

# INTRODUCTION

## What is the *FOCUS* series?

*FOCUS* is a mathematics-strategy practice series. Each student book in the series provides brief instruction and concentrated practice for students in one targeted Mathematics Strategy. *FOCUS* also allows students the opportunity for self-assessment of their performance. It allows teachers the opportunity to identify and assess a student's level of mastery.

### Six Mathematics Strategies featured in the *FOCUS* series:

- Building Number Sense
- Using Estimation
- Using Algebra
- Using Geometry
- Determining Probability and Averages
- Interpreting Graphs and Charts

The *FOCUS* series spans eight year levels, from year one to year eight. The introductory passages in each lesson are written at or below year level, allowing students to focus on the mathematics without struggling with the reading.

Book	Reading Level
Book A	at or below year one readability
Book B	at or below year two readability
Book C	at or below year three readability
Book D	at or below year four readability
Book E	at or below year five readability
Book F	at or below year six readability
Book G	at or below year seven readability
Book H	at or below year eight readability

## What is Building Number Sense, the Mathematics Strategy featured in this *FOCUS* book?

Number sense is an understanding of numbers and the relationships between them. As students build number sense, they become familiar with a variety of representations for whole numbers and parts of whole numbers.

Students learn to express numbers in a variety of forms. Three common ways to express numbers are in standard form, in word form and in expanded form. Students in the upper years learn to use exponents, in addition to the other common forms, to express numbers.

Students in years one to three develop counting skills and become familiar with ordinal numbers. They practise counting to identify numbers that come before or after another number. They also learn to use ordinal numbers to identify an item's position in a row or a list.

Students in years four to eight learn several ways to represent the parts of a whole. Students in year four are introduced to fractions. They learn to understand the parts of a fraction and to recognise the quantity represented by a fraction. Students in the upper years examine the relationship between fractions, decimals and percentages. They also learn to perform mathematical operations with fractions and decimals.

Students in year eight are introduced to prime and composite numbers, and they learn to determine a number's prime factorisation. They also practise following the order of operations when solving problems with parentheses, exponents or square roots.

## What is in each student book?

There are 48 student books in the *FOCUS* series. There is one student book for each of the six Mathematics Strategies, at each of the eight mathematics levels. Each student book contains:

- *To the Student*

This introduces the program and should be read and discussed with students to make sure they understand what they are to do in the book.

- *Table of Contents*

- *Learn About (Modelled Practice)*

These two pages provide basic instruction and modelling in the understanding and application of the Mathematics Strategy. The Learn About should be read and discussed with students to make sure they understand the Mathematics Strategy. Additional tips for helping students understand and use the Mathematics Strategy are included in the Mathematics Strategy Tips for the Teacher on pages 12–13 of this teacher guide.

- *Lesson Preview (Guided Practice)*

These two pages include a sample problem and two selected-response questions with explanations of why each of the eight answer choices is correct or not correct. The Lesson Preview should be read, worked through and discussed with students to make sure they understand how to answer strategy-based questions.

- *20 Lessons (Independent Practice)*

Each two-page lesson contains one passage, four strategy-based selected-response questions and one strategy-based constructed-response writing question.

**Selected-response questions:** In each lesson, students apply the Mathematics Strategy and then choose the correct answers for four selected-response (multiple-choice) strategy-based questions. You should model how to answer these kinds of questions using information on the Lesson Preview pages.

**Constructed-response writing questions:**

In each lesson, students apply the Mathematics Strategy to solve a strategy-based question. You should model how to answer these kinds of questions by using one of the sample answers provided in the Answer Key.

- *Tracking Chart*

Students use this chart for noting their completion of and performance in each lesson.

- *Self-Assessments*

These five forms allow students the opportunity for self-assessment of their performance.

- *Answer Form*

Students may use this form to record their answers to the eighty selected-response questions and to indicate that they have answered each of the twenty constructed-response writing questions.

## What is in each teacher guide?

There are 48 teacher guides in the *FOCUS* series, one for each student book. Each teacher guide contains:

- suggested instructions for using the *FOCUS* series effectively in the classroom
- Mathematics Strategy Tips for the Teacher, a facsimile of the Learn About on pages 2–3 of the student book, with tips for additional discussion related to understanding and using the Mathematics Strategy
- four reproducibles: three Teacher Assessments to be used for individual student assessment in the Mathematics Strategy and one Class or Group Performance Graph to be used for class or group assessment in the Mathematics Strategy
- summary of research that supports the *FOCUS* series
- a completed Answer Form for the eighty selected-response questions in the student book
- an Answer Key for the eighty selected-response questions, plus sample answers for the twenty constructed-response writing questions in the student book

## How should I use the Mathematics Strategy Tips for the Teacher?

These pages contain a facsimile of the Learn About on pages 2–3 of the student book, along with extended information about the Mathematics Strategy, which you can use as a basis for in-depth discussion to make sure students understand the strategy and how to use it.

## Where do students record their answers?

Students should fill in their answers to the selected-response questions on the Answer Form on page 53 of the student book. If students use the Answer Form, they may detach it from the book. Alternatively, students may fill in the correct answers directly on the student book page.

Students should write their answers to the constructed-response questions directly on the lines provided in the student book. Students who use the Answer Form for the selected-response questions should fill in the circle on the Answer Form to show that they have answered the constructed-response question, which is the fifth question in each lesson.

# Teacher Assessment 1

(See Teacher Assessment 1 on page 6 of this teacher guide.)

Student's Name: \_\_\_\_\_ Teacher's Name: \_\_\_\_\_

Group 1: Lessons 1–5	Number Correct Responses	Percentage Correct Responses
Lesson 1	/5	%
Lesson 2	/5	%
Lesson 3	/5	%
Lesson 4	/5	%
Lesson 5	/5	%
Group 1 Total	/25	%

Group 2: Lessons 6–10	Number Correct Responses	Percentage Correct Responses
Lesson 6	/5	%
Lesson 7	/5	%
Lesson 8	/5	%
Lesson 9	/5	%
Lesson 10	/5	%
Group 2 Total	/25	%

Group 3: Lessons 11–15	Number Correct Responses	Percentage Correct Responses
Lesson 11	/5	%
Lesson 12	/5	%
Lesson 13	/5	%
Lesson 14	/5	%
Lesson 15	/5	%
Group 3 Total	/25	%

Group 4: Lessons 16–20	Number Correct Responses	Percentage Correct Responses
Lesson 16	/5	%
Lesson 17	/5	%
Lesson 18	/5	%
Lesson 19	/5	%
Lesson 20	/5	%
Group 4 Total	/25	%

Whole Book Total	Number Correct Responses	Percentage Correct Responses
	/100	%

## ANSWER KEY *(continued)*

### Lesson 8 (page 20)

1. C    2. C    3. C    4. B

5. Solution: The number 112 in expanded form is  $100 + 10 + 2$  and in word form is one hundred and twelve.

Sample Explanation: *First, I found the value of each digit in the number 112.*

*1 hundred*

*1 ten*

*2 ones*

*Then I wrote the sum of each digit's value.*

$$100 + 10 + 2$$

*Finally, as I read the number, I wrote the words.*

### Lesson 9 (page 22)

1. C    2. A    3. C    4. C

5. Solution: 326 is two more than 324.

Sample Explanation: *I counted up 2 from 324 to find 326.*

$$324, 325, 326$$

### Lesson 10 (page 24)

1. B    2. D    3. B    4. B

5. Solution: Kyle's postman delivered 524 letters today.

Sample Explanation: *I counted up 4 from 520 to find the number of letters delivered today.*

$$520, 521, 522, 523, 524$$

### Lesson 11 (page 26)

1. B    2. A    3. C    4. A

5. Solution:

$$\begin{array}{c} \bigcirc \bigcirc \\ \bigcirc \bigcirc \bigcirc \end{array} + \begin{array}{c} \bigcirc \bigcirc \bigcirc \\ \bigcirc \bigcirc \bigcirc \bigcirc \end{array} = 12$$

There are a total of 12 apples.

Sample Explanation: *First, I drew 5 circles to represent the apples in one bag and 7 circles to represent the apples in the other bag. Then I added the groups together to find the total.*

$$5 + 7 = 12$$

### Lesson 12 (page 28)

1. D    2. D    3. C    4. B

5. Solution: The number 204 in expanded form is  $200 + 4$ .

Sample Explanation: *First, I identified the value for each digit.*

*2 hundreds*

*4 ones*

*Then I wrote the sum of each digit's value.*

$$200 + 4$$

### Lesson 13 (page 30)

1. B    2. D    3. D    4. B

5. Solution: Butterflies are listed third.

Sample Explanation: *I started at ants and counted 3 animals to the right to find which one is listed third.*

*ants, beetles, butterflies, spiders and worms*

*1    2    3    4    5*

### Lesson 14 (page 32)

1. B    2. D    3. B    4. D

5. Solution: The problem  $3 + 16 = 19$  shows the number of biscuits and grapes that Joy ate at the picnic.

Sample Explanation: *I wrote a problem to add the 3 biscuits and the 16 grapes together.*

$$3 + 16 = 19$$

### Lesson 15 (page 34)

1. B    2. A    3. C    4. B

5. Solution: The number twenty-four in standard form is 24 and in expanded form is  $20 + 4$ .

Sample Explanation: *I used a place-value chart to write the number in standard form.*

tens (10)	ones (1)
2	4

*Then I wrote the sum of each digit's value.*

$$20 + 4$$