

FOCUS

on Mathematics Series

Raise understanding and achievement in maths

FOCUS on Mathematics is a maths-strategy practice series that aids all students, including struggling students, to achieve mathematical success. Mastery of core maths strategies is a difficult task to fulfil because students must learn to identify and apply abstract maths concepts and strategies. The **FOCUS on Mathematics** series makes maths mastery attainable by providing semi-concrete tools for students to use in identifying more complex maths strategies. With repeated practice and exposure, students become confident in their ability to use strategies to solve maths problems. The **FOCUS on Mathematics** series is based in well-researched teaching and learning strategies, which means that teachers will engage their students with an educationally sound mathematics-practice program.

The FOCUS on Mathematics series covers:

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

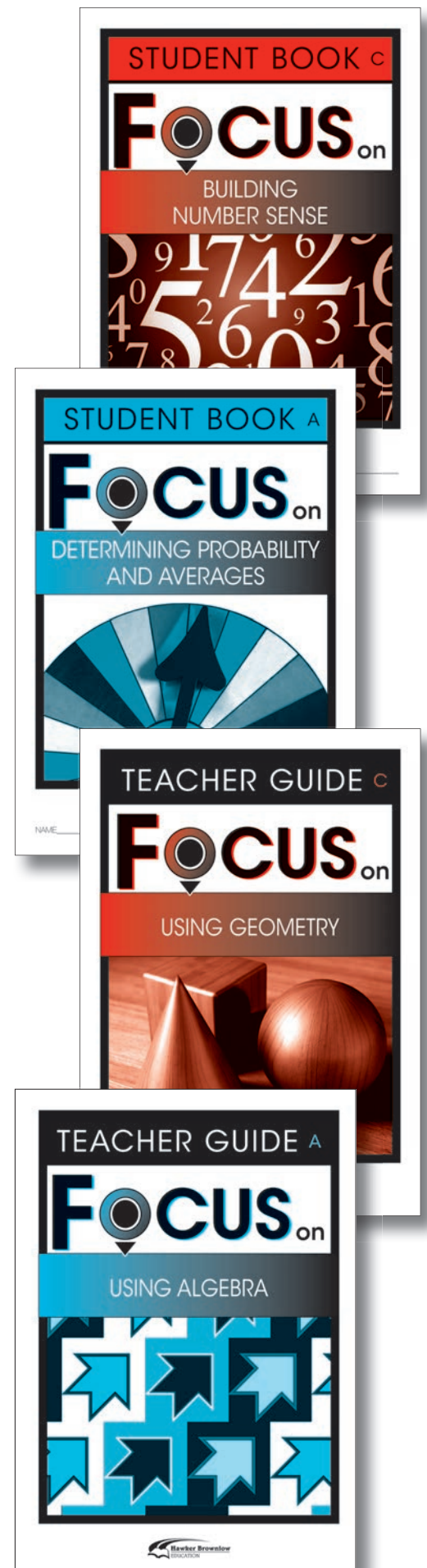
From Research to Application:

The **FOCUS on Mathematics** series provides repeated and focused practice of key maths strategies in the context of word problems. With more than 800 word problems in the series, students gain multiple opportunities to practise core maths concepts and strategies.

Each Student Book features:

- Learn About – overview with instruction and modelling
- Preview – guided practice with scaffolding, plus sample questions with correct and incorrect responses for discussion
- 20 independent practice lessons
- 5 self-assessments

"A focused, coherent progression of mathematics learning, with an emphasis on proficiency with key topics should become the norm in primary and high school mathematics curricula". National Mathematics Advisory Panel (NMAP)



How is FOCUS on Mathematics Supported by Research?

Students Need Help with	FOCUS on Mathematics Helps
Rational Numbers	Using Algebra, Building Number Sense and Using Estimation.
Word Problems	A total of 800 word problems are provided in this series.
Study Habits	Student Self-Assessments in each Student Book promote self-monitoring and goal-setting.

In answer to concerns about students' lacklustre mathematical performance, maths experts and researchers have joined forces to combat the slowing of mathematics progress.

The *FOCUS on Mathematics* series provides students with explicit instruction of key mathematical concepts and strategies combined with targeted practice in the context of word problems.

Modelled practice introduces students to the skill.

Learn About

Building Number Sense: Place Value and Writing Numbers

Numbers are made up of digits. Each digit in a number has a **place value**. The value of a digit depends on its place in a number. The chart below shows the place values of the digits in the number 42,368. The value of the 2 in this number is 2,000.

ten thousands (10,000)	thousands (1,000)	hundreds (100)	tens (10)	ones (1)
4	2	3	6	8

The number 42,368 has 4 ten thousands, 2 thousands, 3 hundreds, 6 tens and 8 ones. Numbers can be written in different ways.

- Standard form: 42,368
- Word form: forty-two thousand, three hundred and sixty-eight
- Expanded form: $40,000 + 2,000 + 300 + 60 + 8$

Frank and his parents travelled 1542 kilometres to see Frank's grandparents. What is the value of the 5 in the number 1542?



The 5 is in the hundreds place.
Five hundreds is 500.
The value of the 5 is 500.



Each digit in a number has a **place value**. The place value of a digit depends on its place in a number. Numbers can be written in standard form, in word form, or in expanded form.

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Building Number Sense Book D CAS9999 • © 2009 Hawker Brownlow Education

Students learn why each answer choice is correct or not correct.

Look at the answer choices for each question. Read why each answer choice is correct or not correct.

1. How many people surveyed preferred watermelon?

Ⓐ 10 people

This is not correct. The bar for watermelon lines up with a number between 15 and 20. So, 10 cannot be correct.

Ⓑ 15 people

This is not correct. The bar for watermelon lines up with a number between 15 and 20. So, 15 is higher.

The bar for watermelon lines up with a number between 15 and 20. So, 10 is closer to 15 than 20.

The bar for watermelon lines up with a number between 15 and 20. So, 15 is closer to 15 than 20.

The bar for watermelon lines up with a number between 15 and 20. So, 15 is closer to 15 than 20.

2. How many people surveyed were 19 or younger?

Ⓐ 16 people

This is correct. The number of people surveyed who were 19 or younger is equal to the sum of the number of people 9 or younger, 10-14 and 15-19.
 $3 + 5 + 8 = 16$ people.

Ⓑ 14 people

This is not correct. The number of people surveyed who were 19 or younger is equal to the sum of the number of people 9 or younger, 10-14 and 15-19.
 $3 + 5 + 8 = 16$ people, not 14.

Ⓒ 12 people

This is not correct. The number of people surveyed who were 19 or younger is equal to the sum of the number of people 9 or younger, 10-14 and 15-19.
 $3 + 5 + 8 = 16$ people, not 12.

Ⓓ 8 people

This is not correct. The number of people surveyed who were 19 or younger is equal to the sum of the number of people 9 or younger, 10-14 and 15-19.
 $3 + 5 + 8 = 16$ people, not 8.

Interpreting Graphs and Charts Book D CAS0024

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Word Problem Practice: Concentrated and repeated word problem practice.

Lesson 2

Read the passage. Then do Numbers 1-5.

Garden Vegies

Kim and her friends are planting a garden. They grow tomatoes, green beans, carrots, lettuce and radishes. Kim plans to sell the vegetables at the local market. She hopes to plant a larger garden next year.



1. Karen planted 24 tomato plants, of which 16 are plum tomatoes. The rest are cherry tomatoes. Which number sentence can help you find how many tomato plants are cherry tomatoes?

- Ⓐ $16 - c = 24$
 Ⓑ $16 + c = 24$
 Ⓒ $16 + 24 = c$
 Ⓓ $40 - c = 24$

2. Owen planted the same number of each of his favourite vegetables - lettuce, carrots and green beans. He planted 18 plants in all. How many of each type of vegetable did Owen plant?

- Ⓐ 3
 Ⓑ 6
 Ⓒ 18
 Ⓓ 21

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Using Algebra Book C CAS990X • © 2009 Hawker Brownlow Education

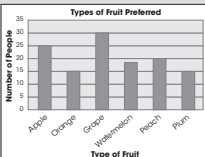
Skill is applied in 20 independent practice lessons.

Lesson Preview

Read these sample problems.

Interpreting Graphs and Charts

Mark and Martine surveyed random people to find which type of fruit they preferred. Mark made the bar graph showing how many people preferred each type of fruit. Martine made a chart showing the ages of the people surveyed.



Age	Number of People
9 or younger	III
10-14	IIII
15-19	IIII III
20-24	IIII II
25-29	IIII
30-34	IIII I
35-39	IIII IIIII
40-44	IIII IIIII IIIII
45-49	IIII IIIII
50-54	IIII III
55-59	IIII
60 or older	II

1. How many people surveyed preferred watermelon?

- Ⓐ 10 people
 Ⓑ 15 people
 Ⓒ 18 people
 Ⓓ 20 people

2. How many people surveyed were 19 or younger?

- Ⓐ 16 people
 Ⓑ 14 people
 Ⓒ 12 people
 Ⓓ 8 people

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Interpreting Graphs and Charts Book D CAS0024

Guided Practice: Sample problems

Lesson 6

Read the passage.
Then do Numbers 1–5.

Sydney Harbour Bridge

Thousands of people visit the Sydney Harbour Bridge each year. Visitors can climb 200 steps to reach the top of the bridge. If they wish they can then climb all the way along the top of the arch to the other side of the bridge! After reaching the top, adventurers enjoy a bird's-eye view of Sydney and its beautiful harbour.



1. The Sydney Harbour Bridge was completed on 19 January 1932. What is the value of the 1 in 1932?

- Ⓐ 100
- Ⓑ 1000
- Ⓒ 10,000
- Ⓓ 100,000

2. The bridge weighs 52,800 tonnes. What is the word form of the number 52,800?

- Ⓐ Five thousand and fifty four
- Ⓑ Five thousand, two hundred and eighty
- Ⓒ Fifty-two thousand and eighty
- Ⓓ Fifty-two thousand, eight hundred

3. 272,000 litres of paint were used to paint the Sydney Harbour Bridge. What is the place value of the first 2 in 272,000?

- Ⓐ hundreds
- Ⓑ ten thousands
- Ⓒ hundred thousands
- Ⓓ millions

4. One hundred and twenty thousand.

Building Number Sense Book D Lesson

- FOCUS Program offers:**
- 48 maths strategy practice books
 - targeted practice for six comprehension strategies
 - eight levels—A–H—for each strategy

Ordering Info...back cover

5. In 1932 the cost of building the bridge was \$9,431,144. What is the sum of the digits in the hundreds place, the ten thousands place and the millions place of this number? Show your work in the space below. Remember to check your solution.

Write your solution.

Explain how you found your solution.

Lesson 9

Read the passage.
Then do Numbers 1–5.

A Winning Season

Becky, Deni and Mel all play for the Hawks soccer team. The team has won 14 games this season. The girls have one more game left to play for the championship. If the Hawks win the game, the players will receive the winning trophy. The girls have been practising extra hard to win the championship.



1. One group of numbers below contains the numbers that appear on the shirts of four Hawks players. The number on each of the shirts is a multiple of 9. Which group contains these four numbers?

- Ⓐ 19, 39, 29, 9
- Ⓑ 45, 26, 9, 81
- Ⓒ 27, 90, 19, 63
- Ⓓ 54, 18, 72, 36

2. During one practice, the coach put the 18 players on the team into 6 equal groups. Which equation can help you find the number of players in each group?

- Ⓐ $6 \times 18 = p$
- Ⓑ $18 = p \times 6$
- Ⓒ $p = 18 - 6$
- Ⓓ $18 + 6 = p$

3. The missing number in the pattern below is the same as the age of the oldest player in the Hawks team. What is that number?

$$21\frac{1}{2}, 19, 16\frac{1}{2}, 14, \underline{\quad}$$

- Ⓐ $13\frac{1}{2}$
- Ⓑ 12
- Ⓒ $11\frac{1}{2}$
- Ⓓ 11

4. A team has 87 people.

Using Algebra Book D Lesson

- FOCUS Program offers:**
- 48 maths strategy practice books
 - targeted practice for six comprehension strategies
 - eight levels—A–H—for each strategy

Ordering Info...back cover

- Ⓑ 70 people
- Ⓒ 87 people
- Ⓓ 89 people

5. During the season, Becky scored 4 more goals than Mel. Mel scored 1 less goal than Deni. Deni scored 12 goals. How many goals did the girls score in all? Write equations with boxes or letters as unknowns. Show your work in the space below. Remember to check your solution.

Write your solution.

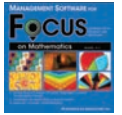
Explain how you found your solution.

FOCUS on Mathematics Series Management Software

- Windows Vista™ Ultimate, Business or Home – Pentium III 800MHz or faster with 512 MB RAM; 40 MB free hard disk space
- Windows XP (Service Pack 2) – Pentium III 500MHz or faster with 256 MB RAM; 40 MB free hard disk space.
- Macintosh – OS X 10.5; PowerPCTM G4 (867MHz+), PowerPC G5, or Intel-based Mac; 512 MB of RAM; 40 MB free hard disk space.
- Macintosh – OS X 10.4.8; PowerPCTM G3, G4, G5 or Intel-based Mac; 256 MB of Ram; 40 MB free hard disk space.

Additional Requirements:

Adobe Acrobat Reader required to view the ReadMe/Help file from within the software; also available as an HTML file on the Installation CD. Microsoft Excel required to export student records



CA11304 • \$49.95

ORDER FORM

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Building Number Sense							
Student Books				Teacher Guides			
Book	Year Level	Item #	Price (Pack of 5)	Qty	Item #	Price (each)	Qty
A	1.0-1.9	CA11212	\$30.00 (Pack of 5)		CA112129	\$9.95	
B	2.0-2.9	CA11213	\$30.00 (Pack of 5)		CA112139	\$9.95	
C	3.0-3.9	CA11214	\$30.00 (Pack of 5)		CA112149	\$9.95	
D	4.0-4.9	CA11215	\$30.00 (Pack of 5)		CA112159	\$9.95	
E	5.0-5.9	CA11216	\$30.00 (Pack of 5)		CA112169	\$9.95	
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F	6.0-6.9	CA11241	\$30.00 (Pack of 5)		CA112419	\$9.95	
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H	8.0-8.9	CA11243	\$30.00 (Pack of 5)		CA112439	\$9.95	

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Student Books				Teacher Guides			
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A	1.0-1.9	CA11252	\$30.00 (Pack of 5)		CA112529	\$9.95	
B	2.0-2.9	CA11253	\$30.00 (Pack of 5)		CA112539	\$9.95	
C	3.0-3.9	CA11254	\$30.00 (Pack of 5)		CA112549	\$9.95	
D	4.0-4.9	CA11255	\$30.00 (Pack of 5)		CA112559	\$9.95	
E	5.0-5.9	CA11256	\$30.00 (Pack of 5)		CA112569	\$9.95	
F	6.0-6.9	CA11257	\$30.00 (Pack of 5)		CA112579	\$9.95	
G	7.0-7.9	CA11258	\$30.00 (Pack of 5)		CA112589	\$9.95	
H	8.0-8.9	CA11259	\$30.00 (Pack of 5)		CA112599	\$9.95	

Determining Probability and Averages							
Student Books				Teacher Guides			
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A	1.0-1.9	CA11220	\$30.00 (Pack of 5)		CA112209	\$9.95	
B	2.0-2.9	CA11221	\$30.00 (Pack of 5)		CA112219	\$9.95	
C	3.0-3.9	CA11222	\$30.00 (Pack of 5)		CA112229	\$9.95	
D	4.0-4.9	CA11223	\$30.00 (Pack of 5)		CA112239	\$9.95	
E	5.0-5.9	CA11224	\$30.00 (Pack of 5)		CA112249	\$9.95	
F	6.0-6.9	CA11225	\$30.00 (Pack of 5)		CA112259	\$9.95	
G	7.0-7.9	CA11226	\$30.00 (Pack of 5)		CA112269	\$9.95	
H	8.0-8.9	CA11227	\$30.00 (Pack of 5)		CA112279	\$9.95	

Interpreting Graphs and Charts							
Student Books				Teacher Guides			
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B	2.0-2.9	CA11229	\$30.00 (Pack of 5)		CA112299	\$9.95	
C	3.0-3.9	CA11230	\$30.00 (Pack of 5)		CA112309	\$9.95	
D	4.0-4.9	CA11231	\$30.00 (Pack of 5)		CA112319	\$9.95	
E	5.0-5.9	CA11232	\$30.00 (Pack of 5)		CA112329	\$9.95	
F	6.0-6.9	CA11233	\$30.00 (Pack of 5)		CA112339	\$9.95	
G	7.0-7.9	CA11234	\$30.00 (Pack of 5)		CA112349	\$9.95	
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YEAR/READING LEVEL COLLECTIONS INCLUDE:

One pack of 5 Student Books and 1 Teacher Guide for each of the six strategy titles in your chosen level (A–H) plus the Management Software. Total of 30 Student Books, 6 Teacher Guides and 1 Management Software CD-ROM: \$260.00

An Example: Class Set A – If ordering Class Set A you would receive

- Building Number Sense – 5 x Student A Books + 1 x Teacher A Guide
- Using Estimation – 5 x Student A Books + 1 x Teacher A Guide
- Using Algebra – 5 x Student A Books + 1 x Teacher A Guide
- Using Geometry – 5 x Student A Books + 1 x Teacher A Guide
- Determining Probability and Averages – 5 x Student A Books + 1 x Teacher A Guide
- Interpreting Graphs and Charts – 5 x Student A Books + 1 x Teacher A Guide
- Classroom Management Software CD-ROM x 1

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Class Set H	CA11321	\$260.00	
Classroom Management Software	CA11304	\$49.95	

Supporting Research Booklets

Focus on Maths Research Booklet	CAT032	F. O. C
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