{3} = 1\frac{5}{12}$
 c) $2\frac{2}{4} + 1\frac{1}{6} = 3\frac{2}{3}$ d) $2\frac{3}{10} - \frac{13}{15} = 1\frac{13}{30}$

L48: Add and subtract mixed fractions with different denominators

[1] Solve:

a) $2\frac{1}{2} + \frac{1}{3} = \frac{5}{2} + \frac{1}{3}$
 $= \frac{15}{6} + \frac{2}{6} = \frac{17}{6} = 2\frac{5}{6}$

b) $1\frac{1}{4} - \frac{2}{3} = \frac{5}{4} - \frac{2}{3}$
 $= \frac{15}{12} - \frac{8}{12} = \frac{7}{12}$

c) $1\frac{2}{4} + 1\frac{1}{6} = \frac{6}{4} + \frac{7}{6}$
 $= \frac{18}{12} + \frac{14}{12} = \frac{32}{12} = 2\frac{2}{3}$

.....
 [2] Solve:

a) $1\frac{2}{3} + 1\frac{1}{2} = \frac{5}{3} + \frac{3}{2}$
 $= \frac{10}{6} + \frac{9}{6} = \frac{19}{6} = 3\frac{1}{6}$

b) $1\frac{2}{5} - \frac{3}{4} = \frac{7}{5} - \frac{3}{4}$
 $= \frac{28}{20} - \frac{15}{20} = \frac{13}{20}$

c) $1\frac{5}{6} + \frac{7}{15} = \frac{11}{6} + \frac{7}{15}$
 $= \frac{55}{30} + \frac{14}{30} = \frac{69}{30} = 2\frac{3}{10}$

d) $3\frac{1}{3} - 1\frac{2}{5} = \frac{10}{3} - \frac{7}{5}$
 $= \frac{50}{15} - \frac{21}{15} = \frac{29}{15} = 1\frac{14}{15}$

[R] Solve:

a) $\frac{5}{4} + \frac{5}{3} = 2\frac{11}{12}$ b) $\frac{8}{3} - \frac{6}{7} = 1\frac{17}{21}$

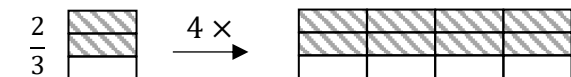
c) $\frac{7}{4} + \frac{5}{6} = 2\frac{7}{12}$ d) $\frac{11}{6} - \frac{5}{8} = 1\frac{5}{24}$

Lesson	49 /120	Curriculum	B6.1.3.1.2 (p.133) e.g.1
Teaching Tips	Encourage learners to memorise as many words as possible (not just 1 or 2 letters) when copying from the board.		
Objective	Understand how to multiply (whole number) × (fraction) including improper fractions.		
Introduction (sample)	- Draw a square whose $\frac{2}{3}$ parts are shaded and a diagram to show the $4 \times \frac{2}{3}$. - Explain how many $\frac{1}{3}$ are in total in two ways, i.e. repeated addition and multiplication as shown on the board.		
Teacher's Note	- If the answer is an improper fraction, it should be converted to a mixed fraction. However, we leave it as it is up to L53 to focus on the objective of each lesson. - Link the idea of repeated addition. But encourage learners to use multiplication because repeated addition is not applicable in the later grade.		

Each rectangle shows $\frac{1}{3}$ of a square. There are 8 parts of $\frac{1}{3}$.

L49: Solve

(Whole number) × (fraction)



$$4 \times \frac{2}{3} \rightarrow \frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} = \frac{8}{3}$$

$$4 \times \frac{2}{3} = \frac{4 \times 2}{3} = \frac{8}{3}$$

[1] Solve:

a) $3 \times \frac{1}{2} = \frac{3 \times 1}{2} = \frac{3}{2}$ b) $2 \times \frac{3}{5} = \frac{2 \times 3}{5} = \frac{6}{5}$
c) $5 \times \frac{2}{3} = \frac{5 \times 2}{3} = \frac{10}{3}$ d) $6 \times \frac{4}{5} = \frac{6 \times 4}{5} = \frac{24}{5}$

e) $5 \times \frac{7}{4} = \frac{5 \times 7}{4} = \frac{35}{4}$ f) $8 \times \frac{5}{3} = \frac{8 \times 5}{3} = \frac{40}{3}$

[2] Solve:

a) $5 \times \frac{1}{3} = \frac{5 \times 1}{3} = \frac{5}{3}$ b) $4 \times \frac{3}{5} = \frac{4 \times 3}{5} = \frac{12}{5}$

c) $5 \times \frac{3}{4} = \frac{5 \times 3}{4} = \frac{15}{4}$ d) $3 \times \frac{3}{7} = \frac{3 \times 3}{7} = \frac{9}{7}$

e) $4 \times \frac{5}{3} = \frac{4 \times 5}{3} = \frac{20}{3}$ f) $3 \times \frac{5}{2} = \frac{3 \times 5}{2} = \frac{15}{2}$

<Mental Maths>

a) $2 \times 6 = 12$ b) $2 \times 9 = 18$ c) $3 \times 5 = 15$

d) $3 \times 8 = 24$ e) $4 \times 5 = 20$

<Homework>

Solve:

a) $5 \times \frac{1}{4} = \frac{5}{4}$ b) $3 \times \frac{3}{5} = \frac{9}{5}$

c) $7 \times \frac{4}{3} = \frac{28}{3}$ d) $6 \times \frac{7}{5} = \frac{42}{5}$

g) $8 \times \frac{4}{3} = \frac{8 \times 4}{3} = \frac{32}{3}$ h) $9 \times \frac{8}{5} = \frac{9 \times 8}{5} = \frac{72}{5}$

[R] Solve:

a) $1\frac{1}{3} + 2\frac{1}{2} = 3\frac{5}{6}$ b) $1\frac{1}{3} - \frac{3}{5} = \frac{11}{15}$

c) $2\frac{1}{4} + 1\frac{1}{6} = 3\frac{5}{12}$ d) $2\frac{2}{5} - \frac{3}{4} = 1\frac{13}{20}$

Lesson	50 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. - After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L46, [2]: L47, [3]: L48, [4]: L49.		

<Mental Maths>

a) $2 \times 7 = 14$ b) $3 \times 3 = 9$ c) $3 \times 6 = 18$

d) $3 \times 9 = 27$ e) $4 \times 6 = 24$

<Homework>

*No homework.

L50: Review

[1] Solve:

a) $\frac{3}{7} - \frac{1}{5} = \frac{15}{35} - \frac{7}{35} = \frac{8}{35}$

b) $\frac{3}{4} - \frac{4}{9} = \frac{27}{36} - \frac{16}{36} = \frac{11}{36}$

c) $\frac{5}{4} - \frac{1}{3} = \frac{15}{12} - \frac{4}{12} = \frac{11}{12}$

[2] Solve:

a) $\frac{5}{4} + \frac{7}{3} = \frac{15}{12} + \frac{28}{12} = \frac{43}{12} = 3\frac{7}{12}$

b) $\frac{7}{6} - \frac{3}{10} = \frac{35}{30} - \frac{9}{30} = \frac{26}{30} = \frac{13}{15}$

[3] Solve:

a) $1\frac{1}{6} + \frac{11}{15} = \frac{7}{6} + \frac{11}{15}$
 $= \frac{35}{30} + \frac{22}{30} = \frac{57}{30} = 1\frac{9}{10}$

b) $3\frac{2}{3} - 1\frac{4}{5} = \frac{11}{3} - \frac{9}{5}$
 $= \frac{55}{15} - \frac{27}{15} = \frac{28}{15} = 1\frac{13}{15}$

[4] Solve:

a) $7 \times \frac{3}{4} = \frac{7 \times 3}{4} = \frac{21}{4}$

b) $3 \times \frac{4}{7} = \frac{3 \times 4}{7} = \frac{12}{7}$

c) $8 \times \frac{5}{3} = \frac{8 \times 5}{3} = \frac{40}{3}$

Lesson	52 /120	Curriculum	B6.1.3.1.3 (p.133) e.g.2
Teaching Tips	While you are writing on the board, let learners copy it in their exercise books.		
Objective	Ba able to solve (whole number) × (improper fraction).		
Introduction (sample)	Show how to solve (whole number) × (improper fraction) by swapping the order as shown on the board. The order of numbers has been swapped to build on the content covered in the previous lesson.		
Teacher's Note	- Let learners remember that order of numbers in multiplication can be swapped. - Teach by swapping the order of multiplication first to help learners grasp the concept. However, to prevent mistakes, let learners solve problems without changing the order of multiplication. $\frac{2}{3} \times 4$ means $\frac{2}{3}$ groups of 4 which does not make sense. Hence, we swap them.		

<Mental Maths>

- a) $4 \times 8 = 32$ b) $5 \times 6 = 30$ c) $5 \times 9 = 45$
d) $6 \times 8 = 48$ e) $7 \times 8 = 56$

<Homework>

Solve:

- a) $\frac{1}{4} \times 3 = \frac{3}{4}$ b) $\frac{5}{6} \times 5 = \frac{25}{6}$
c) $\frac{7}{4} \times 6 = \frac{21}{2}$ d) $\frac{4}{6} \times 15 = 10$

Confirm that it is the same without swapping the order as shown on the board.

L52: Solve

(Improper fraction) × (Whole number)

$$\frac{2}{3} \times 4 = 4 \times \frac{2}{3} = \frac{4 \times 2}{3} = \frac{8}{3}$$

$$\frac{3}{4} \times 6 = \frac{3 \times 6}{4} = \frac{9}{2}$$

[1] Solve:

a) $\frac{2}{5} \times 3 = \frac{2 \times 3}{5} = \frac{6}{5}$ b) $\frac{2}{3} \times 4 = \frac{2 \times 4}{3} = \frac{8}{3}$

c) $\frac{1}{6} \times 3 = \frac{1 \times 3}{6} = \frac{1}{2}$

d) $\frac{5}{4} \times 6 = \frac{5 \times 6}{4} = \frac{15}{2}$

e) $\frac{4}{3} \times 12 = \frac{4 \times 12}{3} = 16$

f) $\frac{9}{6} \times 8 = \frac{3 \times 8}{2} = 12$

[2] Solve:

a) $\frac{1}{3} \times 4 = \frac{1 \times 4}{3} = \frac{4}{3}$ b) $\frac{1}{4} \times 7 = \frac{1 \times 7}{4} = \frac{7}{4}$

c) $\frac{3}{5} \times 2 = \frac{3 \times 2}{5} = \frac{6}{5}$ d) $\frac{4}{3} \times 2 = \frac{4 \times 2}{3} = \frac{8}{3}$

e) $\frac{5}{4} \times 6 = \frac{5 \times 6}{4} = \frac{15}{2}$

f) $\frac{5}{6} \times 12 = \frac{5 \times 12}{6} = 10$

g) $\frac{8}{20} \times 5 = \frac{2 \times 5}{5} = 2$

h) $\frac{6}{4} \times 6 = \frac{3 \times 6}{2} = 9$

[R] Solve:

a) $4 \times \frac{5}{6} = \frac{4 \times 5}{6} = \frac{10}{3}$

b) $8 \times \frac{9}{4} = \frac{8 \times 9}{4} = 18$

c) $18 \times \frac{10}{4} = \frac{18 \times 5}{2} = 45$

Lesson	53 /120	Curriculum	B6.1.3.1.3 (p.133) e.g.2
Teaching Tips	Have learners repeat what you said to check their understanding.		
Objective	Be able to solve (fraction) × (fraction).		
Introduction (sample)	- Show how to calculate (fraction) × (fraction) as shown on the board. - Draw a 1 × 1 square. Then, make the side $\frac{2}{3}$ and $\frac{4}{5}$. Find the area using the formula to find the area of rectangle.		
Teacher's Note	Let learners remember that the area of rectangle is L × B, where L is the length (longer side) and B is the breadth (shorter side).		

<Mental Maths>

a) $4 \times 9 = 36$ b) $5 \times 7 = 35$ c) $6 \times 6 = 36$

d) $6 \times 9 = 54$ e) $7 \times 9 = 63$

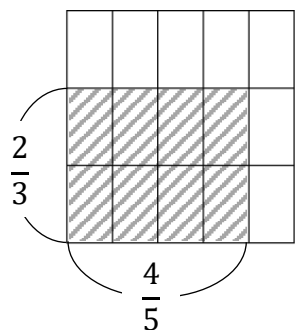
<Homework>

Solve:

a) $\frac{1}{4} \times \frac{1}{3} = \frac{1 \times 1}{4 \times 3} = \frac{1}{12}$ b) $\frac{3}{5} \times \frac{3}{4} = \frac{3 \times 3}{5 \times 4} = \frac{9}{20}$

c) $\frac{7}{3} \times \frac{5}{4} = \frac{7 \times 5}{3 \times 4} = \frac{35}{12}$ d) $\frac{9}{7} \times \frac{5}{4} = \frac{9 \times 5}{7 \times 4} = \frac{45}{28}$

L53: (fraction) × (fraction)



$$\frac{4}{5} \times \frac{2}{3} = \frac{4 \times 2}{5 \times 3} = \frac{8}{15}$$

[1] Solve:

a) $\frac{1}{2} \times \frac{1}{3} = \frac{1 \times 1}{2 \times 3} = \frac{1}{6}$ b) $\frac{1}{3} \times \frac{2}{7} = \frac{1 \times 2}{3 \times 7} = \frac{2}{21}$

c) $\frac{3}{4} \times \frac{5}{2} = \frac{3 \times 5}{4 \times 2} = \frac{15}{8}$ d) $\frac{7}{4} \times \frac{3}{5} = \frac{7 \times 3}{4 \times 5} = \frac{21}{20}$

e) $\frac{5}{4} \times \frac{5}{3} = \frac{5 \times 5}{4 \times 3} = \frac{25}{12}$ f) $\frac{7}{6} \times \frac{9}{8} = \frac{7 \times 9}{6 \times 8} = \frac{63}{48}$

[2] Solve:

a) $\frac{1}{2} \times \frac{1}{2} = \frac{1 \times 1}{2 \times 2} = \frac{1}{4}$ b) $\frac{4}{5} \times \frac{2}{3} = \frac{4 \times 2}{5 \times 3} = \frac{8}{15}$

c) $\frac{4}{9} \times \frac{2}{3} = \frac{4 \times 2}{9 \times 3} = \frac{8}{27}$ d) $\frac{3}{8} \times \frac{3}{4} = \frac{3 \times 3}{8 \times 4} = \frac{9}{32}$

e) $\frac{3}{4} \times \frac{5}{4} = \frac{3 \times 5}{4 \times 4} = \frac{15}{16}$ f) $\frac{5}{4} \times \frac{5}{2} = \frac{5 \times 5}{4 \times 2} = \frac{25}{8}$

g) $\frac{9}{5} \times \frac{7}{2} = \frac{9 \times 7}{5 \times 2} = \frac{63}{10}$ h) $\frac{7}{5} \times \frac{7}{3} = \frac{7 \times 7}{5 \times 3} = \frac{49}{15}$

[R] Solve:

a) $\frac{1}{2} \times 3 = \frac{1 \times 3}{2} = \frac{3}{2} = 1\frac{1}{2}$

b) $\frac{3}{5} \times 7 = \frac{3 \times 7}{5} = \frac{21}{5} = 4\frac{1}{5}$

c) $\frac{5}{4} \times 6 = \frac{5 \times 6}{4} = \frac{15}{2} = 7\frac{1}{2}$

d) $\frac{6}{15} \times 5 = \frac{2 \times 5}{5} = 2$

Lesson	55 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. - After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L51, [2]: L52, [3]: L53, [4]: L54.		

<Mental Maths>

a) $8 \times 9 = 72$ b) $4 \times 2 = 8$ c) $4 \times 3 = 12$

d) $8 \times 2 = 16$ e) $5 \times 4 = 20$

<Homework>

*No homework.

L55: Review

[1] Solve:

a) $6 \times \frac{3}{4} = \frac{6^3 \times 3}{4_2} = \frac{9}{2}$

b) $8 \times \frac{5}{12} = \frac{8^2 \times 5}{12_3} = \frac{10}{3}$

c) $8 \times \frac{5}{4} = \frac{8^2 \times 5}{4_1} = 10$

[2] Solve:

a) $\frac{3}{4} \times 7 = \frac{3 \times 7}{4} = \frac{21}{4}$

b) $\frac{7}{20} \times 5 = \frac{7 \times 5^1}{20_4} = \frac{7}{4}$

c) $\frac{4}{3} \times 9 = \frac{4 \times 9^3}{3_1} = 12$

[3] Solve:

a) $\frac{4}{9} \times \frac{2}{3} = \frac{4 \times 2}{9 \times 3} = \frac{8}{27}$

b) $\frac{3}{8} \times \frac{3}{4} = \frac{3 \times 3}{8 \times 4} = \frac{9}{32}$

c) $\frac{3}{4} \times \frac{5}{4} = \frac{3 \times 5}{4 \times 4} = \frac{15}{16}$

d) $\frac{5}{4} \times \frac{5}{2} = \frac{5 \times 5}{4 \times 2} = \frac{25}{8}$

[4] Solve:

a) $\frac{2}{3} \times \frac{1}{6} = \frac{2^1 \times 1}{3 \times 6_3} = \frac{1}{9}$

b) $\frac{4}{9} \times \frac{12}{5} = \frac{4 \times 12^4}{9_3 \times 5} = \frac{16}{15}$

c) $\frac{9}{14} \times \frac{7}{12} = \frac{9^3 \times 7^1}{14_2 \times 12_4} = \frac{3}{8}$

d) $\frac{15}{7} \times \frac{28}{5} = \frac{15^3 \times 28^4}{7_1 \times 5_1} = \frac{12}{1} = 12$

Lesson	56 /120	Curriculum	B6.1.3.1.3 (p.133) e.g.1-3
Teaching Tips	Have learners recall what they learned in previous lessons.		
Objective	Solve (mixed fraction) $\times$ (mixed fraction) using simplification.		
Introduction (sample)	Show how to solve the following (no need to swap). Improper fractions should be converted to mixed fractions.		
Teacher's Note	- Simplifying the fraction before converting the mixed fraction to the improper fraction is faster. - In the exam, learners should convert improper fractions to mixed fractions. - This lesson is the integration of L51-54. Learners must convert improper fractions to mixed fractions when they answer in this lesson and in the exams.		

<Mental Maths>

- a) $9 \times 9 = 81$ b) $5 \times 2 = 10$ c) $7 \times 2 = 14$
d) $9 \times 2 = 18$ e) $7 \times 3 = 21$

<Homework>

Solve:

- a) $1\frac{3}{5} \times 2\frac{1}{4} = 3\frac{3}{5}$ b) $1\frac{7}{8} \times 1\frac{1}{9} = 2\frac{1}{12}$
c) $1\frac{1}{8} \times 1\frac{1}{15} = 1\frac{1}{5}$ d) $2\frac{1}{7} \times 2\frac{4}{5} = 6$

L56: Multiplying mixed fractions

$$3\frac{3}{5} \times 2\frac{1}{12} = \frac{18}{5} \times \frac{35}{12}$$

$$= \frac{18^3 \times 35^5}{5_1 \times 12_2} = \frac{15}{2} = 10\frac{1}{2}$$

[1] Solve:

$$\text{a) } 1\frac{1}{4} \times 2\frac{2}{3} = \frac{5}{4} \times \frac{8}{3} = \frac{5 \times 8^2}{4_1 \times 3} = \frac{10}{3} = 3\frac{1}{3}$$

$$\text{b) } 4\frac{2}{3} \times 1\frac{6}{7} = \frac{14}{3} \times \frac{13}{7}$$

$$= \frac{14^2 \times 13}{3 \times 7_1} = \frac{26}{3} = 8\frac{2}{3}$$

$$\text{c) } 2\frac{5}{8} \times 2\frac{2}{9} = \frac{21}{8} \times \frac{20}{9}$$

$$= \frac{21^7 \times 20^5}{8_2 \times 9_3} = \frac{35}{6} = 5\frac{5}{6}$$

[2] Solve:

$$\text{a) } 1\frac{5}{6} \times 2\frac{1}{4} = \frac{11}{6} \times \frac{9}{4} = \frac{11 \times 9^3}{6_2 \times 4} = \frac{33}{8} = 4\frac{1}{8}$$

$$\text{b) } 2\frac{2}{5} \times 2\frac{1}{3} = \frac{12}{5} \times \frac{7}{3}$$

$$= \frac{12^4 \times 7}{5 \times 3_1} = \frac{28}{5} = 5\frac{3}{5}$$

$$\text{c) } 2\frac{1}{4} \times 4\frac{2}{3} = \frac{9}{4} \times \frac{14}{3}$$

$$= \frac{9^3 \times 14^7}{4_2 \times 3_1} = \frac{21}{2} = 10\frac{1}{2}$$

$$\text{d) } 1\frac{3}{7} \times 1\frac{13}{15} = \frac{10}{7} \times \frac{28}{15}$$

$$= \frac{10^2 \times 28^4}{7_1 \times 15_3} = \frac{8}{3} = 2\frac{2}{3}$$

[R] Solve:

$$\text{a) } \frac{3}{4} \times \frac{1}{6} = \frac{1}{8} \quad \text{b) } \frac{4}{15} \times \frac{9}{5} = \frac{12}{25}$$

$$\text{c) } \frac{9}{14} \times \frac{7}{12} = \frac{3}{8} \quad \text{d) } \frac{30}{7} \times \frac{21}{10} = 9$$

Lesson	57 /120	Curriculum	B6.1.4.1.1 (p.134) e.g.1,2
Teaching Tips	Organise the board so that others can understand the lesson content just by looking at it.		
Objective	Understand the meaning and representation of ratio.		
Introduction (sample)	- Prepare 10 cups (same size). You cook Banku by mixing 4 cups of cornmeal and 2 cups of cassava with 6 cups of water. No need to fill in the cups with real objects. - Write the ratio of cornmeal to cassava using ratio symbol as shown on the board. - What is the ratio of: a) cornmeal to water? b) cassava to water?		
Teacher's Note	- This is an introduction lesson of ratio. - It is also good to find ratio around learner's daily life. (e.g. food and beverage packaging, teacher-pupil ratio or pupil-textbook ratio.)		

<Mental Maths>

- a) $3 \times 2 = 6$ b) $6 \times 2 = 12$ c) $5 \times 3 = 15$
 d) $6 \times 3 = 18$ e) $8 \times 3 = 24$

<Homework>

In a box, there are 12 pencils, 8 erasers, and 4 rulers. Find the ratio:

- a) Pencil : Eraser = 12:8
 b) Eraser : Ruler = 8:4
 c) Ruler : Pencil = 4:12

L57: Understand ratio

Cornmeal:Cassava = 4:2

Cornmeal:Water = 4:6

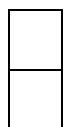
Cassava:Water = 2:6

[1] There are 5 oranges, 4 mangoes and 7 papayas. Find the ratio:

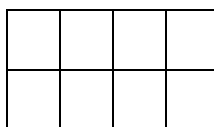
- a) Orange:Mango = **5:4**
 b) Mango:Papaya = **4:7**
 c) Orange:Papaya = **5:7**



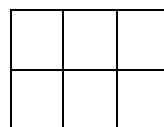
[2] There are three rooms.



A



B



C

- a) Room A: Room B = **2:8**
 b) Room B: Room C = **8:6**
 c) Room A: Room C = **2:6**
 d) Room B: Room A = **8:2**

Note that a) and d) swapped the order of the ratio.

[R]

$$\text{a) } 2\frac{1}{3} \times 1\frac{2}{5} = \frac{7}{3} \times \frac{7}{5} = \frac{49}{15} = 3\frac{4}{15}$$

$$\begin{aligned} \text{b) } 1\frac{1}{6} \times 2\frac{1}{4} &= \frac{7}{6} \times \frac{9}{8} \\ &= \frac{7 \times 9}{6_2 \times 8} = \frac{21}{16} = 1\frac{5}{16} \end{aligned}$$

$$\text{c) } 2\frac{4}{5} \times 1\frac{3}{7} = \frac{14}{5} \times \frac{10}{7} = \frac{14^2 \times 10^2}{5_1 \times 7_1} = \frac{4}{1} = 4$$

Lesson	58 /120	Curriculum	B6.1.4.1.2 (p.135) e.g.1
Teaching Tips	If more than half of the learners cannot solve the first task, explain how to solve it using it.		
Objective	Be able to find and use the ratio as a fraction.		
Introduction (sample)	- When two sticks, one 50 cm and the other 150 cm, are stood upright, their shadow lengths are measured as 30 cm and 90 cm, respectively. Investigate the ratio of the length of each stick to the length of its shadow as shown on the board. This is called a "ratio as a fraction". - In the example, they are called equivalent ratio.		
Teacher's Note	- It is better if you can measure the length of shadows by yourself. - It is important to know that "the ratio is equal" and "the difference is equal" are two different concepts. - An easy way to remember "ratio as a fraction" is that if you add a horizontal line between the ratio symbol (:) it becomes a division symbol (÷).		

<Mental Maths>

- a) $6 \times 4 = 24$ b) $6 \times 5 = 30$ c) $9 \times 4 = 36$
d) $9 \times 5 = 45$ e) $8 \times 7 = 56$

<Homework>

Answer as [1A].

- a) $3:5 = \frac{3}{5}$ b) $8:2 = \frac{8}{2} = 4$
c) $15:12 = \frac{15}{12} = \frac{5}{4}$

L58: Ratio as a fraction

Short 30:50

$$\rightarrow 30 \div 50 = \frac{30}{50} = \frac{3}{5}$$

Long 90:150

$$\rightarrow 90 \div 150 = \frac{90}{150} = \frac{3}{5}$$

Hence, $30:50 = 90:150$

[1A] Find the ratio as a fraction.

a) $2:5 = \frac{2}{5}$ b) $6:3 = \frac{6}{3} = 2$

[1B] Check if the two ratios are equivalent.

a) $4:8 = 6:12$ b) $2:3 \neq 3:4$

$\frac{4}{8} = \frac{6}{12}$ $\frac{2}{3} \neq \frac{3}{4}$

[2A] Answer as [1A].

a) $4:7 = \frac{4}{7}$ b) $12:4 = \frac{12}{4} = 3$

c) $10:25 = \frac{10}{25} = \frac{2}{5}$

[2B] Answer as [1B].

a) $4:6 = 8:12$ b) $6:9 \neq 2:4$

$\frac{4}{6} = \frac{8}{12}$ $\frac{6}{9} \neq \frac{2}{4}$

[R] There are five pens, six erasers and three books.

a) Pen:Eraser = $5:6$

b) Eraser:Book = $6:3$

Lesson	59 /120	Curriculum	B6.1.4.1.2 (p.135) e.g.1
Teaching Tips	Have learners copy everything from the board into their exercise books.		
Objective	Be able to compare and order ratio as a fraction.		
Introduction (sample)	Show how to compare ratios as shown on the board. It is important to simplify the fractions to compare.		
Teacher's Note	- Note that comparing and ordering are not separate topics, as ordering numbers requires comparing each value. - Learners are expected to make the denominators the same.		

<Mental Maths>

- a) $9 \times 3 = 27$ b) $8 \times 4 = 32$ c) $8 \times 5 = 40$
d) $8 \times 6 = 48$ e) $9 \times 7 = 63$

<Homework>

Answer as [1].

- a) $1:3 < 3:1$ b) $12:4 < 16:4$
 $\frac{1}{2}$ $\frac{2}{1}$ $\frac{12^3}{4_1}$ $\frac{16^4}{4_1}$
c) $3:6 = 15:30$ d) $5:4 > 8:10$
 $\frac{3^2}{3_1}$ $\frac{15^1}{30_2}$ $\frac{5}{4}$ $\frac{8^4}{10_5}$

L59: Compare and order ratio

$$4:3 > 3:4 \quad 12:6 = 8:4 \quad 32:8 < 25:5$$

$$\frac{4}{3} \quad \frac{3}{4} \quad \frac{12^2}{6_1} \quad \frac{8^2}{4_1} \quad \frac{32^4}{8_1} \quad \frac{25^5}{5_1}$$

[1] Write <, > or =.

a) $1:2 < 2:1$ b) $12:4 > 10:5$

$$\frac{1}{2} \quad \frac{2}{1} \quad \frac{12^3}{4_1} \quad \frac{10^2}{5_1}$$

c) $3:4 < 10:8$ d) $4:6 = 20:30$

$$\frac{3}{4} \quad \frac{10^5}{8_4} \quad \frac{4^2}{6_3} \quad \frac{20^2}{30_3}$$

e) $10:20 < 6:8$ f) $4:5 > 3:4$

$$\frac{10^1}{20_2} = \frac{2}{4} \quad \frac{6^3}{8_4} \quad \frac{4}{5} \quad \frac{3}{4}$$

.....
[2A] Answer as [1].

a) $4:5 > 9:15$ b) $7:12 < 24:32$

$$\frac{4}{5} \quad \frac{9^3}{15_5} \quad \frac{7}{12} \quad \frac{24^3}{32_4} = \frac{9}{12}$$

[2B] Order from small to big.

a) $6:8, 5:20, 6:12$ **5:20, 6:12, 6:8**

$$\frac{6^3}{8_4} \quad \frac{5^1}{20_4} \quad \frac{6^2}{12_4}$$

b) $10:30, 7:28, 4:24$ **7:28, 10:30, 12:24**

$$\frac{10^1}{30_3} \quad \frac{7^1}{28_4} \quad \frac{12^1}{24_2}$$

[R] Check if the two ratios are equivalent.

a) $4:5 \neq 3:4$ b) $2:8 = 3:12$

$$\frac{4}{5} \quad \frac{3}{4} \quad \frac{2^1}{8_4} \quad \frac{3^1}{12_4}$$

Lesson	60 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. - After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L56, [2]: L57, [3]: L58, [4]: L59.		

<Mental Maths>

a) $7 \times 4 = 28$ b) $7 \times 5 = 35$ c) $7 \times 6 = 42$
d) $9 \times 6 = 54$ e) $9 \times 8 = 72$

<Homework>

*No homework.

L60: Review

[1] Solve:

$$a) 2\frac{1}{4} \times 1\frac{5}{6} = \frac{9}{4} \times \frac{11}{6} = \frac{9^3 \times 11}{4 \times 6_2} = \frac{33}{8} = 4\frac{1}{8}$$

$$c) 2\frac{2}{9} \times 2\frac{5}{8} = \frac{20}{9} \times \frac{21}{8} = \frac{20^5 \times 21^7}{9_3 \times 8_2} = \frac{35}{6} = 5\frac{5}{6}$$

[2] A basket contains 6 apples,
9 bananas, and 3 mangoes.

a) Apple:Banana = **6:9**

b) Banana:Mango = **9:3**

c) Mango:Apple = **3:6**

[3] Find the ratio as a fraction.

$$a) 2:5 = \frac{2}{5} \quad b) 6:3 = \frac{6^2}{3_1} = 2$$

[4] Write <, > or =.

$$a) 2:3 < 3:2 \quad b) 10:5 < 12:4$$

$$\frac{2}{3} \quad \frac{3}{2} \quad \frac{10^2}{5_1} \quad \frac{12^3}{4_1}$$

$$c) 6:3 > 10:6 \quad d) 15:10 = 30:20$$

$$\frac{6}{3} \quad \frac{10^5}{6_3} \quad \frac{15^3}{10_2} \quad \frac{30^3}{20_2}$$

Lesson	61 /120	Curriculum	B6.1.4.1.1 (p.134) e.g.3
Teaching Tips	Divide the board into two parts and copy the teacher manual as it is. Once learners have copied it, erase the left part to write the right part of the teacher manual.		
Objective	Understand the meaning of equivalent ratio and simplify ratio.		
Introduction (sample)	- Ask the word problem: "Out of 21 learners in a class, 6 are boys. Find the ratio of boys to girls in its simplest form." Find the number of girls first, i.e. $21 - 6 = 15$. - Show the relationship of two equivalent ratio as shown on the board. Then, simplify ratio 40:60 as a practice.		
Teacher's Note	- Do not write the word problem to avoid taking time. - It is important to find the rule of equivalent ratios and apply it.		

<Mental Maths>

- a) $20 \div 5 = 4$ b) $24 \div 4 = 6$ c) $27 \div 3 = 9$
d) $30 \div 5 = 6$ e) $35 \div 5 = 7$

<Homework>

The length of a rectangle is 200m and its width is 150m. Simplify the ratio.

$200:150 = 4:3$

If both numbers in the ratio a:b divided by the same number, the resulting ratio will always be equal to a:b.

L61: Understand equivalent ratio

$$\begin{array}{ccc} \div 3 & & \div 20 \\ \curvearrowright & & \curvearrowright \\ 6:15 = 2:5 & & 40:60 = 2:3 \\ \curvearrowleft & & \curvearrowleft \\ \div 3 & & \div 20 \end{array}$$

[1] Simplify:

$$\begin{array}{ll} \text{a) } 30:20 = 3:2 & \text{b) } 14:20 = 7:10 \\ \text{c) } 20:80 = 1:4 & \text{d) } 600:900 = 2:3 \end{array}$$

$$\begin{array}{ll} \text{e) } 42:35 = 6:5 & \text{f) } 54:63 = 6:7 \end{array}$$

[2A] Simplify:

$$\begin{array}{ll} \text{a) } 200:600 = 1:3 & \text{b) } 56:72 = 7:9 \end{array}$$

[2B] Out of 24 learners in a class, 10 are girls. Find the ratio of boys to girls in its simplest form.

There are $24 - 10 = 14$ boys.

$14:10 = 7:5$

[R] Order from big to small.

a) 6:10, 5:20, 6:15 $6:10, 6:15, 5:20$

$$\frac{6^3}{10_5} \quad \frac{4^1}{20_5} \quad \frac{6^2}{15_5}$$

b) 4:12, 6:30, 7:28 $4:12, 7:28, 6:30$

$$\frac{4^1}{12_3} \quad \frac{6^1}{30_5} \quad \frac{7^1}{28_4}$$

Lesson	62 /120	Curriculum	B6.1.4.2.1 (p.136) e.g.1,2
Teaching Tips	Encourage learners to write in their exercise books. The more they write, the better their writing skills will become.		
Objective	Be able to find equivalent ratio.		
Introduction (sample)	- Ask the word problem: "Kofi prepares banku by mixing cornmeal and cassava in a ratio of 4:3. If he uses 100g of cornmeal, how much cassava does he need?" - Show how to find equivalent fractions as shown on the board.		
Teacher's Note	- This lesson is about mapping diagrams, but it's not necessary to use that term. What's important is helping learners understand how to find equivalent ratios. - In L61, learners divided the left-hand side, whereas they need to multiply the ratio in this lesson. - Let learners understand that both multiplication and division does not change the value of ratio.		

<Mental Maths>

- a) $21 \div 3 = 7$ b) $24 \div 6 = 4$ c) $27 \div 9 = 3$
d) $30 \div 6 = 5$ e) $35 \div 7 = 5$

<Homework>

Kwame prepares banku by mixing cornmeal and cassava in a ratio of 3:2. If he uses 150g of cornmeal, how much cassava does he need?

$3:2 = 150:n$ $n = 100$,
She needs 100g of cassava

L62: Find equivalent ratio

$$\begin{array}{c} \times 30 \\ \curvearrowright \\ 5:4 = 150:n \\ \curvearrowleft \\ \times 30 \end{array} \quad n = 4 \times 30 = 120$$

[1] Identify the pair of equivalent ratios.

A	B
2:5	24:18
14:6	15:30
4:3	12:30
1:2	2:3
10:15	7:3

.....

[2A] Answer as [1].

A	B
7:5	32:56
4:7	5:3
15:9	42:30

[2B] Ama mixes sugar and flour in the ratio 4:5 to bake a cake.
If she uses 200g of sugar, how much flour does she need?

$4:5 = 200:n$ $n = 250$,
She needs 250g of flour

[R] There are 35 children in a playground. 21 are boys.
Write the ratio of boys to girls in simplest form.

There are $35 - 21 = 14$ girls.
 $21:14 = 3:2$

Lesson	63 /120	Curriculum	B6.1.4.1.2 (p.135) e.g.2
Teaching Tips	Have learners read the sentences, pointing to each word with your finger. Support learners if they have difficulty reading any of the words.		
Objective	Be able to find the amount using ratio.		
Introduction (sample)	- Ask the word problem: "The ratio of men to women in a meeting is 5 to 7. If there are 45 men, how many: a) women are there? b) people are there altogether?" - Show the relationship of two equivalent ratio as shown on the board.		
Teacher's Note	- It is important to find the rule of equivalent ratios and apply it. - If both numbers in the ratio a:b are multiplied or divided by the same number, the resulting ratio will always be equal to a:b.		

<Mental Maths>

- a) $21 \div 7 = 3$ b) $24 \div 8 = 3$ c) $28 \div 4 = 7$
d) $32 \div 4 = 8$ e) $36 \div 4 = 9$

<Homework>

- a) $5:3 = 15:n$ $n = 9$
b) $30:40 = 60:n$ $n = 80$
c) $4:6 = n:24$ $n = 16$
d) $25:45 = n:9$ $n = 5$

*"as shown on the board" in the introduction part is written here.
Let learners copy it during introduction time.*

L63: Find the amount of ratio

$$\begin{array}{c} \times 9 \\ \curvearrowright \\ 5:7 = 45:n \\ \curvearrowleft \\ \times 9 \end{array} \quad n = 63$$

[1] Find the unknown.

$$\begin{array}{ll} \text{a) } \begin{array}{c} \times 3 \\ \curvearrowright \\ 6:3 = 18:n \\ \curvearrowleft \\ \times 3 \end{array} & \text{b) } \begin{array}{c} \div 5 \\ \curvearrowright \\ 20:30 = 4:n \\ \curvearrowleft \\ \div 5 \end{array} \\ n = 9 & n = 6 \\ \text{c) } \begin{array}{c} \times 4 \\ \curvearrowright \\ 3:5 = n:20 \\ \curvearrowleft \\ \times 4 \end{array} & \text{d) } \begin{array}{c} \div 7 \\ \curvearrowright \\ 35:56 = n:8 \\ \curvearrowleft \\ \div 7 \end{array} \\ n = 12 & n = 5 \end{array}$$

[2A] Answer as [1B].

$$\begin{array}{ll} \text{a) } \begin{array}{c} \times 5 \\ \curvearrowright \\ 4:3 = 20:n \\ \curvearrowleft \\ \times 5 \end{array} & \text{b) } \begin{array}{c} \div 6 \\ \curvearrowright \\ 4:6 = n:36 \\ \curvearrowleft \\ \div 6 \end{array} \\ n = 15 & n = 24 \end{array}$$

[2B] The ratio of boys to girls in a classroom is 7 to 11.

If there are a total of 28 boys.
How many:

a) girls are there?

$$7:11 = 28:n \quad n = 44$$

b) boys and girls are there altogether?

$$28 + 44 = 72, 72 \text{ learners.}$$

[R] Simplify:

- a) $40:70 = 4:7$ b) $24:15 = 8:5$
c) $100:80 = 5:4$ d) $63:81 = 7:9$

Give [R] if you have time; skip it if not.

Lesson	64 /120	Curriculum	B6.1.4.2.3 (p.137) e.g.2-4
Teaching Tips	Encourage learners to memorise as many words as possible (not just 1 or 2 letters) when copying from the board.		
Objective	Understand the meaning of rate.		
Introduction (sample)	- Ask the following question verbally. “How many kilometers does the car travel with 1L of fuel?” a) Car A travels 40km with 2L. b) Car B travels 45km with 3L. - Ask, “which car can travel farther with the same amount of fuel?” Car A		
Teacher's Note	- Rate is a ratio that compares two different quantities measured in different units. - This lesson focuses on finding the per-unit quantity. The word problem above can be solved using the ratio shown in L63, i.e. 1:n = 3:45. - In [1], the unit can be km/L. However, it is not written in that way because the representation is not used in the curriculum.		

<Mental Maths>

- a) $24 \div 3 = 8$ b) $25 \div 5 = 5$ c) $28 \div 7 = 4$
d) $32 \div 8 = 4$ e) $36 \div 6 = 6$

<Homework>

What distance does 1cm on the map represent:

- a) if 2cm on a map represents 10km?

$$10 \div 2 = 5, 5\text{km}$$

- b) if 3cm on a map represents 45km?

$$45 \div 3 = 15, 15\text{km}$$

L64: Understand rate

Car A: $40 \div 2 = 20$, 20km per litre

Car B: $45 \div 3 = 15$, 15km per litre

[1A] How many kilometers does each car travel with 1L?

- a) Car A travels 48km with 4L.

$$48 \div 4 = 12, 12\text{km per L}$$

- b) Car B travels 51km with 3L.

$$51 \div 3 = 17, 17\text{km per L}$$

- c) Car C travels 75km with 5L.

$$75 \div 5 = 15, 15\text{km per L}$$

[1B] Which car can travel farther with the same amount of fuel?

Car B

[2A] What is the cost of each meat per kilogram?

- a) Beef is ₦360 for 3kg.

$$360 \div 3 = 120, \text{₦}120 \text{ per kg}$$

- b) Goat is ₦400 for 5kg.

$$400 \div 5 = 80, \text{₦}80 \text{ per kg}$$

- c) Chicken is ₦360 for 4kg.

$$360 \div 4 = 90, \text{₦}90 \text{ per kg}$$

[2B] Which meat is the:

- a) cheapest per kilogram? **Goat**
b) most expensive per kilogram? **Beaf**

[R] Find the unknown.

a) $6:4 = 18:n$ **$n = 12$**

b) $5:3 = n:21$ **$n = 35$**

c) $5:4 = n:200$ **$n = 250$**

Lesson	65 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L61, [2]: L62, [3]: L63, [4]: L64.		

<Mental Maths>

a) $36 \div 9 = 4$ b) $42 \div 7 = 6$ c) $48 \div 8 = 6$

d) $56 \div 7 = 8$ e) $64 \div 8 = 8$

<Homework>

*No homework.

L65: Review

[1] Simplify:

a) $40:30 = 4:3$ b) $16:20 = 4:5$

c) $400:600 = 2:3$

[2] Identify the pair of equivalent ratios.

A	B
2:5	25:15
5:3	25:50
7:2	28:8
1:2	20:50

[3] The ratio of boys to girls in a classroom is 5 to 9.

If there are a total of 36 girls.
How many:

a) boys are there?

$5:9 = n:36$ $n = 20$

b) boys and girls are there altogether?

$20 + 36 = 56$, 56 learners.

[4] How many kilometers does a car travel with 1L if it travels 54km with 6L of fuel?

$54 \div 6 = 9$, 9km per L

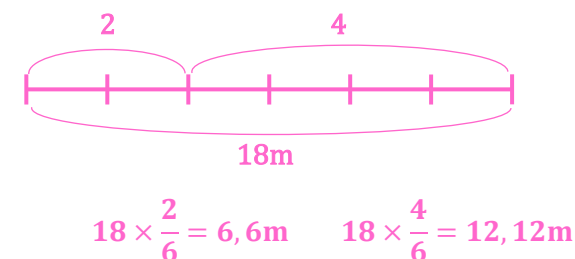
Lesson	68 /120	Curriculum	B6.1.4.1.2 (p.134) e.g.3
Teaching Tips	Have learners repeat what you said to check their understanding.		
Objective	Be able to determine each amount when a given quantity is divided in a fixed ratio.		
Introduction (sample)	- Ask, "Kofi cut a 20m rope in the ratio 2:3. How long is each piece?" Show how to draw a number line as shown on the board. - Then, find each amount.		
Teacher's Note	- In [1B], the question is related to the introduction. - Drawing a number line is key to understand the relationship visually. - This lesson is a preparation for the next lesson.		

<Mental Maths>

- a) $42 \div 6 = 7$ b) $48 \div 6 = 8$ c) $54 \div 9 = 6$
d) $63 \div 9 = 7$ e) $81 \div 9 = 9$

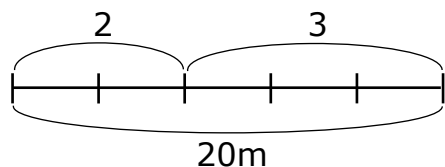
<Homework>

Answer as [1A] and [1B].



The denominator 5 is the sum of the ratio, i.e. $2 + 3 = 5$.

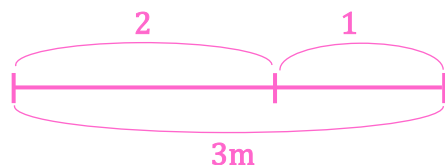
L68: Show the ratio by a number line



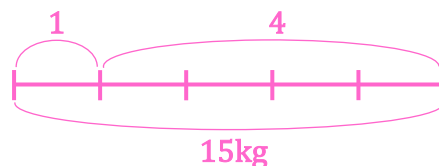
$$20 \times \frac{3}{5} = 12, 12m \quad 20 \times \frac{2}{5} = 8, 8m$$

[1A] Draw a number line which shows:

a) 2:1.



b) 1:4.

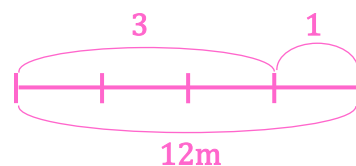


[1B] Find each amount in [1A] b).

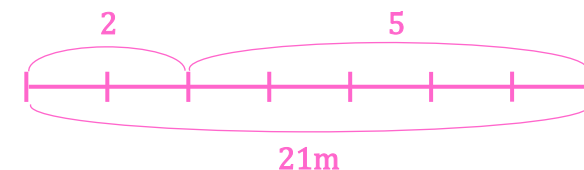
$$15 \times \frac{1}{5} = 3, 3kg \quad 15 \times \frac{4}{5} = 12, 12kg$$

[2A] Answer as [1A].

a) 3:1



b) 2:5



[2B] Find each amount in [2A] b).

$$21 \times \frac{2}{7} = 6, 6m \quad 21 \times \frac{5}{7} = 15, 15m$$

[R] If the rate is constant, fill in the table.

Oil (kg)	2	4	7	15
Price (¢)	120	240	420	60

$$12 \div 2 = 60$$

Lesson	69 /120	Curriculum	B6.1.4.1.1 (p.134) e.g.3
Teaching Tips	Select some learners to distribute exercise books before the lesson begins.		
Objective	Be able to determine each amount when a given quantity is divided in a fixed ratio.		
Introduction (sample)	- Solve the word problem. Draw a number line as shown on the board. - Akosua shares a 14-meter tape with her sister. - To divide the tape in a 2:5 ratio, how many meters will each person receive? *Do NOT write the word problem on the board to reduce time.		
Teacher's Note	- In [1], the question is related to the introduction. - Drawing a number line is key to understand the relationship visually.		

<Mental Maths>

- a) $8 \div 4 = 2$ b) $12 \div 2 = 6$ c) $14 \div 2 = 7$
d) $16 \div 2 = 8$ e) $18 \div 3 = 6$

<Homework>

- a) In [1], how much water can Kwasi's brother get?

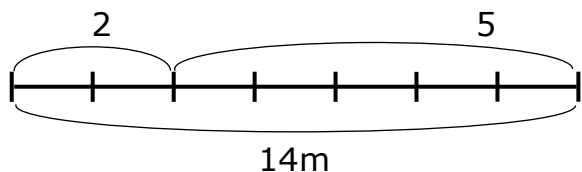
$$12 \times \frac{1}{4} = 3, 3L$$

- b) In [2] how much water is needed to make 42L of orange drink?

$$42 \times \frac{4}{7} = 24, 24L$$

*The answers are omitted here due to space constraints.
See the answer in the previous lesson..*

L69: Split the ratio

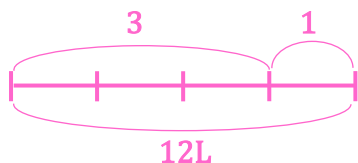


Akosua: $14 \times \frac{5}{7} = 10, 10m$

Her sister: $14 \times \frac{2}{7} = 4, 4m$

[1] Kwasi shares 12L of water in a ratio of 3:1 with his brother. How many litres will each person receive?

- a) Draw a number line to show the relationship.



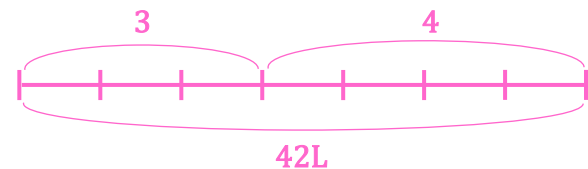
- b) What fraction of the water is for Kwasi? $\frac{3}{4}$

- c) How much water can Kwasi get?

$$12 \times \frac{3}{4} = 9, 9L$$

[2] An orange drink is made from concentrate and water in a ratio of 3:4.

- a) Draw a number line to show the relationship.



- b) What fraction of the mixture is concentrate? $\frac{3}{7}$

- c) To make 42L of the orange drink, how much concentrate is needed?

$$42 \times \frac{3}{7} = 18, 18L$$

[R] Draw a number line which shows:

- a) 2:1. b) 2:5.

Lesson	70 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L66, [2]: L67, [3]: L68 & L69.		

<Mental Maths>

- a) $9 \div 3 = 3$ b) $12 \div 3 = 4$ c) $14 \div 7 = 2$
d) $16 \div 4 = 4$ e) $18 \div 6 = 3$

<Homework>

*No homework.

L70: Review

[1] If 20cm on a map represents 2km,
how many cm represent:

- a) 1km? $20 \div 2 = 10, 10\text{cm}$
b) 4km? $4 \times 10 = 40, 40\text{cm}$

[2] If the rate is constant,
fill in the table.

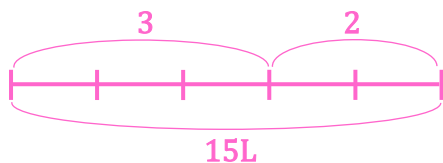
a) Water (kg)	3	4	7	10
Price (¢)	15	20	35	50

$$15 \div 3 = 5 \quad 4 \times 5 = 20$$

$$7 \times 5 = 35 \quad 10 \times 5 = 50$$

[3] Kofi and Ama share 15L of
juice in a ratio of 3:2. How many
litres will each person receive?

a) Draw a number line to show
the relationship.



b) What fraction of the juice is
for Ama? $\frac{2}{5}$

c) How much juice can Ama get?

$$15 \times \frac{2}{5} = 6,6\text{L}$$

Lesson	71 /120	Curriculum	B6.1.3.1.1 (p.131) e.g.1
Teaching Tips	Have learners recall what they learned in previous lessons.		
Objective	Be able to compare common and decimal fractions.		
Introduction (sample)	- Show how to convert a common fraction to a decimal fraction by long division. a) $\frac{3}{8} = 3 \div 8 = 0.375$ b) $\frac{2}{3} = 2 \div 3 = 0.666\dots$ - Note that a) is a terminating decimal, whereas b) is a non-terminating decimal.		
Teacher's Note	- Learners learnt long division in L29-35. - In some cases, it is better to compare by converting decimal fractions to common fractions. However, converting to decimal fractions is more widely applicable.		

<Mental Maths>

- a) $10 \div 2 = 5$ b) $12 \div 4 = 3$ c) $15 \div 3 = 5$
 d) $16 \div 8 = 2$ e) $18 \div 9 = 2$

<Homework>

Answer as [1B].

- a) $\frac{5}{8} > 0.62$ b) $\frac{1}{3} < 0.4$
 c) $\frac{2}{9} > 0.22$ d) $\frac{8}{7} < 1.15$

Use the result of [1A] in a).

L71: Convert common to decimal fractions

To compare common and decimal fractions, convert the common fraction to decimal fraction.

[1A] Convert $\frac{1}{8}$ to decimal fractions.

$$\begin{array}{r}
 0.125 \\
 8 \overline{) 1.0} \\
 \underline{8} \\
 20 \\
 \underline{16} \\
 40 \\
 \underline{40} \\
 0
 \end{array}$$

[1B] Write $>$, $<$ or $=$.

- a) $\frac{1}{8} > 0.123$ b) $\frac{2}{3} < 0.7$
 0.125 0.66...

- c) $\frac{1}{6} > 0.16$
 0.166...

[2A] Convert $\frac{5}{8}$ to decimal fractions.

$$\begin{array}{r}
 0.625 \\
 8 \overline{) 5.0} \\
 \underline{4} \\
 20 \\
 \underline{16} \\
 40 \\
 \underline{40} \\
 0
 \end{array}$$

[2B] Answer as [1B].

- a) $\frac{5}{8} < 0.65$ b) $\frac{1}{3} > 0.3$
 0.625 0.33...
 c) $\frac{2}{9} < 0.23$ d) $\frac{8}{7} > 1.14$
 0.22... 1.142...

[3] Refer to L69 [1].

- a) What fraction of the water is for Kwasi's brother? $\frac{1}{4}$
 b) How much water can Kwasi's brother get? $12 \times \frac{1}{4} = 3, 3L$

Lesson	73 /120	Curriculum	B6.2.1.1.4 (p.) e.g.1-3												
Teaching Tips	If more than half of the learners cannot solve the first task, explain how to solve it using it.														
Objective	Identify rules of geometric patterns														
Introduction (sample)	- Draw geometric patterns below.  - Show how to solve the followings. a) Fill in the table. <table><tr><td>No. of squares</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td>No. of edges</td><td>4</td><td>7</td><td>10</td><td>13</td><td>16</td></tr></table> b) Find the rule. Add 3 c) Find the number of edges in No.8. $16 + 3 + 3 + 3 = 25$, 25 edges.			No. of squares	1	2	3	4	5	No. of edges	4	7	10	13	16
	No. of squares	1	2	3	4	5									
No. of edges	4	7	10	13	16										
Teacher's Note	It is important to create a table first to identify the pattern.														

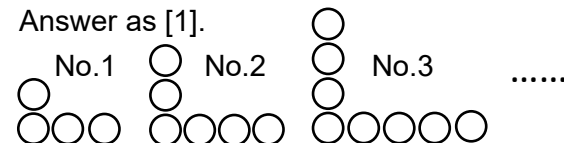
<Mental Maths>

a) $20 \div 5 = 4$ b) $24 \div 4 = 6$ c) $27 \div 3 = 9$

d) $30 \div 5 = 6$ e) $35 \div 5 = 7$

<Homework>

Answer as [1].



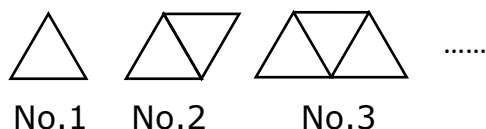
Fill in the table.

Design No.	1	2	3	4	5
No. of circles	4	6	8	10	12

b) Find the rule. **Add 2**

L73: Identify geometric patterns (1)

[1]



a) Fill in the table.

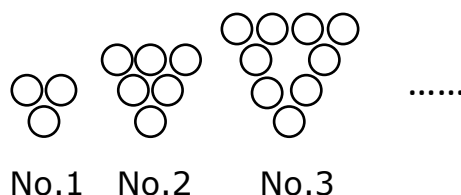
No. of triangles	1	2	3	4	5
No. of edges	3	5	7	9	11

b) Find the rule. **Add 2**

c) Find the number of edges in No.7.
11 + 2 + 2 = 15, 15 edges.

No. means number.

.....
[2]



a) Fill in the table.

Design No.	1	2	3	4	5
No. of circles	3	6	9	12	15

b) Find the rule. **Add 3**

c) Find the number of circles in No.8.
15 + 3 + 3 + 3 = 24, 24 circles.

[R] Order from small to big.

a) $\frac{1}{3}$, 0.35, 30%, $\frac{1}{4}$ **$\frac{1}{4}$, 30%, $\frac{1}{3}$, 0.35**

0.333 0.3 0.25

b) 0.45, $\frac{6}{10}$, $\frac{2}{5}$, 53% **$\frac{2}{5}$, 0.45, 53%, $\frac{6}{10}$**

0.6 0.4 0.53

c) 83%, $\frac{7}{8}$, $\frac{16}{20}$, 0.86 **$\frac{16}{20}$, 83%, 0.86, $\frac{7}{8}$**

0.83 0.875 0.8

Lesson	74 /120	Curriculum	B6.2.2.1.1 (p.) e.g.4
Teaching Tips	Have learners copy everything from the board into their exercise books.		
Objective	Be able to simplify the expressions with an unknown.		
Introduction (sample)	- Draw the pattern and table as shown on the board. - Fill in the table No. 1 and 2.		
Teacher's Note	- In [2] b), It is better if the learners can find the linear equation. However, they can identify the difference from the previous term or draw the pattern to identify the number. [1] is more difficult than [2]. Support learners to fill in the blanks if necessary.		

<Mental Maths>

- a) $21 \div 3 = 7$ b) $24 \div 6 = 4$ c) $27 \div 9 = 3$
d) $30 \div 6 = 5$ e) $35 \div 7 = 5$

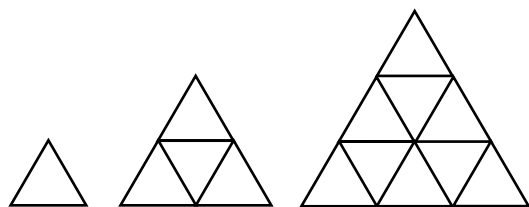
<Homework>

In [2], find the number of sticks:

- a) in the perimeter of No.7. **37**
b) enclosed in No.7. **19**

Find the number of triangles enclosed and multiply by 3 to get the answer.

L74: Identify geometric patterns (2)



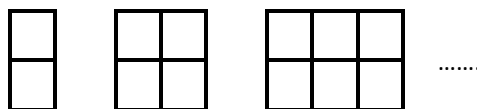
No.1 No.2 No.3

No.	1	2	3	4	5
Sticks in the perimeter	3	6	9	12	15
Sticks enclosed	0	3	9	18	30

[1] Fill in the table.



[2]



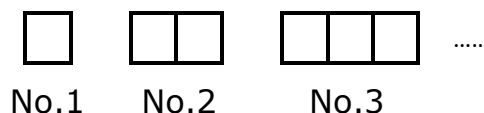
No.1 No.2 No.3

a) Fill in the table.

No.	1	2	3	4	5
Sticks in the perimeter	7	12	17	22	27
Sticks enclosed	1	4	7	10	13

b) Find the number of sticks in the perimeter of No.9. **25**

[R] Fill in the table.



No.1 No.2 No.3

a) Fill in the table.

No. of triangles	1	2	3	4	5
No. of edges	4	7	10	13	16

b) Find the rule. **Add 3**

Skip review task if you don't have time.

Lesson	75 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L71, [2]: L72, [3]: L73 & L74.		

<Mental Maths>

a) $21 \div 7 = 3$ b) $24 \div 8 = 3$ c) $28 \div 4 = 7$

d) $32 \div 4 = 8$ e) $36 \div 4 = 9$

<Homework>

*No homework.

L75: Review

[1] Write $>$, $<$ or $=$.

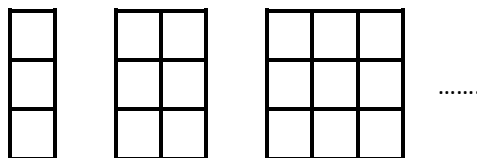
a) $\frac{1}{8} > 0.123$ b) $\frac{2}{3} < 0.7$
0.125 **0.66...**

[2] Order from big to small.

a) 0.2 , $\frac{3}{4}$, 60% , $\frac{1}{3}$
0.75 **0.6** **0.33...**

b) 65% , $\frac{3}{5}$, $\frac{10}{15}$, 0.67
0.65 **0.6** **0.66...**

[3]



Fill in the table.

No.	1	2	3	4	5
Sticks in the perimeter	10	17	24	31	38
Sticks enclosed	2	7	12	17	22

Lesson	76 /120	Curriculum	B6.2.2.1.1 (p.141,142) e.g.1-4
Teaching Tips	Divide the board into two parts and copy the teacher manual as it is. Once learners have copied it, erase the left part to write the right part of the teacher manual.		
Objective	Be able to represent in algebraic expressions.		
Introduction (sample)	Write the rule of omission of multiplication sign as shown on the board.		
Teacher's Note	- From this lesson, learners use a letter instead of $\square$ to show an unknown. The letters can be a, b, m, n, etc. However, k and n are mainly used to avoid confusion. (If you use b, learners may confuse with 6 in some cases.) - This is a review of B5 which is a preparation for later lessons.		

<Mental Maths>

- a) $24 \div 3 = 8$ b) $25 \div 5 = 5$ c) $28 \div 7 = 4$
d) $32 \div 8 = 4$ e) $36 \div 6 = 6$

<Homework>

Answer as [1A].

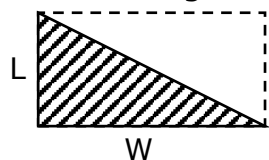
- a) Sum of k and 6 $k + 6$
b) Add 4 to n $n + 4$
c) Take away 3 from 5 times k $5k - 3$

L76: Express by algebraic expressions

Multiplication sign can be omitted.

$$3c = 3 \times c$$

Area of triangle

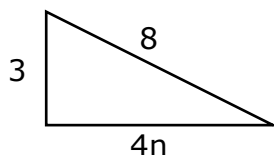


$$L \times W \div 2$$

[1A] Write algebraic expressions.

- a) Sum of 8 and n $8 + n$
b) Take away 4 from k $k - 4$
c) Add 5 to 3 times n $3n + 5$

[1B] Find the perimeter and area.



Perimeter:

$$8 + 4n + 3 = 4n + 11$$

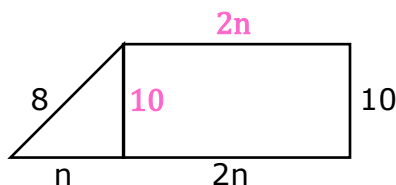
Area:

$$3 \times 4n \div 2 = 6n$$



[2] Answer as [1B].

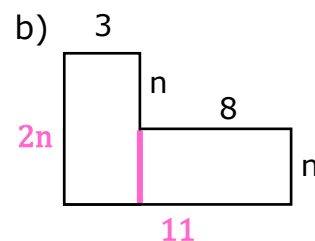
a)



$$\text{Perimeter : } 8 + 2n + 10 + 2n + n = 5n + 18$$

$$\text{Area: } 10 \times n \div 2 + 2n \times 10 = 25n$$

b)



Perimeter :

$$3 + n + 8 + n + 11 + 2n = 4n + 22$$

$$\text{Area: } 2n \times 3 + 8 \times n = 14n$$

[R] In L74 [1], find the number of sticks:

- a) in the perimeter of No.6. 18
b) enclosed in No.6. 45

Lesson	77 /120	Curriculum	B6.2.2.1.1 (p.141) e.g.5
Teaching Tips	Encourage learners to write in their exercise books. The more they write, the better their writing skills will become.		
Objective	Be able to substitute a value for unknowns.		
Introduction (sample)	Explain how to substitute numbers for unknowns as shown on the board. Especially, explain that 5(3) stands for 5×3.		
Teacher's Note	This lesson does not include substitution including brackets.		

*“as shown on the board” in the introduction part is written here.
Let learners copy it during introduction time.*

L77: Substitute a value for unknowns (1)

Multiply first, then add or subtract.

Substitute $k = 3$ and $n = 4$ into

$$4 + 5k + 2n = 4 + 5(3) + 2(4)$$

$$= 4 + 15 + 8 = 27$$

[1] Substitute $k = 2$ and $n = 4$ into:

a) $3k = 3(2) = 6$

b) $3n + 1 = 3(4) + 1$

$$= 12 + 1 = 13$$

c) $7k - 3n = 7(2) - 3(4)$

$$= 14 - 12 = 2$$

d) $5k - 2n + 3 = 5(2) - 2(4) + 3$

$$= 10 - 8 + 3 = 5$$

.....

[2] Substitute $k = 6$ and $n = 3$ into:

a) $2k + 4 = 2(6) + 4$

$$= 12 + 4 = 16$$

b) $20 - 4n = 20 - 4(3)$

$$= 20 - 12 = 8$$

c) $k + 2n = 6 + 2(3)$

$$= 6 + 6 = 12$$

d) $4k - 8n = 4(6) - 8(3)$

$$= 24 - 24 = 0$$

<Mental Maths>

a) $36 \div 9 = 4$ b) $42 \div 7 = 6$ c) $48 \div 8 = 6$

d) $56 \div 7 = 8$ e) $64 \div 8 = 8$

<Homework>

Substitute $k = 5$ and $n = 4$ into:

a) $3k + 4 = 3(5) + 4 = 15 + 4 = 19$

b) $20 - 5n = 20 - 5(4) = 20 - 20 = 0$

c) $k + 4n = 5 + 4(4) = 5 + 16 = 21$

d) $3k - 2n = 3(5) - 2(4) = 15 - 8 = 7$

e) $k - 3n + 4 = 6 - 3(3) + 4$

$$= 6 - 9 + 4 = 1$$

[R] Write algebraic expressions.

a) Sum of k and 4 $k + 4$

b) Add 6 to n $n + 6$

c) Subtract 6 from 4 times k $4k - 6$

Lesson	79 /120	Curriculum	B6.2.1.1.7 (p.140) e.g.1
Teaching Tips	Encourage learners to memorise as many words as possible (not just 1 or 2 letters) when copying from the board.		
Objective	Be able to show rules for patterns in expressions.		
Introduction (sample)	- Explain how to find the rules for patterns. - The difference is 6. Substitute 1 to $6n$ and check if it is the same as the first term which is 6. - The difference is 5. Substitute 1 to $5n$ and check if it is the same as the first term. To make it equal to the first term, 4, subtract 1 which is $5n - 1$. - Explain c) and d) in the same way.		
Teacher's Note	n and k are used because they are easily distinguishable from each other.		

<Mental Maths>

- a) $40 \div 8 = 5$ b) $45 \div 9 = 5$ c) $54 \div 6 = 9$
 d) $63 \div 7 = 9$ e) $72 \div 9 = 8$

<Homework>

Answer as [1B].

1	2	3	4	5	6
8	16	24	32	40	48

$8n$

1	2	3	4	5	6
25	23	21	19	17	15

$27 - 2n$

L79: Show rules in algebra

- a) 6, 12, 18, ... $6n$
 b) 4, 9, 14, ... $5n - 1$
 c) 5, 8, 11, ... $3n + 2$
 d) 20, 16, 12, ... $24 - 4n$

[1A] Fill in the blanks and write the rule in expressions.

- a) 4, 8, 12, 16, 20, 24 $4n$
 b) 4, 7, 10, 13, 16, 19 $3n + 1$
 c) 20, 17, 14, 11, 8, 5 $23 - 3n$

[1B] Fill in the table and write the rule in expressions.

1	2	3	4	5	6
5	11	17	23	29	35

$6n - 1$

[2A] Answer as [1A].

- a) 7, 14, 21, 28, 35, 42 $7n$
 b) 7, 12, 17, 22, 27, 32 $5n + 2$
 c) 30, 26, 22, 18, 14, 10 $34 - 4n$

[2B] Answer as [1B].

- a)

1	2	3	4	5	6
1	7	13	19	25	31

 $6n - 5$
 b)

1	2	3	4	5	6
27	22	17	12	7	2

 $32 - 5n$

[R] Substitute $k = 6$ and $n = 3$ into:

- a) $2(k + 4) = 2(6 + 4) = 2(10) = 20$
 b) $3(2k - 3n) - 5 = 3(12 - 9) - 5 = 3(3) - 5 = 4$

Tell the learners what the n means. n represents the n -th number.

Give [R] if you have time; skip it if not.

Lesson	80 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L76, [2]: L77 & L78, [4]: L79.		

<Mental Maths>

a) $42 \div 6 = 7$ b) $48 \div 6 = 8$ c) $54 \div 9 = 6$

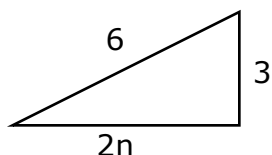
d) $63 \div 9 = 7$ e) $81 \div 9 = 9$

<Homework>

*No homework.

L80: Review

[1] Find the perimeter and area.



Perimeter:

$$6 + 3 + 2n = 2n + 9$$

Area:

$$3 \times 2n \div 2 = 3n$$

[2] Substitute $k = 2$ and $n = 4$ into:

a) $4k = 4(2) = 8$

b) $5n - 1 = 5(4) - 1$
 $= 20 - 1 = 19$

c) $9k - 4n = 9(2) - 4(4)$
 $= 18 - 16 = 2$

d) $6(5 - k) = 6(5 - 2) = 6(3) = 18$

e) $-2(2k + n) - 3 = -2(4 + 4) - 3$
 $= -2(8) - 3 = -19$

[3] Fill in the blanks and write the rule in expressions.

a) 3, 6, 9, 12, 15, 18 $3n$

b) 5, 9, 13, 17, 21, 25 $4n + 1$

c) 17, 14, 11, 8, 5, 2 $20 - 3n$

Lesson	82 /120	Curriculum	B6.2.3.1.2 (p.143) e.g.1
Teaching Tips	While you are writing on the board, let learners copy it in their exercise books.		
Objective	Be able to solve linear equation by multiplying or dividing by numbers.		
Introduction (sample)	- Confirm the rule of solving equation as shown on the board. - Show how to solve the equations as shown on the board.		
Teacher's Note	- Solving an equation is like using a balance. If you add the same number to both sides, take away the same number, multiply, or divide both sides by the same number, the two sides stay equal. - The biggest difference from the previous lesson is that this lesson does not expect learners to use the guess and check method. - In equations, we write the equal sign in the same position so that it is easy to see that the two sides are equal.		

This notation means "do this operation to both sides."

L82: Solve an equation (2)

Multiply or divide by the same number on both sides.

$$\begin{array}{lcl}
 3 + 4x = 15 & \xrightarrow{-3} & 4x = 12 \\
 & \xrightarrow{\div 4} & x = 3
 \end{array}
 \qquad
 \begin{array}{lcl}
 \frac{x}{2} - 3 = 8 & \xrightarrow{+3} & \frac{x}{2} = 11 \\
 & \xrightarrow{\times 2} & x = 22
 \end{array}$$

[1] Solve:

$$\begin{array}{lcl}
 \text{a) } 3x = 21 & \xrightarrow{\div 3} & x = 7 \\
 \text{b) } \frac{x}{2} = 6 & \xrightarrow{\times 2} & x = 12
 \end{array}$$

$$\begin{array}{lcl}
 \text{c) } 4x + 1 = 21 & \xrightarrow{-1} & 4x = 20 \\
 & \xrightarrow{\div 4} & x = 5
 \end{array}
 \qquad
 \begin{array}{lcl}
 \text{d) } \frac{x}{3} - 2 = 6 & \xrightarrow{+2} & \frac{x}{3} = 8 \\
 & \xrightarrow{\times 3} & x = 24
 \end{array}$$

[2] Solve:

$$\begin{array}{lcl}
 \text{a) } 2x = 18 & \xrightarrow{\div 2} & x = 9 \\
 \text{b) } \frac{x}{3} = 6 & \xrightarrow{\times 3} & x = 18 \\
 \text{c) } 6x - 3 = 21 & \xrightarrow{+3} & 6x = 24 \\
 & \xrightarrow{\div 6} & x = 4 \\
 \text{d) } \frac{x}{5} + 2 = 6 & \xrightarrow{-2} & \frac{x}{5} = 4 \\
 & \xrightarrow{\times 5} & x = 20
 \end{array}$$

<Mental Maths>

$$\begin{array}{l}
 \text{a) } 150 \div 5 = 30 \quad \text{b) } 180 \div 3 = 60 \quad \text{c) } 210 \div 3 = 70 \\
 \text{d) } 240 \div 8 = 30 \quad \text{e) } 280 \div 7 = 40
 \end{array}$$

<Homework>

Solve:

$$\begin{array}{lcl}
 \text{a) } 4x = 44 & & x = 11 \\
 \text{b) } \frac{x}{3} = 9 & & x = 27 \\
 \text{c) } 2x + 3 = 11 & & x = 4 \\
 \text{d) } \frac{x}{3} + 5 = 1 & & x = -12
 \end{array}$$

$$\begin{array}{lcl}
 \text{e) } 4 + \frac{x}{4} = 2 & \xrightarrow{-4} & \frac{x}{4} = -2 \\
 & \xrightarrow{\times 4} & x = -8
 \end{array}$$

[R] Solve:

$$\begin{array}{lcl}
 \text{a) } 3 + x = 11 & & x = 11 - 3 = 8 \\
 \text{b) } x - 7 = 9 & & x = 7 + 9 = 16 \\
 \text{c) } 3x = 240 & & x = 80 \\
 \text{d) } 3x + 10 = 130 & & 3x = 120 \quad x = 40
 \end{array}$$

Lesson	83 /120	Curriculum	B6.2.3.1.2 (p.143) e.g.1
Teaching Tips	Have learners repeat what you said to check their understanding.		
Objective	Be able to solve linear equations with unknowns on the right-hand side.		
Introduction (sample)	- Show how to find the equations as below. a) $14 = 6 + 4x$ $x = 2$ b) $11 = \frac{x}{2} + 3$ $x = 16$ - Show how to check the answers by substituting the answer to the equation.		
Teacher's Note	- This lesson works as a consolidation of L81 and L82. - Equations with a negative coefficient of x are not included because these types do not appear in the curriculum.		

<Mental Maths>

- a) $160 \div 2 = 80$ b) $180 \div 6 = 30$ c) $210 \div 7 = 30$
d) $250 \div 5 = 50$ e) $300 \div 5 = 60$

<Homework>

Check the solution of [2A] a) and b).

- a) $\frac{12}{3} = 4$ b) $3(7) - 8 = 21 - 8 = 13$

The result of the calculation of right-hand side should be the same as left-hand side.

This notation means "do this operation to both sides."

L83: Check the solution

[1A] Solve:

a) $24 = 3x$

$$\begin{array}{l} 3x = 24 \\ x = 8 \end{array} \quad \begin{array}{c} \curvearrowright \div 3 \end{array}$$

b) $12 = 8 + 2x$

$$\begin{array}{l} 8 + 2x = 12 \\ 2x = 4 \\ x = 2 \end{array} \quad \begin{array}{c} \curvearrowright - 8 \\ \curvearrowright \div 2 \end{array}$$

c) $5 = \frac{x}{2} - 3$

$$\begin{array}{l} \frac{x}{2} - 3 = 5 \\ \frac{x}{2} = 8 \\ x = 16 \end{array} \quad \begin{array}{c} \curvearrowright - 8 \\ \curvearrowright \div 2 \end{array}$$

[1B] Check the solution of [1A] b) and c).

b) $8 + 2(2) = 8 + 4 = 12$

c) $\frac{16}{2} - 3 = 8 - 3 = 5$

[2A] Solve:

a) $4 = \frac{x}{3}$

$$\begin{array}{l} \frac{x}{3} = 4 \\ x = 12 \end{array} \quad \begin{array}{c} \curvearrowright \times 3 \end{array}$$

b) $13 = 3x - 8$

$$\begin{array}{l} 3x - 8 = 13 \\ 3x = 21 \\ x = 7 \end{array} \quad \begin{array}{c} \curvearrowright + 8 \\ \curvearrowright \div 3 \end{array}$$

c) $17 = 2 + 5x$

$$\begin{array}{l} 2 + 5x = 17 \\ 5x = 15 \\ x = 3 \end{array} \quad \begin{array}{c} \curvearrowright - 2 \\ \curvearrowright \times 3 \end{array}$$

d) $2 = 4 + \frac{x}{3}$

$$\begin{array}{l} 4 + \frac{x}{3} = 2 \\ \frac{x}{3} = -2 \\ x = -6 \end{array} \quad \begin{array}{c} \curvearrowright - 2 \\ \curvearrowright \div 3 \end{array}$$

[2B] Check the solution of [2A] c) and d).

c) $2 + 5(3) = 2 + 15 = 17$

d) $4 + \frac{-6}{3} = 4 + (-2) = 2$

[R] Solve:

a) $2x - 3 = 9$ b) $3x + 2 = 17$ c) $\frac{x}{3} - 3 = 1$

$x = 6$

$x = 5$

$x = 12$

Lesson	84 /120	Curriculum	B6.2.1.1.8 (p.140) e.g.1,2
Teaching Tips	Select some learners to distribute exercise books before the lesson begins.		
Objective	Be able to describe the relationship in a table and find the answer.		
Introduction (sample)	- A pineapple costs ₺5. (i) Draw a table as shown on the board. Let learners answer the cost for 2 or more pineapples. (ii) Ama bought some and the total cost was ₺150. How many pineapples did she buy?		
Teacher's Note	No need to write the word problem on the board in the introduction.		

<Mental Maths>

- a) $160 \div 4 = 40$ b) $180 \div 9 = 20$ c) $240 \div 3 = 80$
d) $270 \div 3 = 90$ e) $300 \div 6 = 50$

<Homework>

Refer to [2B].

How many boxes were ordered if the cost is:

- a) ₺60. **20 boxes**
b) ₺120. **40 boxes**

*This dotted line separates exercise part 1 and 2.
Write all the black parts up to this line in exercise part 1.*

L84: Describe the relationship in a table

No.	1	2	3	4	...	30
cost	5	10	15	20	...	150

$5n = 150, n = 30, 30$ pineapples

[1A] Solve by guess and check.

- a) $4n = 8$ **$n = 2$** b) $3n = 60$ **$n = 20$**
c) $6n = 300$ **$n = 50$**

[1B]

1	2	3	4	...	20
4	8	12	16	...	80

- a) Write the rule using n . **$4n$**
b) Fill in the blanks. **$4n = 80, n = 20$**

[2] The table shows cost of boxed lunches on a field trip.

Box	1	2	3	...
Cost (₺)	3	6	9	...

- a) Write the rule using n . **$3n$**
How many boxes were ordered if the cost is:
b) ₺90? **$3n = 90, n = 30, 30$ boxes**

- c) ₺300? **$3n = 300, n = 100, 100$ boxes**

[R] Solve:

a) $15 = 3x$

$$\begin{aligned} 3x &= 15 \\ x &= 5 \end{aligned} \quad \begin{array}{c} \curvearrowright \div 3 \end{array}$$

b) $18 = 8 + 2x$

$$\begin{aligned} 8 + 2x &= 18 \\ 2x &= 10 \\ x &= 5 \end{array} \quad \begin{array}{c} \curvearrowright - 8 \\ \curvearrowright \div 2 \end{array}$$

c) $12 = \frac{x}{3} + 3$

$$\begin{aligned} \frac{x}{3} + 3 &= 12 \\ \frac{x}{3} &= 9 \\ x &= 27 \end{array} \quad \begin{array}{c} \curvearrowright - 3 \\ \curvearrowright \times 3 \end{array}$$

Lesson	85 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1] a) & b): L81, [1] c) & d): L82, [1] e) & f): L83, [2]: L84.		

<Mental Maths>

a) $160 \div 8 = 20$ b) $200 \div 4 = 50$ c) $240 \div 4 = 60$
d) $270 \div 9 = 30$ e) $320 \div 4 = 80$

<Homework>

*No homework.

L85: Review

[1] Solve:

a) $x + 3 = 21$ $\xrightarrow{-3}$ $x = 18$ b) $x - 6 = 5$ $\xrightarrow{+6}$ $x = 11$

c) $3x + 4 = 22$ $\xrightarrow{-4}$ $3x = 18$ $\xrightarrow{\div 3}$ $x = 6$ d) $\frac{x}{3} - 4 = 2$ $\xrightarrow{+6}$ $\frac{x}{3} = 6$ $\xrightarrow{\times 3}$ $x = 18$

e) $14 = 2 + 4x$ $\xrightarrow{2+4x=14}$ $4x = 12$ $\xrightarrow{x=3}$ $x = 3$

f) $3 = 8 + \frac{x}{2}$ $\xrightarrow{8+\frac{x}{2}=3}$ $\frac{x}{2} = -5$ $\xrightarrow{x=-10}$ $x = -10$

[2]

1	2	3	4	...	30
3	6	9	12	...	90

a) Write the rule using n. $3n$
b) Fill in the blanks. $3n = 90, n = 30.$

Lesson	88 /120	Curriculum	B6.3.1.1.1 (p.144) e.g.1
Teaching Tips	If more than half of the learners cannot solve the first task, explain how to solve it using it.		
Objective	Be able to identify rectangular and triangular prisms.		
Introduction (sample)	- Let learners find the 3-D objects around them. - Discuss which object is: a) rectangular prism. b) triangular prism. - Ask the characteristics of the two 3-D objects. - A rectangular prism has two identical rectangular bases. - A triangular prism has two identical triangular bases.		
Teacher's Note	This topic was dealt in B3, but not in B4 and B5. Review the terms vertex, edge and face.		

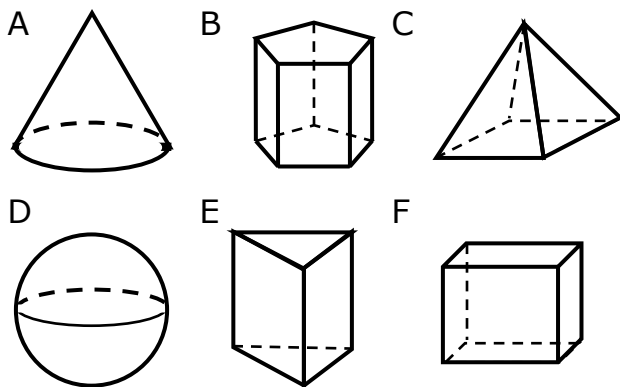
Confirm the name of the other 3-D objects. A is a cone, B is a pentagonal prism, C is a rectangular pyramid and D is a sphere.

L88: Identify rectangular and triangular prisms.

[1] Which object is:

a) a rectangular prism. **F**

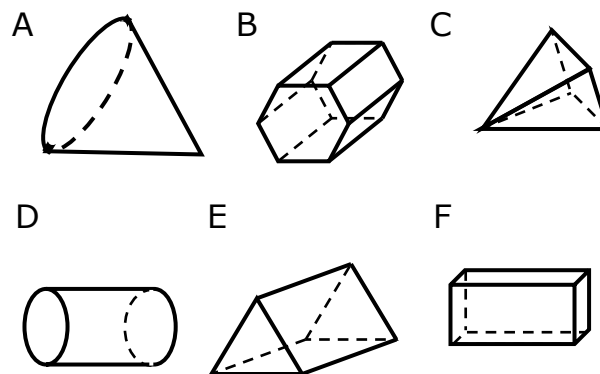
b) a triangular prism. **E**



[2A] Which object is:

a) a rectangular pyramid. **C**

b) a cylinder. **D**



<Mental Maths>

a) $350 \div 7 = 50$ b) $400 \div 8 = 50$ c) $480 \div 6 = 80$

d) $560 \div 7 = 80$ e) $720 \div 8 = 90$

<Homework>

In [1], what is the name of:

a) B **Pentagonal prism**

b) D **Sphere**

[2B] What is the name of:

a) A **Cone**

b) E **Triangular prism**

[R] $20 - 3 \times \square$ if $\square - 4 + \square = 8$.

$2 \times \square - 4 = 8$

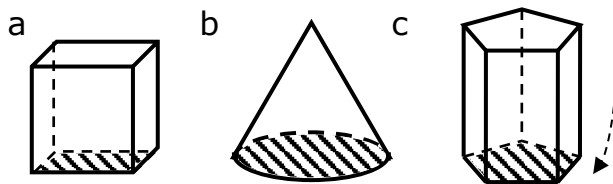
$2 \times \square = 12, \square = 6$

$20 - 3 \times \square = 20 - 3 \times 6$
 $= 20 - 18 = 2$

Lesson	89 /120	Curriculum	B6.3.1.1.1 (p.144) e.g.2
Teaching Tips	Have learners copy everything from the board into their exercise books.		
Objective	Be able to identify cross sections of 3-D objects.		
Introduction (sample)	- Show the cross section of a box (rectangular prism), a bottle (cylinder) and sweet potato (cone). - Draw the 3-D objects as shown on the board. Ask the name of each object.		
Teacher's Note	- In this lesson, only cross sections that are parallel to the base are considered. - In [1A] and [1B], the shapes are standing on their bases. In [2A] and [2B], the shapes are lying on their sides. - A relatively well-shaped sweet potato can be processed into a cone if you want to show them as a sample.		

Let learners answer the cross section parallel to the shaded part.

L89: Identify the cross sections of 3-D objects.



[1A] What is the shape of the cross section?

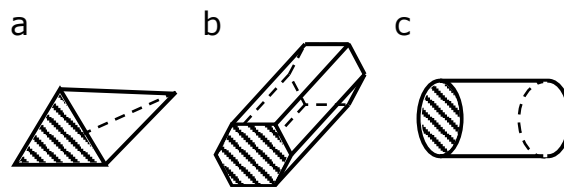
- a) **Square** b) **Circle** c) **Pentagon**

[1B] Is the cross section uniform?

- a) **Yes** b) **No** c) **Yes**



[2A]



Answer as [1A].

- a) **Triangle** b) **Hexagon** c) **Rectangle**

[2B] Answer as [1B].

- a) **No** b) **Yes** c) **Yes**

<Mental Maths>

- a) $360 \div 4 = \mathbf{90}$ b) $420 \div 6 = \mathbf{70}$ c) $480 \div 8 = \mathbf{60}$
d) $560 \div 8 = \mathbf{70}$ e) $720 \div 9 = \mathbf{80}$

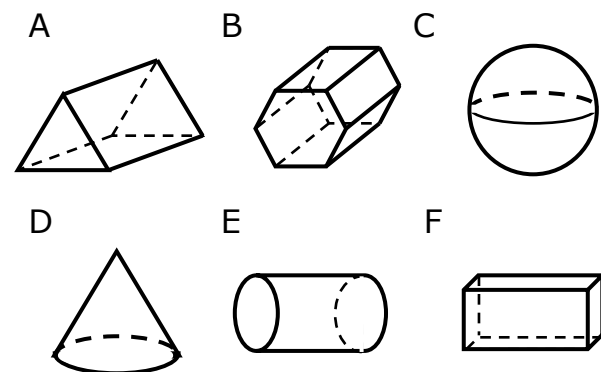
<Homework>

Is the cross section uniform if the 3-D object is:

- a) a rectangular pyramid? **No**
b) a triangular prism? **Yes**
c) a cone? **No**

[R] Which object is:

- a) a rectangular pyramid. **C**
b) a cylinder. **D**



Lesson	90 /120	Curriculum	Review Lesson
Teaching Tips	Divide the board into two parts and copy the teacher manual as it is. Once learners have copied it, erase the left part to write the right part of the teacher manual.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. - After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L86, [2]: L87, [3]: L88, [4]: L89.		

<Mental Maths>

- a) $360 \div 6 = 60$ b) $420 \div 7 = 60$ c) $490 \div 7 = 70$
d) $630 \div 7 = 90$ e) $810 \div 9 = 90$

<Homework>

*No homework.

L90: Review

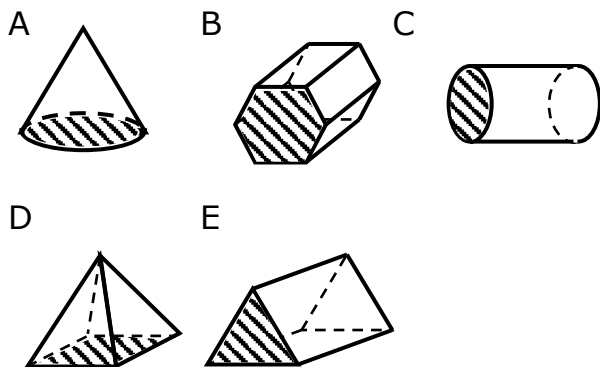
- [1] The product of two numbers is 120. If one of the numbers is 20, what is the other number?

$$20x = 120, x = 6$$

- [2] What is $4 + k \times 5$
if $3 + k + k = 9$?

$$2k + 3 = 9, 2k = 6, k = 3$$

$$4 + k \times 5 = 4 + 3 \times 5 \\ = 4 + 15 = 19$$



- [3] Which object is:

- a) a triangular prism? **E**
b) a cone? **A**

[4]

- a) What is the shape of the cross section of C? **Circle**
b) Select objects which do not have uniform cross section uniform.

A and D

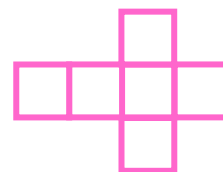
Lesson	91 /120	Curriculum	B6.3.1.1.2 (p.145) e.g.1
Teaching Tips	Divide the board into two parts and copy the teacher manual as it is. Once learners have copied it, erase the left part to write the right part of the teacher manual.		
Objective	Be able to draw nets of rectangular and triangular prisms.		
Introduction (sample)	• Give the learners rectangular and triangular prisms made from cardboard. • Open and examine their nets. • Draw a triangular prism and its net as shown on the board. The base is a quadrilateral triangle.		
Teacher's Note	• You can use cardboard packing cases from shops or other type of boxes. • If you do not have enough materials, please show learners the net.		

<Mental Maths>

- a) $150 \div 30 = 5$ b) $180 \div 20 = 9$ c) $200 \div 50 = 4$
d) $240 \div 60 = 4$ e) $280 \div 40 = 7$

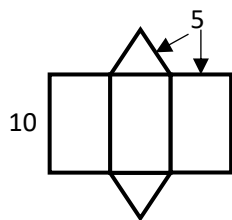
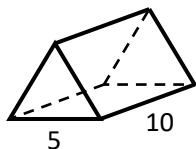
<Homework>

Draw a net of cube.

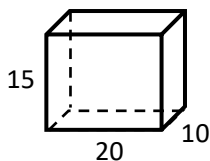
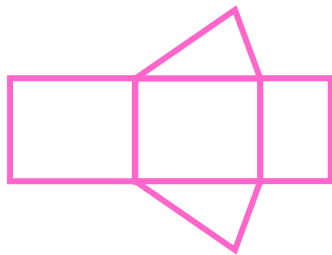
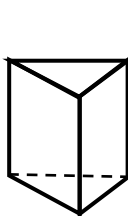


There are multiple possible answers when drawing the net of a 3-D objects.

L91: Draw nets of rectangular and triangular prisms.



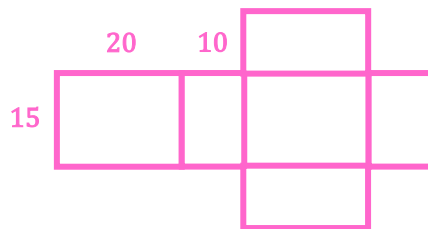
[1] Draw a net of the object.



[2] a) Write the name of the object.

rectangular prism

b) Draw a net of the object.



c) Write the length of the edge.

[R] Is the cross section parallel to the base uniform if the 3-D shape is:

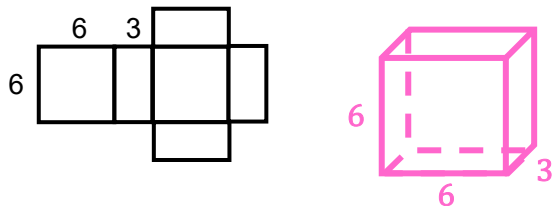
- a) a cone? **No**
b) a rectangular prism? **Yes**
c) a cylinder? **Yes**

Lesson	92 /120	Curriculum	B6.3.1.1.2 (p.145) e.g.2-4
Teaching Tips	Encourage learners to write in their exercise books. The more they write, the better their writing skills will become.		
Objective	Be able to construct rectangular and triangular prisms from their nets.		
Introduction (sample)	- Let learners construct rectangular and triangular prisms made from cardboard. - Make sure to identify which edges in the net correspond to the edges of the 3-D object.		
Teacher's Note	Tell learners that they don't have to write the length of all the edges. Since opposite edges are congruent, labelling one of them is sufficient.		

<Mental Maths>

- a) $150 \div 50 = 3$ b) $180 \div 30 = 6$ c) $210 \div 30 = 7$
d) $240 \div 80 = 3$ e) $280 \div 70 = 4$

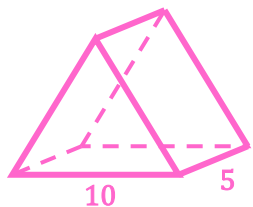
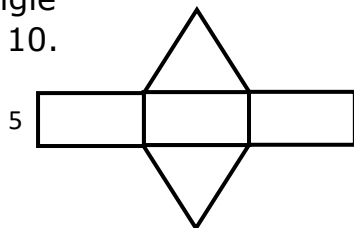
<Homework>



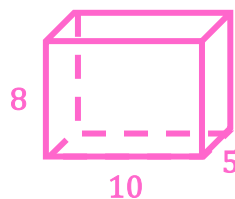
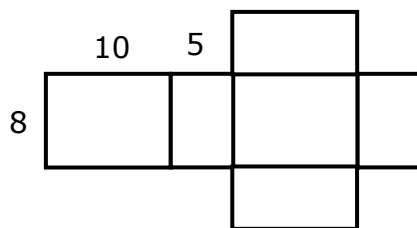
L92: Construct rectangular and triangular prisms from their nets.

[1] Construct 3-D objects from the net. Write the length.

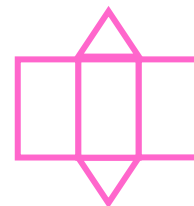
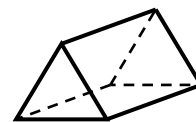
Equilateral triangle with the length 10.



.....
[2] Answer as [1].



[R] Draw a net of the object.



Lesson	93 /120	Curriculum	B6.3.3.5.1 (p.146) e.g.1-3
Teaching Tips	Have learners read the sentences, pointing to each word with your finger. Support learners if they have difficulty reading any of the words.		
Objective	Be able to describe the position and direction of objects.		
Introduction (sample)	- Draw a diagram as shown on the board. Ask learners, how can you go from home (H) to the: a) factory (F)? 2 steps north b) market (A)? 2 steps north and 2 step east From home, what direction is the: a) post office (P)? South b) market (M)? North-east - Check the phrases for directions including north-east, north-west, south-east and south-west.		
Teacher's Note	- No need to write the questions and answers in the introduction. - The difference from B5 is that this lesson deal with directions NE,NW,SE and SW.		

<Mental Maths>

- a) $160 \div 20 = 8$ b) $180 \div 60 = 3$ c) $210 \div 70 = 3$
 d) $250 \div 50 = 5$ e) $300 \div 50 = 6$

<Homework>

In [1], from church, what direction is the:

- a) home (H)? **South-west**
 b) factory (F)? **North-west**
 c) market (M)? **North-east**

The alphabet on the map stands for the initials of the buildings, e.g. "S" stands for a school.

L93: Tell the position of objects

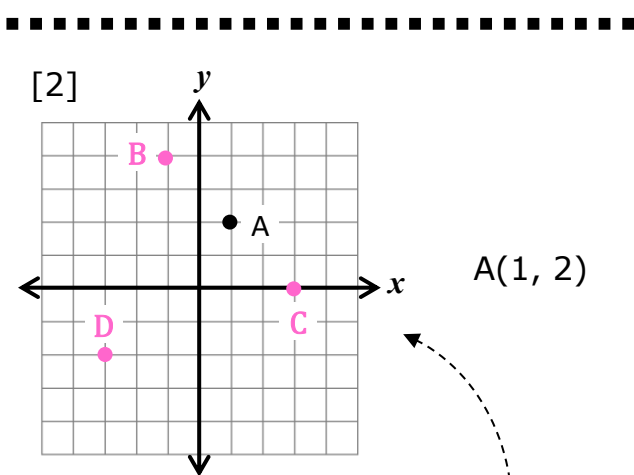
		F		M
			C	
		H		S
B	A	P		

[1A] How can you go
from home (H) to the:

- a) school (S)? **2 steps east**
 c) airport (A)? **2 steps south, 1 step west**

[1B] From home (H),
what direction is the:

- a) school (S)? **East**
 b) bus stop (B)? **South-west**



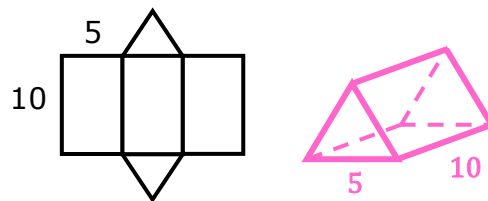
*This task is learnt in B4. But explain if necessary.
Points A and B are examples.*

a) Locate B(-1,4), C(3, 0), D(-3, -2).

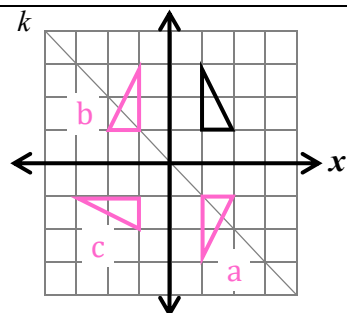
From A, what direction is:

- b) B? **North-west** c) C? **South-east**
 d) D? **South-west**

[R] Construct 3-D objects from
the net. Write the length.



Lesson	94 /120	Curriculum	B6.3.3.6.1 (p.147) e.g.1,2
Teaching Tips	Encourage learners to memorise as many words as possible (not just 1 or 2 letters) when copying from the board.		
Objective	Be able to identify reflected image of an object.		
Introduction (sample)	- Show how to draw the reflection of a triangle. It is important that each point of the triangle is reflected to the opposite side of the mirror line. a) x-axis. b) y-axis. c) line k.		
Teacher's Note	This is the same concept as symmetry in B4.3.1.1. The mirror line is the same as the line of symmetry.		



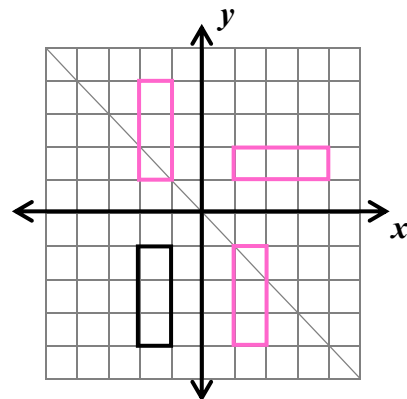
<Mental Maths>

- a) $160 \div 40 = 4$ b) $180 \div 90 = 2$ c) $240 \div 30 = 8$
d) $270 \div 30 = 9$ e) $300 \div 60 = 5$

<Homework>

Answer as [1].

- a) x-axis.
b) y-axis.
c) line k .

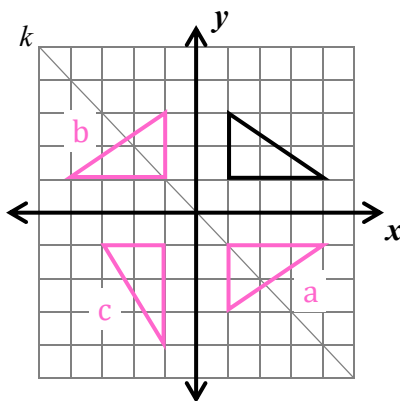


Let learners rotate their exercise book so that the mirror line becomes a vertical line.

L94: Identify reflected image

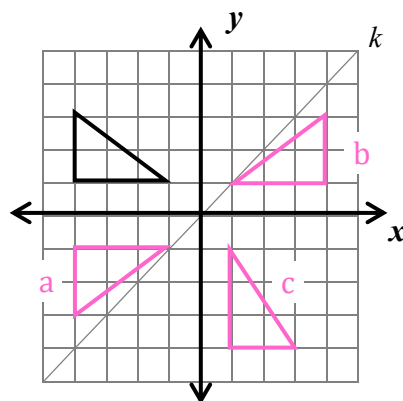
[1] Draw the reflection of a triangle across:

- a) x-axis.
b) y-axis.
c) line k .

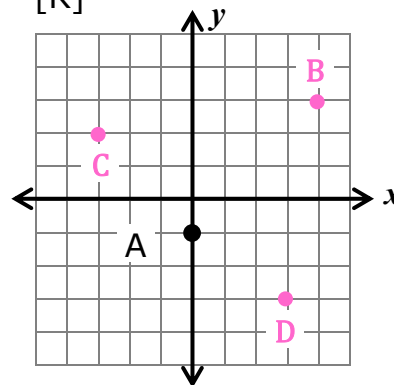


[2] Answer as [1].

- a) x-axis.
b) y-axis.
c) line k .



[R]



- a) Locate B(4, 3), C(-3, 2) , D(3, -3).
From A, what direction is:
b) B? **North-east** c) C? **North-west**
d) D? **South-east**

If grid paper is not available, there is no need to draw grid lines.

Lesson	95 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L91, [2]: L92, [3]: L93, [4]: L94.		

<Mental Maths>

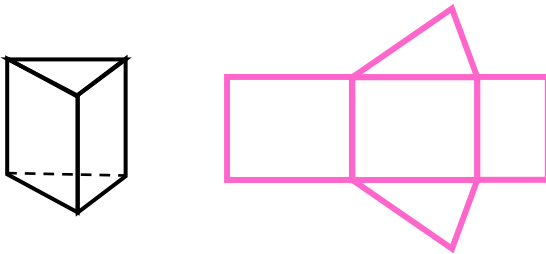
- a) $160 \div 80 = 2$ b) $200 \div 40 = 5$ c) $240 \div 40 = 6$
d) $270 \div 90 = 3$ e) $320 \div 40 = 8$

<Homework>

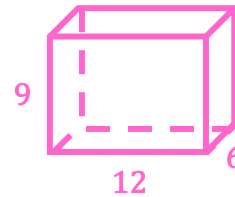
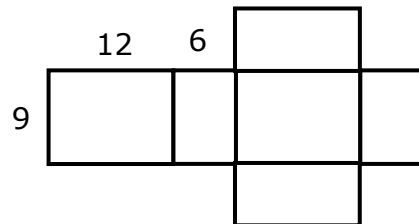
*No homework.

L95: Review

[1] Draw a net of the object.



[2] Construct 3-D objects from the net. Write the length.



[3]

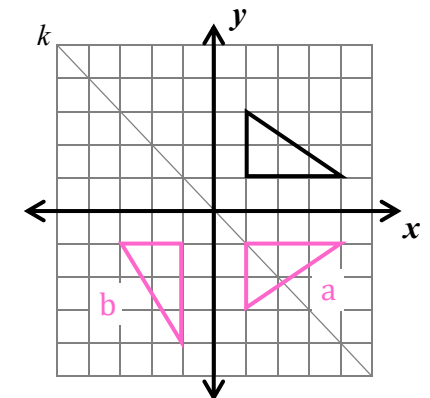
F		A
	H	
C		

From home (H), what direction is:

- a) the factory (F)? **North-west**
b) the airport (A)? **North-east**
c) the church (C)? **South-west**

[4] Draw the reflection of a triangle across:

- a) x-axis.
b) line k .



Lesson	96 /120	Curriculum	B6.3.3.6.1 (p.148,149) e.g.3,5
Teaching Tips	When a learner presents, repeat exactly what they said. Do not summarise or rephrase.		
Objective	Understand how to show the translation.		
Introduction (sample)	- Draw points A, B and C as shown on the board. - Show how to translate each point to A' and B' by a vector as shown on the board.		
Teacher's Note	- Focusing on each vertex is important when translating a 2-D shape. - Discuss the characteristics of translation of 2-D shapes. (e.g. the triangles are identical) when marking [1].		

<Mental Maths>

- a) $320 \div 80 = 4$ b) $360 \div 90 = 4$ c) $450 \div 50 = 9$
d) $540 \div 60 = 9$ e) $630 \div 90 = 7$

<Homework>

There are points A (2, -3) and B (-4, 2).

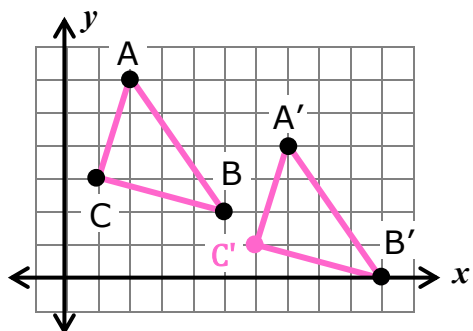
Translate:

- a) A by $\begin{pmatrix} 4 \\ 1 \end{pmatrix}$. (6, -2) b) A by $\begin{pmatrix} -3 \\ 5 \end{pmatrix}$. (-1, 2)
c) B by $\begin{pmatrix} 2 \\ 1 \end{pmatrix}$. (-2, 3) d) B by $\begin{pmatrix} 4 \\ -1 \end{pmatrix}$. (0, 1)

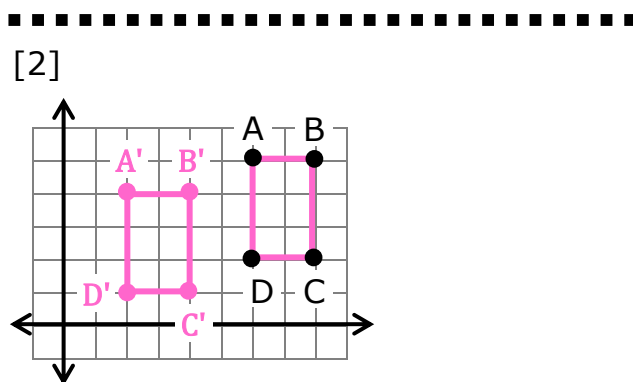
Tell the meaning of this representation, i.e. $x = 5$ and $y = -2$.

L96: Translation

A translation vector is shown in $\begin{pmatrix} 5 \\ -2 \end{pmatrix}$.



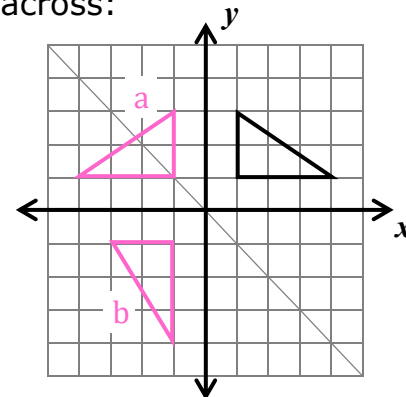
- [1] a) Translate C to C'.
b) Draw two triangles by connecting each point.
c) Is each sides the same length? **Yes**



- a) Tranlate each point by $\begin{pmatrix} -4 \\ -1 \end{pmatrix}$.
b) Draw two rectangles by connecting each point.
c) Is the area the same? **Yes**

[R] Draw the reflection of a triangle across:

- a) y-axis.
b) line k .



Lesson	97 /120	Curriculum	B6.3.3.6.1 (p.147,148) e.g.2.4
Teaching Tips	While you are writing on the board, let learners copy it in their exercise books.		
Objective	Be able to translate points or shapes by the indicated vector.		
Introduction (sample)	- Draw the shape K as shown on the board. Let learners: - reflect shape K in the y-axis. - translate shape K: 1 right and 3 down. - Discuss the properties of images under translations, i.e. object and image sizes and shape.		
Teacher's Note	One of the differences from the previous lesson is that the translation is specified by a vector or by words.		

<Mental Maths>

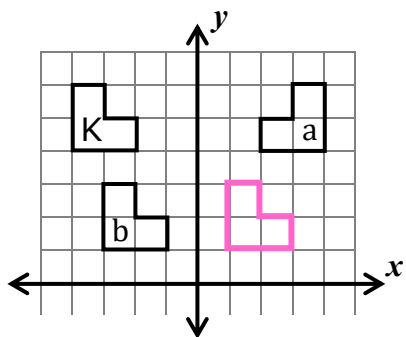
- a) $350 \div 50 = 7$ b) $400 \div 50 = 8$ c) $450 \div 90 = 5$
 d) $540 \div 90 = 6$ e) $640 \div 80 = 8$

<Homework>

Is the shape:

- a) in the same direction after the translation? **Yes**
 b) the same shape after the translation? **Yes**
 c) the same size after the reflection? **Yes**

L97: Property of Transformation

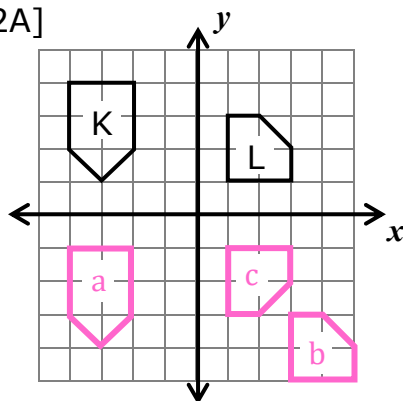


[1A] Among, size, direction, shape of the 2-D shapes, which of them are the same after:

- a) reflection? **Size and shape**
 b) translation? **All of them**

[1B] Translate K: 5 right, 3 down.

[2A]



- a) Translate K: 5 down.
 b) Translate L: 2 right and 6 down.
 c) Reflect L in the x-axis.

[2B] Is direction the same between the shape L and c? **No**

[R] There are points A (-2, 3) and B (-4, -2). Translate:

- a) A by $\begin{pmatrix} 4 \\ 1 \end{pmatrix}$. **(2, 4)**
 b) A by $\begin{pmatrix} -3 \\ 2 \end{pmatrix}$. **(-5, 5)**
 c) B by $\begin{pmatrix} 1 \\ -1 \end{pmatrix}$. **(-1, -3)**
 d) B by $\begin{pmatrix} 4 \\ 2 \end{pmatrix}$. **(0, 0)**

Lesson	98 /120	Curriculum	B6.3.3.6.2 (p.150) e.g.1,2
Teaching Tips	Have learners repeat what you said to check their understanding.		
Objective	Be able to identify the type of translation.		
Introduction (sample)	- Teach the term “transformation” which includes both reflection and translation. - Draw the diagram as shown on the board. Let learners choose the triangles that are: a) the reflection of triangle A in the y-axis.		
Teacher’s Note	This lesson mix reflection and translation.		

<Mental Maths>

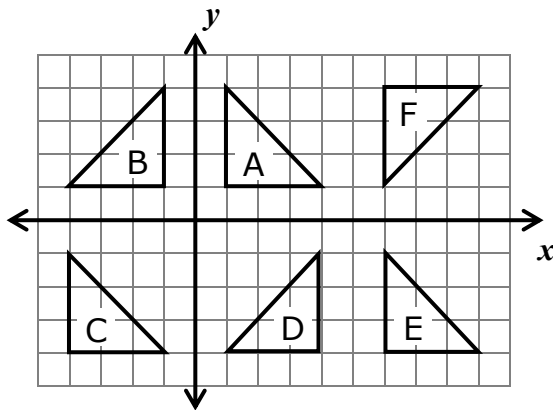
- a) $350 \div 70 = 5$ b) $400 \div 80 = 5$ c) $480 \div 60 = 8$
d) $560 \div 70 = 8$ e) $720 \div 80 = 9$

<Homework>

Is the shape:

- a) in the same direction after the transformation? **No**
b) the same shape after the transformation? **Yes**
c) the same size after the transformation? **Yes**

L98: Identify transformation



[1] Choose the triangles that are:

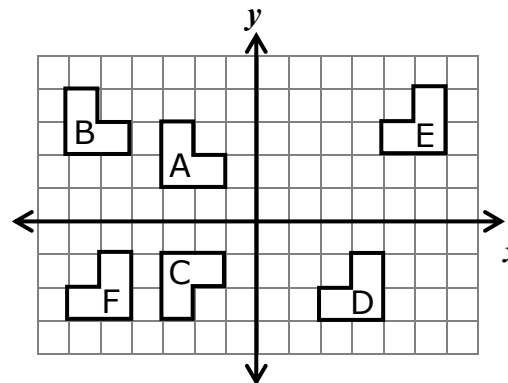
- a) the reflection of triangle D in the y-axis. **C**
b) the translation of triangle B. **D**

c) the reflection of triangle E in the x-axis. **F**

d) the translation of triangle A. **C, E**



[2]



Choose the L-shapes that are:

- a) the reflection of L-shape C in the x-axis. **A**
b) the translation of L-shape B. **A**
c) the reflection of L-shape B in the y-axis. **E**
d) the translation of L-shape F. **D, E**

[R] Is the shape:

- a) in the same direction after the reflection? **No**
b) the same shape after the reflection? **Yes**
c) the same size after the translation? **Yes**

Lesson	99 /120	Curriculum	B6.4.1.1.2 (p.152) e.g.1,2
Teaching Tips	Select some learners to distribute exercise books before the lesson begins.		
Objective	Understand the difference between discrete and continuous data.		
Introduction (sample)	- Write the definition of discrete and continuous data as shown on the board. - Explain the difference between discrete and continuous data with examples. - Let learners find examples of both types of data. - Discrete: Number of learners, cars, books, pencils, desks etc. - Continuous: Height, weight, temperature, time, distance etc.		
Teacher's Note	Sometimes, decimal fractions are used to show a discrete data e.g. the average number of children per family is 2.4.		

The answer is omitted because it can vary.

Note that the number of clocks is a discrete value, while time is a continuous one.

L99: Discrete and continuous data

Discrete data:

The values only take integers.

Continuous data:

The values can be decimal fractions.

[1A] Circle the discrete data.

person height weight book
distance day mass matchstick

[1B] Give two examples of discrete data.

cars, pencils, questions, years, dogs etc.

.....

[2A] Circle the continuous data.

clock bottle length month
time friend area student

[2B] Give two examples of continuous data.

mass, volume, speed, angle, blood pressure etc.

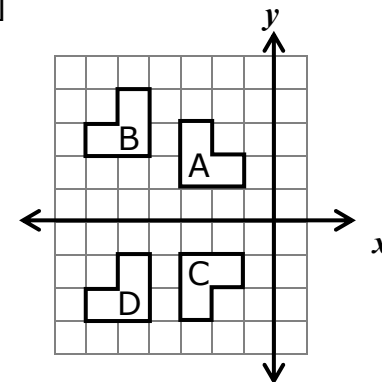
<Mental Maths>

a) $360 \div 40 = 9$ b) $420 \div 60 = 7$ c) $480 \div 80 = 6$
d) $560 \div 80 = 7$ e) $720 \div 90 = 8$

<Homework>

Find two discrete and two continuous data around you.

[R]



Choose the L-shapes that are:

a) the reflection of L-shape A in the x-axis. **C**
b) the translation of L-shape D. **B**

Lesson	100 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L101, [2]: L102, [3]: L103, [4]: L104.		

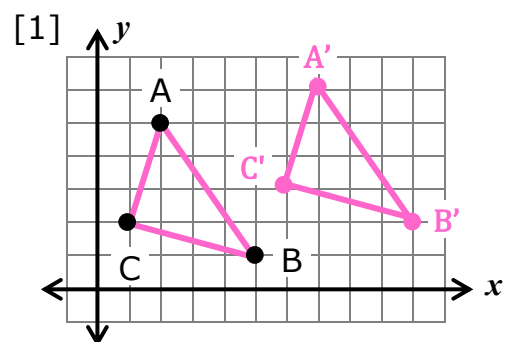
<Mental Maths>

- a) $360 \div 60 = 6$ b) $420 \div 70 = 6$ c) $490 \div 70 = 7$
d) $630 \div 70 = 9$ e) $810 \div 90 = 9$

<Homework>

*No homework.

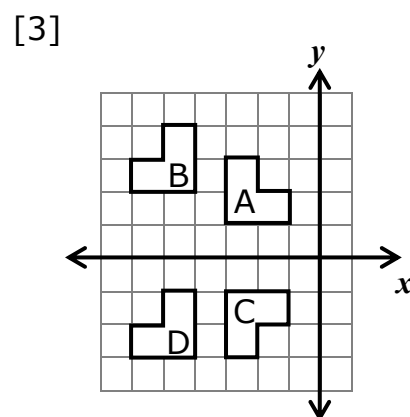
L100: Review



- a) Translate A, B and C by $\begin{pmatrix} 5 \\ 1 \end{pmatrix}$.
b) Draw two triangles by connecting each point.

- [2] Among, size, direction, shape of the 2-D shapes, which of them are the same after reflection?

Size and shape



Choose the L-shapes that are:

- a) the reflection of L-shape A in the x-axis. **C**
b) the translation of L-shape D. **B**

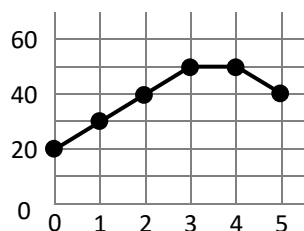
- [4] Circle the discrete data.

person height friend
length month time

Lesson	101 /120	Curriculum	B6.4.1.1.1 (p.151) e.g.3
Teaching Tips	Have learners recall what they learned in previous lessons.		
Objective	Understand a line graph.		
Introduction (sample)	- Draw a line graph showing how the temperature of water increases over time as it is heated for 3 minutes as shown on the board. - Show how to interpret data represented in a line graph. - Fill in the table from 0, 1 and 2 minutes.		
Teacher's Note	- Let learners understand that line graphs are used to show how one variable changes in relation to another over time. The vertical axis often represents the variable being measured, while the horizontal axis typically shows time. [1] has more questions than [2] because drawing bar graph takes time in [2].		

On a graph, if a point is not marked with a number, its value lies between the two nearest values.

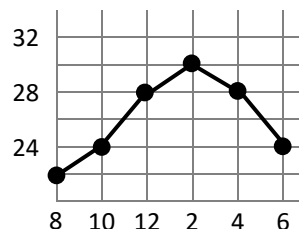
L101: Understand a line graph



Time	0	1	2	3	4	5
Temp.	20	30	40	50	50	40

- [1] a) What is the temperature of water after 5 minutes? **40°C**
- b) How long does it take to be 50°C?
3 minutes
- c) Fill in the table above.

[2] The line graph shows change of temperature of a day.



- a) What is the highest temperature of the day? **30°C**
- b) Fill in the table below.

Time	8	10	12	2	4	6
Temp.	22	24	28	30	28	24

<Mental Maths>

- a) $150 \div 3 = 50$ b) $180 \div 2 = 90$ c) $200 \div 5 = 40$
d) $240 \div 6 = 40$ e) $280 \div 4 = 70$

<Homework>

Refer to [2].

- a) What time is the lowest temperature of the day? **22°C**
- b) When did the temperature drop the most?
Between 4-6 o'clock

- c) When did the temperature rise the most?

Between 10-12 o'clock

[R] Circle the continuous data.

time friend area student
car height mass bike

Lesson	105 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L106, [2]: L107 & L108, [4]: L109.		

<Mental Maths>

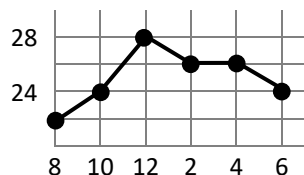
- a) $160 \div 8 = 20$ b) $200 \div 4 = 50$ c) $240 \div 4 = 60$
d) $270 \div 9 = 30$ e) $320 \div 4 = 80$

<Homework>

*No homework.

L105: Review

[1] The line graph shows change of temperature of a day.



a) What is the highest temperature of the day? **28°C**

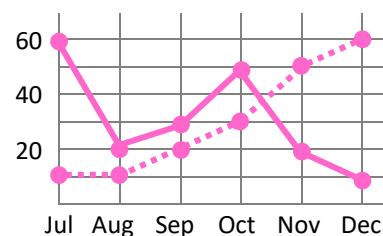
b) Fill in the table below.

Time	8	10	12	2	4	6
Temp.	22	24	28	26	26	24

[2]

Month	J	A	S	O	N	D
Ghana	60	20	30	50	20	10
SA	10	10	20	30	50	60

a) Draw a line graph of Ghana.



b) Draw a line graph of South Africa with a dotted line.

[3] Select better way of data collection.

a) The type of drinks to buy for a class party.

questionnaire observation

b) The number of times a 6 comes up when a die is rolled 100 times.

database **experiment**

Lesson	106 /120	Curriculum	B6.4.1.2.2 (p.155,156) e.g.1,2
Teaching Tips	Divide the board into two parts and copy the teacher manual as it is. Once learners have copied it, erase the left part to write the right part of the teacher manual.		
Objective	Understand how to collect data by interview.		
Introduction (sample)	- Let learners work in groups of 4 to collect and record the data. a) How old are you? - What is: b) the size of your shoe? c) your favourite drink? d) your bus fare to the school.		
Teacher's Note	- Prepare questionnaire to conduct the introduction activity if possible. - If learners do not know their shoe size, let them measure it.		

<Mental Maths>

- a) $320 \div 8 = 40$ b) $360 \div 9 = 40$ c) $450 \div 5 = 90$
 d) $540 \div 6 = 90$ e) $630 \div 9 = 70$

<Homework>

Refer to [1].

- a) What is the smallest shoe size? **5**
 b) Who likes Fanta? **Aku**
 c) Who is the youngest? **Ami, Paapa**

L106: Collect data

[1]

Name	Age	Shoe size	Drink	Bus fare
Kojo	12	5	Coke	2
Aku	12	6	Fanta	1
Ami	11	6	Sprite	3
Abu	13	7	Coke	1
Ama	12	7	Coke	2
Paapa	11	6	Fanta	3

- a) Who is the oldest? **Abu**
 b) What is the largest shoe size? **7**

.....

[2] Use the table in [1].

Which Drink is:

- a) the most popular? **Coke**
 b) the least popular? **Sprite**
 c) How old is the youngest learner? **11**
 d) Who has the smallest shoe size?
Kojo
 e) Who pays the most expensive bus fare?
Ami, Paapa

[R] Select better way of data collection.

- a) The time it takes a learner to solve a mathematics problem.
observation experiment
 b) The rainfall amount in Accra for the last 10 years.
database experiment

Lesson	107 /120	Curriculum	B6.4.1.2.3 (p.157) e.g.1,2
Teaching Tips	Encourage learners to write in their exercise books. The more they write, the better their writing skills will become.		
Objective	Be able to summarise data using a table.		
Introduction (sample)	- Refer to L106 [1]. - Show how to summarise information of drinks using tallies.		
Teacher's Note	- When drawing a tally, don't count everything first and then draw the tally marks. - You should cross out and draw a tally one by one as you count.		

Use the data in L106.

L107: Summarise data

Drink	Tallies	Frequency
Coke		3
Fanta		2
Sprite		1

[1] a) Summarise the age of learners in the table below.

Age	Tallies	Frequency
11		2
12		3
13		1

b) What is the lowest age? **11**

c) Which age has the least learners? **13**

.....

[2] a) Summarise the shoe size of learners in the table below.

Shoe size	Tallies	Frequency
5		1
6		3
7		2

b) What is the largest shoe size? **7**

<Mental Maths>

a) $350 \div 5 = 70$ b) $400 \div 5 = 80$ c) $450 \div 9 = 50$
d) $540 \div 9 = 60$ e) $640 \div 8 = 80$

<Homework>

Summarise the bus fare of learners in the table below.

Bus fare	Tallies	Frequency
1		2
2		2
3		2

c) Which shoe size has the most learners? **6**

[R] Refer to L106 [1].

a) Which Drink is the least popular?

Fanta

b) How old is the oldest learner? **13**

b) Who pays the least bus fare?

Aku, Abu

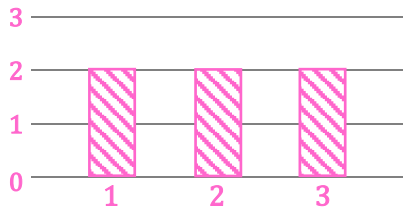
Lesson	108 /120	Curriculum	B6.4.1.2.3 (p.157) e.g.2,3
Teaching Tips	Have learners read the sentences, pointing to each word with your finger. Support learners if they have difficulty reading any of the words.		
Objective	Be able to analyse data using graphs.		
Introduction (sample)	Show how to draw a bar graph using the data of favourite drinks in L107.		
Teacher's Note	The data is the same as the previous lesson.		

<Mental Maths>

- a) $350 \div 7 = 50$ b) $400 \div 8 = 50$ c) $480 \div 6 = 80$
d) $560 \div 7 = 80$ e) $720 \div 8 = 90$

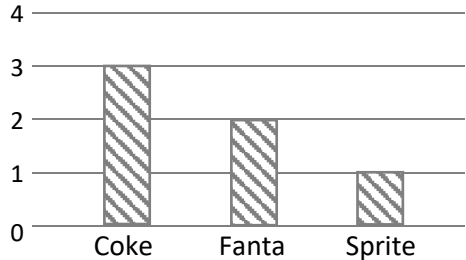
<Homework>

Draw a bar graph of bus fare.

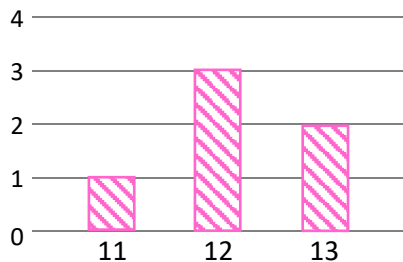


Use the data in L107.

L108: Analyse data

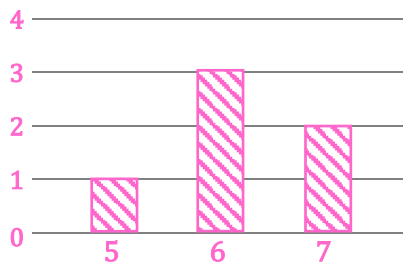


[1] a) Draw a bar graph of age.



- b) What is the highest age? **13**
c) Which age has the most learners? **12**

.....
[2] a) Draw a bar graph of shoe size.



b) What is the smallest shoe size? **5**

c) Which shoe size has the least learners? **5**

[R] Refer to L107 [1].

- a) What is the highest age? **13**
b) Which age has the most learners? **12**

Lesson	109 /120	Curriculum	B6.4.2.2.1 (p.158) e.g.1-3
Teaching Tips	Encourage learners to memorise as many words as possible (not just 1 or 2 letters) when copying from the board.		
Objective	Understand the experimental probability		
Introduction (sample)	- Let learners work in pairs. One learner tosses a coin 10 times while the other records the results using tallies. Then, they swap roles and conduct another 10 trials. - Let learners find the experimental probability. - Draw a table as shown on the board. This table shows the outcome of throwing a die for 50 times. Then, explain how to find the probability of getting 1.		
Teacher's Note	(Probability) = (Number of desired outcomes) ÷ (Total number of possible outcomes) - The data will be used in the L114.		

<Mental Maths>

- a) $360 \div 4 = 90$ b) $420 \div 6 = 70$ c) $480 \div 8 = 60$
d) $560 \div 8 = 70$ e) $720 \div 9 = 80$

<Homework>

Answer as [2B].

a) head: 1 tail: 9 $\frac{9}{10}$

b) head: 5 tail: 15 $\frac{15^3}{20_4} = \frac{3}{4}$

The total number of the trial is 50 times.

L109: Experimental probability (1)

Outcome	1	2	3	4	5	6
Frequency	9	7	11	5	10	8

The probability of getting 1 is $\frac{9}{50}$.

[1A] What is the probability of getting:

a) 2? $\frac{7}{50}$. b) 5? $\frac{10^1}{50_5} = \frac{1}{5}$.

[1B] Find the probability of getting a head when tossing a coin for 10 times. The results were as follows:

a) head: 7 tail: 3 $\frac{7}{10}$

b) head: 4 tail: 6 $\frac{4^2}{10_5} = \frac{2}{5}$

[2A] Answer as [1A].

a) 3? $\frac{11}{50}$. b) 4? $\frac{5^1}{50_{10}} = \frac{1}{10}$.

[2B] Find the probability of getting a tail when tossing a coin.

The results were as follows:

a) head: 3 tail: 7 $\frac{7}{10}$

b) head: 15 tail: 5 $\frac{5^1}{20_4} = \frac{1}{4}$

All possible outcome is $3 + 7 = 10$

[R] Refer to L108 [2].

- a) What is the largest shoe size? 7
b) Which shoe size has the most learners? 6

Lesson	110 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L106-L108, [2]: L109.		

<Mental Maths>

a) $360 \div 6 = 60$ b) $420 \div 7 = 60$ c) $490 \div 7 = 70$
d) $630 \div 7 = 90$ e) $810 \div 9 = 90$

<Homework>

*No homework.

Don't forget to make a group of five in drawing tallies

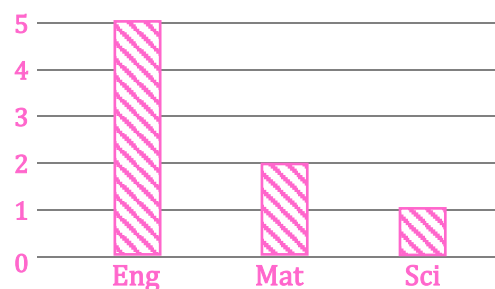
L110: Review

[1] a) Summarise the data in the table.

Name	Favourite Subject
Kofi	English
Ama	Science
Kwasi	English
Akua	English
Kwaku	Maths
Afua	English
Kwame	Maths
Adwoa	English

Favourite Subject	Tallies	Frequency
English		5
Maths		2
Science		1

b) Draw a bar graph of the table.



c) What is the most popular subject?
English

[2] Find the probability of getting a head when tossing a coin.
The results were as follows:

a) head: 3 tail: 7 $\frac{3}{10}$
b) head: 15 tail: 5 $\frac{15}{20} = \frac{3}{4}$

Lesson	111 /120	Curriculum	B6.4.2.2.2 (p.160) e.g.1-3
Teaching Tips	When a learner presents, repeat exactly what they said. Do not summarise or rephrase.		
Objective	Be able to find the experimental probability		
Introduction (sample)	- Let learners work in groups. Each group spins the 8-sector spinner 20 times, taking turns. Others should record the results using tallies. - Let learners find the experimental probability of getting 2 or 3, odd numbers and less than 3.		
Teacher's Note	- You can use dice if you don't have enough number of spinners for each group. However, it is very important to show the spinner. - Remind learners that even numbers are multiples of 2, and odd numbers are numbers that are not even.		

<Mental Maths>

- a) $150 \div 30 = 5$ b) $180 \div 20 = 9$ c) $200 \div 50 = 4$
d) $240 \div 60 = 4$ e) $280 \div 40 = 7$

<Homework>

Refer to [1].

a) 2. $\frac{4^1}{20_5} = \frac{1}{5}$

b) 1 or 5. $\frac{5^1}{20_4} = \frac{1}{4}$

c) a number less than 3. $\frac{7}{20}$

L111: Experimental probability (2)

[1]	Outcome	1	2	3	4	5
	Frequency	3	4	5	6	2

Find the probability of getting:

a) 3. $\frac{5^1}{20_4} = \frac{1}{4}$

b) 2 or 3. $\frac{4+5}{20} = \frac{9}{20}$

c) an even number.

$$\frac{4+6}{20} = \frac{10^1}{20_2} = \frac{1}{2}$$

.....

[2] Refer to [1].

Find the probability of getting:

a) 4. $\frac{6^3}{20_{10}} = \frac{3}{10}$

b) 1 or 3. $\frac{3+5}{20} = \frac{8^2}{20_5} = \frac{2}{5}$

c) an odd number. $\frac{3+5+2}{20} = \frac{10^1}{20_2} = \frac{1}{2}$

d) a number greater than 3.

$$\frac{6+2}{20} = \frac{8^2}{20_5} = \frac{2}{5}$$

[R] Find the probability of getting a tail when tossing a coin.
The results were as follows:

a) head: 9 tail: 1 $\frac{1}{10}$

b) head: 12 tail: 8 $\frac{8^2}{20_5} = \frac{2}{5}$

Lesson	112 /120	Curriculum	B6.4.2.2.1 (p.158,159) e.g.1-6
Teaching Tips	While you are writing on the board, let learners copy it in their exercise books.		
Objective	Understand the theoretical probability of an outcome.		
Introduction (sample)	• Explain the possible outcomes of coins and a die as shown on the board. • Explain theoretical probabilities as what should happen in an ideal situation calculated by (Number of desired outcomes) ÷ (Total number of possible outcomes). • Show how to find the probability as shown on the board.		
Teacher's Note	• The difference between the experimental and theoretical probability is that - Theoretical probability is what we expect to happen. - Experimental probability is what really happens when we try it.		

<Mental Maths>

- a) $150 \div 50 = 3$ b) $180 \div 30 = 6$ c) $210 \div 30 = 7$
d) $240 \div 80 = 3$ e) $280 \div 70 = 4$

<Homework>

A bag contains 3 red and 7 green balls.
Find the probability of picking:

- a) a red ball. $\frac{3}{10}$
b) a green ball. $\frac{7}{10}$

L112: Theoretical probability (1)

coin: {head, tail}

die: {1, 2, 3, 4, 5, 6}

The probability of getting:

- a) a head is $\frac{1}{2}$. b) 5 in a die is $\frac{1}{6}$.

[1A] Find the probability of getting:

- a) a tail. $\frac{1}{2}$ b) 2 in a die. $\frac{1}{6}$

[1B] Akua spin a 8-sector spinner.

What is the probability of pinning:

- a) 2. $\frac{1}{8}$ b) 5. $\frac{1}{8}$

.....

[2A] Answer as [1A].

- a) a head. $\frac{1}{2}$ b) 5 in a die. $\frac{1}{6}$

[2B] A bag contains 6 red and 4 green balls. Find the probability of picking:

- a) a red ball. $\frac{6}{10} = \frac{3}{5}$

- b) a green ball. $\frac{4}{10} = \frac{2}{5}$

[R]	Outcome	1	2	3	4
	Frequency	4	3	6	2

Find the probability of getting:

- a) 3. $\frac{6}{15} = \frac{2}{5}$

- b) 2 or 3. $\frac{3+6}{15} = \frac{9}{15} = \frac{3}{5}$

- c) an even number. $\frac{3+2}{15} = \frac{5}{15} = \frac{1}{3}$

Lesson	114 /120	Curriculum	B6.4.2.2.3 (p.161) e.g.1,2
Teaching Tips	Select some learners to distribute exercise books before the lesson begins.		
Objective	Understand the difference between experimental and theoretical probability.		
Introduction (sample)	- Find the theoretical probability of getting a head when tossing a coin. $\frac{1}{2}$ - Then, find the experimental probability which was done in L109. - Compare the difference of theoretical and experimental probability.		
Teacher's Note	- If we combine the outcomes from all the groups and calculate the experimental probability based on the total, the result will be closer to the theoretical probability than the results of experimental probability from each group. - In [2B] c), it will be difficult for learners to write the answer, but it is ok. - The more times you try, the closer the result gets to the theoretical probability.		

Compare the difference between experimental and theoretical probability.

L114: Experimental and theoretical probability

[1A] Adwoa threw a die 60 times.

Outcome	1	2	3	4	5	6
Frequency	8	11	7	9	13	12

Find the experimental probability of getting:

a) 2. $\frac{11}{60}$

b) an odd number. $\frac{28}{60} = \frac{7}{15}$

[1B] In [1A], find the theoretical probability of getting:

a) 2. $\frac{1}{6}$ b) an odd number. $\frac{3}{6} = \frac{1}{2}$

[2A] Kwadwo spun a 5-sector spinners 50 times.

Outcome	1	2	3	4	5
Frequency	10	8	12	11	9

Find the experimental probability of getting:

a) 3. b) a number greater than 3.

$\frac{12}{50} = \frac{6}{25}$ $\frac{11+9}{50} = \frac{20}{50} = \frac{2}{5}$

<Mental Maths>

a) $160 \div 40 = 4$ b) $180 \div 90 = 2$ c) $240 \div 30 = 8$
d) $270 \div 30 = 9$ e) $300 \div 60 = 5$

<Homework>

Refer to [1A].

a) 4. $\frac{3}{20} = \frac{3}{20}$

b) an even number. $\frac{32}{60} = \frac{8}{15}$

[2B] In [2A], find the theoretical probability of getting:

a) 3. $\frac{1}{5}$

b) a number greater than 3. $\frac{2}{5}$

c) Compare the difference between the answers in [2A] and [2B].

In a), the answers are close, but different.

In b), the answers are the same.

[R] When throwing a die, find the

probability of getting 2 or 3. $\frac{2}{6} = \frac{1}{3}$

Lesson	115 /120	Curriculum	Review Lesson
Teaching Tips	Have learners solve exercises independently. The more they practise, the better they will understand the content.		
Objective	Ensure the understanding of the topic.		
Introduction (sample)	*No introduction in a review lesson.		
Teacher's Note	- Please write all the questions on the board and give learners 30 minutes to answer them. After 30 minutes, please conduct peer marking. - You can skip this lesson if you are behind the scheme of work. - The tasks corresponding to each lesson are as follows: [1]: L111, [2]: L112 & L113, [3]: L114.		

<Mental Maths>

a) $160 \div 80 = 2$ b) $200 \div 40 = 5$ c) $240 \div 40 = 6$
d) $270 \div 90 = 3$ e) $320 \div 40 = 8$

<Homework>

*No homework.

L115: Review

Kofi spins a 5-sector spinner for 50 times.

Outcome	1	2	3	4	5
Frequency	8	11	10	9	12

[1] Find the experimental probability of getting:

a) 4. $\frac{9}{50}$ b) 2 or 3. $\frac{11 + 10}{50} = \frac{21}{50}$

c) an odd number.

$$\frac{8 + 10 + 12}{50} = \frac{30}{50} = \frac{3}{5}$$

[2] Find the theoretical probability of getting:

a) 3. $\frac{1}{5}$

b) 2 or 3. $\frac{2}{5}$

c) an odd number. $\frac{3}{5}$

[3] Compare the difference between the answers of [1] and [2].

In b), the answers are close, but different.

In a) and c), the answers are the same.

Lesson	116 /120	Curriculum	B6.1.2.3.1 (p.126) e.g.1; B6.1.1.3.1 (p.122) e.g.5
Teaching Tips	Have learners recall what they learned in previous lessons.		
Objective	Find common factors of three numbers.		
Introduction (sample)	Find the HCF and LCM of 12, 20 and 30 as shown on the board. Explain how to calculate it.		
Teacher's Note	- Learners will learn perfect numbers in B8, so this is just an introduction. - Numbers whose factors added up to the number is called perfect numbers. This is very specific case. (In [1], 6 is a perfect number.)		

This diagram is omitted in the rest of the tasks due to space constraints.

L116: Common factors

2	12	20	30
2	6	10	15
3	3	5	15
5	1	5	5
	1	1	1

$$\text{HCF} = 2, \text{LCM} = 2 \times 2 \times 3 \times 5$$

[1] a) Find the factors of 6, 9 and 12.

$$6: \{1, 2, 3, 6\}$$

$$9: \{1, 3, 9\}$$

$$12: \{1, 2, 3, 4, 6, 12\}$$

b) Add each factors of 6, 9 and 12 except for the number itself.

$$6: 1 + 2 + 3 = 6$$

$$9: 1 + 3 = 4$$

$$12: 1 + 2 + 3 + 4 + 6 = 16$$

[2] In 6, 9 and 12, find:

a) the multiples of each numbers up to 40.

$$\{6, 12, 18, 24, 30, 36\}$$

$$\{9, 18, 27, 36\}$$

$$\{12, 24, 36\}$$

Learners can use factor trees if the above method is too difficult.

<Mental Maths>

$$\text{a) } 320 \div 80 = 4 \quad \text{b) } 360 \div 90 = 4 \quad \text{c) } 450 \div 50 = 9$$

$$\text{d) } 540 \div 60 = 9 \quad \text{e) } 630 \div 90 = 7$$

<Homework>

a) Find the factors of 4, 8 and 12.

$$4: \{1, 2, 4\}$$

$$8: \{1, 2, 4, 8\}$$

$$12: \{1, 2, 3, 4, 6, 12\}$$

b) Find the HCF. 4

This is another solution.

b) the HCF. 3

c) the LCM. 36

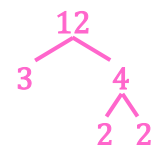
$$6 = 2 \times 3$$

$$9 = 3 \times 3$$

$$12 = 2 \times 2 \times 3$$

$$\text{HCF: } 3$$

$$\text{LCM: } 2 \times 2 \times 3 \times 3 = 36$$



[R] When throwing a die, find the theoretical probability of getting:

$$\text{a) } 5. \quad \frac{1}{6}$$

$$\text{b) a number less than 3. } \frac{2}{6} = \frac{1}{3}$$

Lesson	117 /120	Curriculum	B6.1.2.2.1 (p.125) e.g.1
Teaching Tips	Organise the board so that others can understand the lesson content just by looking at it.		
Objective	Be able to solve (2-digit)×(2-digit) whose sum is (2-digit) + (2-digit).		
Introduction (sample)	Show how to solve e.g. $12 \times 43 = 516$ by box method and column method. Explain each of them step by step.		
Teacher's Note	- This lesson focus on (2-digit) × (2-digit) with no carrying or carrying once. - At least, learners need to master column method.		

<Mental Maths>

- a) $350 \div 50 = 7$ b) $400 \div 50 = 8$ c) $450 \div 90 = 5$
d) $540 \div 90 = 6$ e) $640 \div 80 = 8$

<Homework>

Solve:

- a) $34 \times 5 = 170$
b) $14 \times 28 = 392$
c) $18 \times 24 = 432$
d) $35 \times 16 = 560$

L117: Solve by box method

[1] Solve by box method and column method.

a) 24×6

$$\begin{array}{r|rr} \times & 20 & 4 \\ \hline 6 & 120 & 24 \\ \hline \end{array} \rightarrow 144 \qquad \begin{array}{r} 24 \\ \times 6 \\ \hline 144 \end{array}$$

b) 16×23

$$\begin{array}{r|rr} \times & 10 & 6 \\ \hline 20 & 200 & 120 \\ \hline 3 & 30 & 18 \\ \hline \end{array} \begin{array}{l} \rightarrow 320 \\ \rightarrow 48 \\ \hline 368 \end{array} \qquad \begin{array}{r} 16 \\ \times 23 \\ \hline 48 \\ 32 \\ \hline 368 \end{array}$$

c) 21×34

$$\begin{array}{r|rr} \times & 20 & 1 \\ \hline 30 & 600 & 30 \\ \hline 4 & 80 & 4 \\ \hline \end{array} \begin{array}{l} \rightarrow 630 \\ \rightarrow 84 \\ \hline 714 \end{array} \qquad \begin{array}{r} 21 \\ \times 34 \\ \hline 84 \\ 63 \\ \hline 714 \end{array}$$

.....

[2A] Solve:

32×28

$$\begin{array}{r|rr} \times & 30 & 2 \\ \hline 20 & 600 & 40 \\ \hline 8 & 240 & 16 \\ \hline \end{array} \begin{array}{l} \rightarrow 640 \\ \rightarrow 256 \\ \hline 896 \end{array} \qquad \begin{array}{r} 32 \\ \times 28 \\ \hline 16 \\ 56 \\ \hline 896 \end{array}$$

[2B] Kofi buys 12 bags of onions.

Each bag cost ₵42.

How much is the total cost?

$12 \times 42 = 504$. The cost is ₵504.

[R] a) In 2, 3 and 4, find the multiples of each numbers up to 20.

{2, 4, 6, 8, 10, 12, 14, 16, 18, 20}

{3, 6, 9, 12, 15, 18}

{4, 8, 12, 16, 20}

b) What is LCM? 12

Lesson	118 /120	Curriculum	B6.1.2.2.1 (p.125) e.g.4
Teaching Tips	Have learners copy everything from the board into their exercise books.		
Objective	Understand lattice method to solve (2-digit) × (2-digit).		
Introduction (sample)	Show how to solve $28 \times 43 = 1,204$ by lattice method and column method. Explain each of them step by step.		
Teacher's Note	- Lattice method for (2-digit) × (2-digit) has more complex rules. Make sure which direction to read the numbers. - At least, learners need to master column method.		

<Mental Maths>

- a) $350 \div 70 = 5$ b) $400 \div 80 = 5$ c) $480 \div 60 = 8$
d) $560 \div 70 = 8$ e) $720 \div 80 = 9$

<Homework>

Solve:

- a) $13 \times 13 = 169$
b) $22 \times 23 = 506$
c) $33 \times 32 = 1,056$

L118: Solve by lattice method

[1] Solve by column method and lattice method.

a) 23×8

$$\begin{array}{r} 23 \\ \times 8 \\ \hline 184 \end{array}$$

$$\begin{array}{cc} 2 & 3 \\ 1 & \begin{array}{|c|c|} \hline 1 & 2 \\ \hline 6 & 4 \\ \hline \end{array} & 8 \\ 8 & 4 \end{array}$$

b) 31×13

$$\begin{array}{r} 31 \\ \times 13 \\ \hline 93 \\ 31 \\ \hline 403 \end{array}$$

$$\begin{array}{cc} 3 & 1 \\ 4 & \begin{array}{|c|c|} \hline 0 & 0 \\ \hline 3 & 1 \\ \hline \end{array} & 1 \\ 0 & 3 \end{array}$$

c) 43×28

$$\begin{array}{r} 43 \\ \times 28 \\ \hline 344 \\ 86 \\ \hline 1204 \end{array}$$

$$\begin{array}{cc} 4 & 3 \\ 1 & \begin{array}{|c|c|} \hline 0 & 0 \\ \hline 8 & 6 \\ \hline \end{array} & 2 \\ 2 & \begin{array}{|c|c|} \hline 3 & 2 \\ \hline 2 & 4 \\ \hline \end{array} & 8 \\ 0 & 4 \end{array}$$

[2A] Solve:

43×52

$$\begin{array}{r} 43 \\ \times 52 \\ \hline 86 \\ 215 \\ \hline 2236 \end{array}$$

$$\begin{array}{cc} 4 & 3 \\ 2 & \begin{array}{|c|c|} \hline 2 & 1 \\ \hline 0 & 5 \\ \hline \end{array} & 5 \\ 2 & \begin{array}{|c|c|} \hline 0 & 0 \\ \hline 8 & 6 \\ \hline \end{array} & 2 \\ 3 & 6 \end{array}$$

[2B] Ama buys 37 packs of eggs.

Each pack holds 12 eggs.

How much is the total cost?

$37 \times 12 = 444, 444$ eggs.

[R] Solve by box method and column method.

a) $54 \times 17 = 918$

b) $73 \times 26 = 1,898$

The calculation process is omitted due to space constraints.

Lesson	119 /120	Curriculum	B6.1.2.1.1 (p.123) e.g.1,2; B6.1.2.1.2 (p.124) e.g.1-4
Teaching Tips	If more than half of the learners cannot solve the first task, explain how to solve it using it.		
Objective	Understand strategies to solve multiplication effectively.		
Introduction (sample)	Show how to solve 24×5 and 25×16 as shown on the board. Explain step by step.		
Teacher's Note	- Doubling and halving is important in [1A], [1B] and [2A]. - In [1B] b) and [2A] c), repeated doubling and halving are used to find answers for complex multiplication tasks. - In the homework, e) and f) are corresponding to B6.1.2.1.2, e.g. 4.		

<Mental Maths>

- a) $360 \div 40 = 9$ b) $420 \div 60 = 7$ c) $480 \div 80 = 6$
d) $560 \div 80 = 7$ e) $720 \div 90 = 8$

<Homework>

Solve:

- a) $64 \times 5 = 320$ b) $5 \times 58 = 290$
c) $14 \times 15 = 210$ d) $25 \times 56 = 1400$
e) $641 \times 1 = 641$ f) $0 \times 158 = 0$

(even numbers) $\times$ (multiples of 5) = (multiples of 10).

The calculation process is omitted due to space constraints.

L119: Understand multiplication strategies

$$24 \times 5 = 12 \times 2 \times 5$$

$$= 12 \times 10 = 120$$

$$25 \times 16 = 25 \times 2 \times 8$$

$$= 50 \times 8 = 400$$

[1A] Fill in the blanks.

- a) $26 \times 5 = \underline{13} \times \underline{2} \times 5$
 $= \underline{13} \times \underline{10} = \underline{130}$
b) $5 \times 24 = 5 \times \underline{2} \times \underline{12}$
 $= \underline{10} \times \underline{12} = \underline{120}$

[1B] Solve:

- a) $42 \times 5 = \underline{21} \times 2 \times 5$
 $= \underline{21} \times 10 = 210$
b) $25 \times 48 = \underline{25} \times 2 \times 24$
 $= \underline{50} \times 2 \times 12$
 $= \underline{100} \times 12 = 1200$

[2A] Solve:

- a) $12 \times 15 = \underline{6} \times 2 \times 15$
 $= \underline{6} \times 30 = 180$
b) $34 \times 5 = \underline{17} \times 2 \times 5$
 $= \underline{17} \times 10 = 170$

c) $25 \times 64 = \underline{25} \times 2 \times 32$
 $= \underline{50} \times 2 \times 16$
 $= \underline{100} \times 16 = 1600$

[2B] Fill in the blanks.

- a) $29 \times 7 = 30 \times \underline{7} - \underline{7} = \underline{203}$
b) $19 \times 8 = 20 \times \underline{8} - \underline{8} = \underline{152}$
c) $6 \times 18 = 6 \times (10 + \underline{8})$
 $= 6 \times \underline{10} + 6 \times \underline{8} = \underline{108}$

[R] Solve by column method and lattice method.

- a) $52 \times 18 = 936$
b) $63 \times 24 = 1,512$

Lesson	Review 1	Curriculum	Annual Review Lesson
Teaching Tips	*No teaching tips.		
Objective	Ensure the understanding of the topics learnt in B6.		
Introduction (sample)	- Show how to solve the following by column method. a) $218 \times 34 = 7,412$ b) $382 \times 856 = 326,992$		
Teacher's Note	- This lesson is a review of L24 and L26. - Column method is the most effective and general algorithm of multiplying numbers.		

The following five lessons are review of B6 for those who have done all the 120 allocated lessons.

<Mental Maths>

*No mental maths.

<Homework>

Solve:

a) $112 \times 53 = 5,936$

b) $368 \times 26 = 9,568$

c) $608 \times 47 = 28,576$

d) $463 \times 149 = 68,987$

Review of B6

[1] Solve:

a) 123×32

$$\begin{array}{r} 123 \\ \times 32 \\ \hline 246 \\ 369 \\ \hline 3936 \end{array}$$

b) 326×23

$$\begin{array}{r} 326 \\ \times 23 \\ \hline 978 \\ 652 \\ \hline 7498 \end{array}$$

c) 502×64

$$\begin{array}{r} 502 \\ \times 64 \\ \hline 2008 \\ 3012 \\ \hline 32128 \end{array}$$

[2] Solve:

a) 367×32

$$\begin{array}{r} 367 \\ \times 32 \\ \hline 734 \\ 1101 \\ \hline 11744 \end{array}$$

b) 607×40

$$\begin{array}{r} 607 \\ \times 40 \\ \hline 000 \\ 2428 \\ \hline 24280 \end{array}$$

c) 532×214

$$\begin{array}{r} 532 \\ \times 214 \\ \hline 2128 \\ 532 \\ 1064 \\ \hline 113848 \end{array}$$

[R] Solve:

a) $28 \times 5 = 14 \times 2 \times 5$
 $= 14 \times 10 = 140$

b) $5 \times 36 = 5 \times 2 \times 18$
 $= 10 \times 18 = 180$

Lesson	Review 4	Curriculum	Annual Review Lesson
Teaching Tips	*No teaching tips.		
Objective	Ensure the understanding of the topics learnt in B6.		
Introduction (sample)	Show how to solve the following. a) $\frac{4}{5} \times \frac{2}{3} = \frac{4 \times 2}{5 \times 3} = \frac{8}{15}$ b) $\frac{5}{6} \times \frac{3}{10} = \frac{5^1 \times 3^1}{6_2 \times 10_2} = \frac{1}{4}$		
Teacher's Note	- This lesson is a review of L53 and L54. - Simplifying the fraction before converting the mixed fraction to the improper fraction is faster. - In the exam, learners must convert improper fractions to mixed fractions.		

<Mental Maths>

*No mental maths.

<Homework>

Solve:

a) $\frac{7}{3} \times \frac{1}{4} = \frac{7 \times 1}{3 \times 4} = \frac{7}{12}$ b) $\frac{9}{7} \times \frac{3}{4} = \frac{9 \times 3}{7 \times 4} = \frac{27}{28}$

c) $\frac{8}{21} \times \frac{7}{16} = \frac{8^1 \times 7^1}{21_3 \times 16_2} = \frac{1}{6}$

d) $\frac{15}{4} \times \frac{10}{3} = \frac{15^5 \times 10^5}{4_2 \times 3_1} = \frac{25}{2} = 12\frac{1}{2}$

Review of B6

[1] Solve:

a) $\frac{1}{2} \times \frac{1}{2} = \frac{1 \times 1}{2 \times 2} = \frac{1}{4}$ b) $\frac{4}{5} \times \frac{2}{3} = \frac{4 \times 2}{5 \times 3} = \frac{8}{15}$

c) $\frac{4}{9} \times \frac{2}{3} = \frac{4 \times 2}{9 \times 3} = \frac{8}{27}$ d) $\frac{3}{8} \times \frac{3}{4} = \frac{3 \times 3}{8 \times 4} = \frac{9}{32}$

e) $\frac{1}{4} \times \frac{2}{5} = \frac{1 \times 2^1}{4_2 \times 5} = \frac{1}{10}$

f) $\frac{3}{4} \times \frac{11}{6} = \frac{3^1 \times 11}{4 \times 6_2} = \frac{11}{8} = 1\frac{3}{8}$

g) $\frac{8}{3} \times \frac{7}{4} = \frac{8_2 \times 7}{3 \times 4^1} = \frac{14}{3} = 4\frac{2}{3}$

[2] Solve:

a) $\frac{3}{4} \times \frac{5}{4} = \frac{3 \times 5}{4 \times 4} = \frac{15}{16}$ b) $\frac{5}{4} \times \frac{1}{2} = \frac{5 \times 1}{4 \times 2} = \frac{5}{8}$

c) $\frac{9}{5} \times \frac{7}{2} = \frac{9 \times 7}{5 \times 2} = \frac{63}{10} = 6\frac{3}{10}$

d) $\frac{7}{5} \times \frac{7}{3} = \frac{7 \times 7}{5 \times 3} = \frac{49}{15} = 3\frac{4}{15}$

e) $\frac{9}{10} \times \frac{5}{6} = \frac{9^3 \times 5^1}{10_2 \times 6_2} = \frac{3}{4}$

f) $\frac{8}{9} \times \frac{3}{2} = \frac{8^4 \times 3^1}{9_3 \times 2_1} = \frac{4}{3} = 1\frac{1}{3}$

g) $\frac{25}{8} \times \frac{16}{5} = \frac{15^5 \times 16^2}{8_1 \times 5_1} = \frac{10}{1} = 10$

[R] Solve:

a) $\frac{1}{5} + \frac{1}{7} = \frac{7}{35} + \frac{5}{35} = \frac{12}{35}$

b) $\frac{3}{8} + \frac{3}{5} = \frac{15}{40} + \frac{24}{40} = \frac{39}{40}$

c) $\frac{5}{6} - \frac{3}{7} = \frac{35}{42} - \frac{18}{42} = \frac{17}{42}$

d) $\frac{4}{3} - \frac{3}{7} = \frac{28}{21} - \frac{9}{21} = \frac{19}{21}$

Lesson	Review 5	Curriculum	Annual Review Lesson
Teaching Tips	*No teaching tips.		
Objective	Ensure the understanding of the topics learnt in B6.		
Introduction (sample)	Find the answer by manipulatives. a) $3 + x = 5$ $x = 2$ b) $x - 6 = 2$ $x = 8$ c) $3 + 4x = 15$ $x = 3$ d) $\frac{x}{2} - 3 = 8$ $x = 22$ Write the rule as shown on the board.		
Teacher's Note	- This lesson is a review of L81 and L82. - Linear equation is a part of preparation to JHS.		

<Mental Maths>

*No mental maths.

<Homework>

Solve:

a) $3x = 33$ $x = 11$

b) $\frac{x}{3} = 9$ $x = 27$

c) $2x + 3 = 11$ $x = 4$

d) $\frac{x}{3} + 5 = 1$ $x = -12$

Review of B6

Add, subtract, multiply or divide by the same number on both sides.

[1] Solve:

a) $4 + x = 15$ $x = 15 - 4 = 11$

b) $x - 9 = 7$ $x = 7 + 9 = 16$

c) $3x = 21$ $x = 7$ $\div 3$ d) $\frac{x}{2} = 6$ $x = 12$ $\times 2$

.....

[2] Solve:

a) $2x = 18$ $x = 9$ $\div 2$ b) $\frac{x}{3} = 6$ $x = 18$ $\times 3$

c) $6x - 3 = 21$ $6x = 24$ $x = 4$ $+3$ $\div 6$ d) $\frac{x}{5} + 2 = 6$ $\frac{x}{5} = 4$ $x = 20$ -2 $\times 5$

e) $4 + \frac{x}{4} = 2$ $\frac{x}{4} = -2$ $x = -8$ -4 $\times 4$

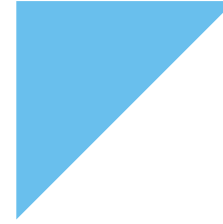
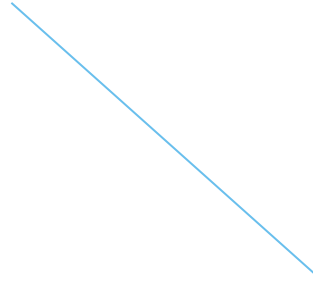
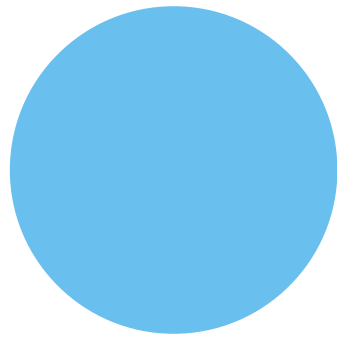
[R] Solve:

a) $\frac{4}{9} \times \frac{2}{3} = \frac{4 \times 2}{9 \times 3} = \frac{8}{27}$

b) $\frac{3}{8} \times \frac{3}{4} = \frac{3 \times 3}{8 \times 4} = \frac{9}{32}$

c) $\frac{9}{14} \times \frac{7}{12} = \frac{9^3 \times 7^1}{14_2 \times 12_4} = \frac{3}{8}$

d) $\frac{15}{7} \times \frac{28}{5} = \frac{15^3 \times 28^4}{7_1 \times 5_1} = \frac{12}{1} = 12$



About the Book

This book has been written in alignment with the new GES curriculum developed by the National Council for Curriculum and Assessment (NaCCA). It aims to provide learners with a strong foundation in Mathematics. The book is designed to be user-friendly for teachers, enabling them to deliver high-quality lessons effectively. It also includes a variety of questions and activities to make learning more engaging, easier to understand, and easier to remember.