

# 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 Interpreting Graphs and Charts, the Mathematics Strategy featured in this *FOCUS* book?

Graphs and charts are used to organise and represent information. There are various types of graphs and charts. Each type is uniquely suited to represent a specific form of information. Students learn to read and interpret increasingly complex types of charts and graphs as they progress through the year levels.

Some graphs and charts are used to represent and compare amounts. Pictographs, which appear primarily in the early years, use pictures and symbols to represent amounts. Bar graphs use bars and numbers to represent amounts, and charts use words and numbers. Circle graphs show how the individual amounts in a group relate to the whole.

Graphs can be used to identify the location of places or items. Coordinate grids have a horizontal  $x$ -axis and a vertical  $y$ -axis. Numbers on the axes, called coordinates, are used to identify locations on coordinate grids. Maps represent locations and distances. Many maps include a scale, which shows how the distances on a map relate to actual distances.

Graphs can represent changes in amounts over time. Line graphs are commonly used for this purpose. Lines connect the points on a line graph. The lines represent change over time. In the later years, coordinate grids are used to show change over time. These are similar to line graphs, but the points are not connected with a line.

Students learn to interpret and apply the information displayed in graphs and charts. They answer questions that assess their ability to understand and analyse the information.

## 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.

## What is the correction procedure?

For the best results, correct each lesson orally with students immediately following its completion. You may correct the lessons with the students individually or as a class or group. Allow approximately 30 minutes for students to read the passage and answer the five questions. Allow 15 minutes for correction and discussion.

For the selected-response questions, read the correct responses. Discuss why the correct answer choices are correct and why the remaining answer choices are not correct, as modelled on page 5 of the Lesson Preview in the student book. Explain to students any content or concepts that they may not fully understand. Allow time for students to share their strategies for answering the questions.

For the constructed-response question, invite students to read their responses. Discuss why various responses are correct or not correct. A correct student response will be similar in content and scope to the sample answer provided in the Answer Key. You might choose to read the sample answer to the students.

You may decide to correct and discuss lessons after students have completed each group of five lessons, instead of after each lesson.

After the whole class or group of students has completed each group of five lessons, allot about 25 minutes of class time for discussion of all the lessons.

## What is the Tracking Chart, and how is it used?

The Tracking Chart on page 47 of each student book allows students to track completion of and performance in each lesson in the book. Students record the date they have completed each lesson and then, after their work has been corrected, they record the number of questions that they answered correctly out of the five questions in the lesson. You should check to make sure that students accurately correct their answers and record their information.

The chart is grouped in sections of five lessons (Lessons 1–5, 6–10, 11–15 and 16–20). After students have finished each group of five lessons, they complete a Self-Assessment, which helps them assess their performance and set goals.

## What forms of assessment are featured in the *FOCUS* series, and how are they used?

In addition to problems with strategy-based questions, *FOCUS* also contains student Self-Assessments and Teacher Assessments.

### Self-Assessments

Students become more successful in mathematics after they have assessed their own performance against known standards. Some difficulties that students experience can be best revealed through self-assessment. This is especially important if the difficulties have been previously unknown to the teacher. Self-assessment enables students to focus on the process of performance as well as on end results. Student self-assessments are a valuable tool for students, and they help the teacher gain insight into each student's measure of performance.

## What is the suggested schedule for using *FOCUS* in the classroom?

The following is a suggested **Pacing Chart** for each book in the *FOCUS* series:

Day	Feature	Page	Time
Day 1	Learn About	Pages 2–3	45 minutes
Day 2	Lesson Preview	Pages 4–5	45 minutes
Day 3	Lesson 1	Pages 6–7	45 minutes
Day 4	Lesson 2	Pages 8–9	45 minutes
Day 5	Lesson 3	Pages 10–11	45 minutes
Day 6	Lesson 4	Pages 12–13	45 minutes
Day 7	Lesson 5	Pages 14–15	45 minutes
Day 8	Self-Assessment 1* Discussion of Lessons 1–5	Page 48	20 minutes 25 minutes
Day 9	Lesson 6	Pages 16–17	45 minutes
Day 10	Lesson 7	Pages 18–19	45 minutes
Day 11	Lesson 8	Pages 20–21	45 minutes
Day 12	Lesson 9	Pages 22–23	45 minutes
Day 13	Lesson 10	Pages 24–25	45 minutes
Day 14	Self-Assessment 2* Discussion of Lessons 6–10	Page 49	20 minutes 25 minutes
Day 15	Lesson 11	Pages 26–27	45 minutes
Day 16	Lesson 12	Pages 28–29	45 minutes
Day 17	Lesson 13	Pages 30–31	45 minutes
Day 18	Lesson 14	Pages 32–33	45 minutes
Day 19	Lesson 15	Pages 34–35	45 minutes
Day 20	Self-Assessment 3* Discussion of Lessons 11–15	Page 50	20 minutes 25 minutes
Day 21	Lesson 16	Pages 36–37	45 minutes
Day 22	Lesson 17	Pages 38–39	45 minutes
Day 23	Lesson 18	Pages 40–41	45 minutes
Day 24	Lesson 19	Pages 42–43	45 minutes
Day 25	Lesson 20	Pages 44–45	45 minutes
Day 26	Self-Assessment 4* Discussion of Lessons 16–20	Page 51	20 minutes 25 minutes
Day 27	Self-Assessment 5* Discussion of Lessons 1–20	Page 52	20 minutes 25 minutes

Note: The time noted for each lesson includes filling in the Tracking Chart, as well as correction and discussion of the lesson.

\* Students should complete a Self-Assessment no more than one day following the completion of the group of lessons.