

**NELSON
MATHS**

AUSTRALIAN
CURRICULUM

F-6⁺

NELSON Maths



NELSON
CENGAGE Learning®
www.nelsonprimary.com.au

Nelson Maths: Australian Curriculum F-6+

Nelson Maths: Australian Curriculum supports the Australian Curriculum content strands *Number and Algebra*, *Measurement and Geometry*, and *Statistics and Probability* F-6, and integrates the proficiency strands of Understanding, Fluency, Problem Solving and Reasoning throughout the activities and tasks.

The **Nelson Maths: Australian Curriculum** program provides between 30 and 35 units of work for each year level, with each unit of work divided into three Lesson Plans. Providing flexibility, the Lesson Plans cater to students' different learning styles and diverse needs. Teachers are provided with a variety of opportunities to assess their students' understandings for future planning and learning.

The program:

- enables teachers to implement focused teaching
- assists students by scaffolding their learning
- improves students' mathematical understandings
- provides open-ended and stimulating tasks, allowing students to work at their appropriate developmental level
- caters to various and individual learning styles
- develops students' mental computation skills
- provides teachers with choices so they can readily meet the needs of individual students and/or groups of students
- allows for effective grouping of students
- integrates Information and Communication Technology (ICT)
- provides ongoing assessment and opportunities for a variety of assessment types.

Nelson Maths: Australian Curriculum Student Book F



A Different Dot-to-Dot DATE _____

★ Join the dots.

† Draw a line matching the pictures to the words.

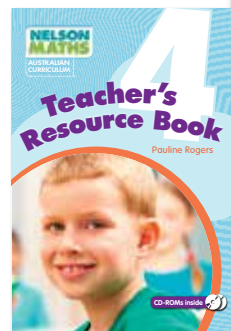
	six
	nine
	seven
	three
	eight

‡ Draw a group of things for each number.

seven	four
ten	six
eight	five

38 Counting with Numbers to 10 (NA-NA-NA-07) Number and place value (NA-NA-08) Understanding of the language of mathematics (NA-NA-09) Counting number names (NA-NA-01) and number words (NA-NA-02) up to 10. (NA-NA-03) Counting number names (NA-NA-01) and number words (NA-NA-02) up to 10. (NA-NA-03)

Nelson Maths: Australian Curriculum Teacher's Resource Book 4



Test A: Student Sheet 4.A

Location and transformation

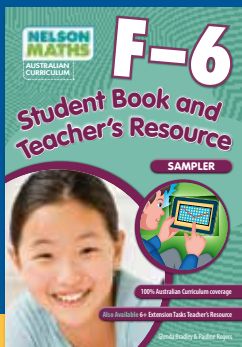
21 Tom was at the art gallery. He followed the path passing through the café to the location in the top right corner of the map. Where was Tom?

22 Look at the different-shaped islands. How far is it from the circle island to the triangle island if one square length represents 10 metres?

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VIEW SAMPLER eBook!

STUDENT BOOK AND TEACHER'S RESOURCE SAMPLER BOOK



The **Nelson Maths: Australian Curriculum** Sampler provides teachers with the opportunity to view pages from this exciting series.

The Sampler features one whole *Number and Algebra* unit for each year level, from Foundation to Year 6, which showcases the sequential development of content through the series. Also included in the Sampler are the Lesson Plans, Student Book pages and Student Assessment pages from an additional unit for each year level.

Contact your representative to request a copy or visit www.nelsonprimary.com.au/nelsonmaths to view the Sampler eBook.

While stocks last

AN CURRICULUM

Student Books

At the core of this series are the **Nelson Maths: Australian Curriculum** Student Books. Featuring engaging tasks that students can complete independently, they will ensure core mathematical skills are developed while learning and understanding is achieved.

Each Student Book features:

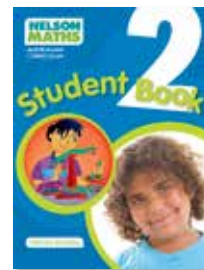
- three pages of activities for each unit (one Student Book page per Lesson Plan)
- one Student Assessment page per unit
- the linking *Australian Curriculum: Mathematics* content strand, content descriptions and code for that unit
- a Glossary of mathematical terms.



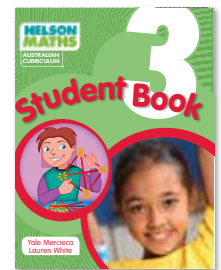
9780170227650
STUDENT BOOK: YEAR F



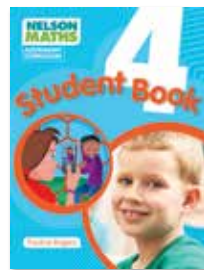
9780170227667
STUDENT BOOK: YEAR 1



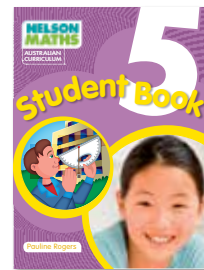
9780170227674
STUDENT BOOK: YEAR 2



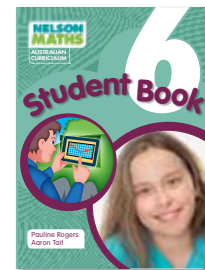
9780170227681
STUDENT BOOK: YEAR 3



9780170227698
STUDENT BOOK: YEAR 4



9780170227704
STUDENT BOOK: YEAR 5



9780170227711
STUDENT BOOK: YEAR 6

Hungry Frogs DATE: _____

Play a game.

You will need:

- a partner
- one set of cards for each player
(BLM 15 'Dot Patterns')

How to play:

- Choose a frog. Turn all your cards over and place them in a pile.
- Take a card from your pile. Your partner needs to do this, too.
- The player who has **more** dots on their card can colour their first lily pad.
- Keep turning over cards. The player with **more** dots time colours a lily pad.
- The first player to reach the fly wins.

26 **6** Dot Patterns (188 pp. 42-45)
Number and place value Sublime small collections of objects (ACMNA003)

Australian Curriculum: Mathematics content strand, content descriptions and code for the unit.

6 STUDENT ASSESSMENT DATE: _____

★ Help Tommy Turtle get to the letterbox. Colour in the stepping stones that show 5.

★ Draw a friend for Tommy Turtle who has _____

One Student Assessment page per unit.

Three pages of activities for each unit (one Student Book page per Lesson Plan).

Dot Plates DATE: _____

★ Show 5 in different ways. Use a paper plate and some counters. Draw some of the ways you found.

★ Play a game.

You will need:

- a dice
- a partner
- paper

How to play:

- In turn, roll a dice.
- Each time you roll 5, cover one of the paper plates above with a piece of paper.
- The first player to cover all their plates wins.

24 **6** Dot Patterns (188 pp. 42-45)
Number and place value Sublime small collections of objects (ACMNA003)

Glub! Glub! DATE: _____

★ Draw dots on each frog to match the number of bugs it will eat. One has been done.

★ On the lily pad, write the matching number word. One has been done.

★ Draw a line matching each frog to a lily pad and a bug. One has been done.

25 **6** Dot Patterns (188 pp. 42-45)
Number and place value Sublime small collections of objects (ACMNA003)

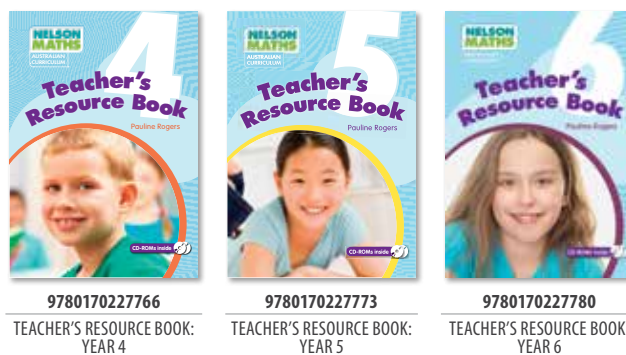
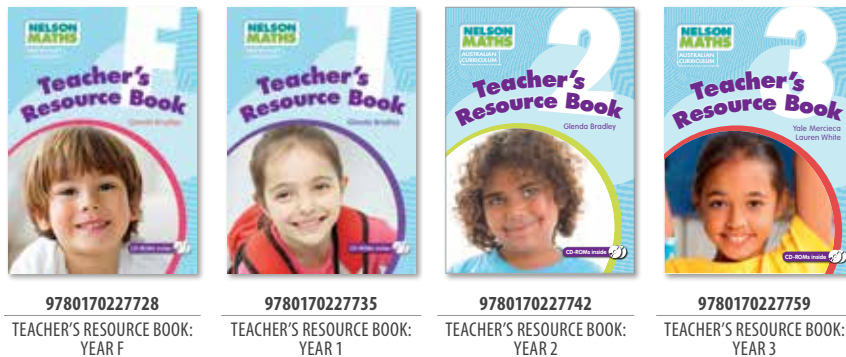
Teacher's Resource Books

Each Teacher's Resource Book provides between 30 and 35 units covering the *Australian Curriculum: Mathematics* content strands of *Number and Algebra*, *Measurement and Geometry*, and *Statistics and Probability*. Designed to aid teachers' planning and implementation of the curriculum each step of the way, it features:

- Assessment Task Cards (with linking Targeted Assessment Task Cards)
- Tests A and B
- Assessment and Planning BLMs
- a CD-ROM containing all NTOs
- a CD-ROM containing all BLMs, Tests, Answers (Year 3 and up) and Assessment Task Cards as printable PDFs.

At the beginning of each unit the following are listed:

- the link to the *Australian Curriculum: Mathematics* content strand, content descriptions and code for that unit
- Maths Language: the vocabulary the teacher models and uses in his or her teaching, and the language students are encouraged to use.



ML (Maths Language)

The vocabulary the teacher models and uses in their teaching, and the language the students are encouraged to use.



TUNING IN

Designed to orient students to the focus of the lesson and revise skills that they will need to use in the lesson.

WHOLE-CLASS INTRODUCTION

The teacher introduces the main focus of the lesson to the whole class.

INDEPENDENT TASKS

Students work in small groups, pairs or individually to further strengthen their understanding and skills.

- Links to the *Australian Curriculum* content strand, content descriptions and code for each unit.

Three lesson plans in each unit.

REFLECTION

The time for the class to regroup, and reflect upon and celebrate their learning.

Unit 4 Numbers up to 1000

Australian Curriculum: *Number and Algebra*
 Number and place value: Group, partition and rearrange collections up to 1000 in hundreds, tens and ones to facilitate more efficient counting (ACMNA328)

ML 3-digit, hundreds, MAB, number cards, ones, spike abacus

TUNING IN
 READING NUMBERS
 You will need: NTO 2.7 'Numbers'
 Present NTO 2.7 'Numbers', set to show three cards with numbers from 0 to 9. Place the cards close together and have students read the 3-digit number. Rearrange the cards and have students read the new number formed. Continue using NTO 2.7 'Numbers' to have students practice reading other 3-digit numbers.

WHOLE-CLASS INTRODUCTION
 USING NUMBER CARDS
 You will need: NTO 2.14 'Number Cards'
 Present NTO 2.14 'Number Cards', selecting 'random number' and having students read the number. Then ask students to say the number aloud slowly. Ask, 'How many hundreds did you say?' Invite a student to select the number card for that many hundreds. Have students say the number again and invite a student to select the tens card. Have them say the number again and ask a student to select the ones card. Continue generating numbers, having students say the number and show it using the number cards.

INDEPENDENT TASKS
 Note: Choose from Tasks 1, 2 or 3.
 You will need: BLM 7 'Arrow Cards 1', BLM 8 'Arrow Cards 2', BLM 9 'Number Cards 2', NTO 2.14 'Number Cards'
TASK 1: MATCH THE NUMBER
 Have students work with a partner and give them a set of arrow cards made from BLM 7 'Arrow Cards 1' and BLM 8 'Arrow Cards 2' and a set of cards made from BLM 9 'Number Cards 2'. Student A selects a number card and reads the number aloud while Student B forms that number using arrow cards. Student B checks by looking at the number card. If they are correct they keep the number card. Students then reverse roles and they continue to play. The winner is the student with the most cards.
TASK 2: INTERACTIVE TASK
 Have students explore NTO 2.14 'Number Cards', randomly generating a number and using the number cards to show the number.
TASK 3: STUDENT BOOK p. 16 'Arrow Cards'

TEACHING GROUP
 You will need: BLM 7 'Arrow Cards 1', BLM 8 'Arrow Cards 2', NTO 2.14 'Number Cards'
 100 MORE
 For students who require support, begin by having them make 2-digit numbers. Have pairs of students work with cards made from BLM 7 'Arrow Cards 1' and BLM 8 'Arrow Cards 2'. Students sort their cards into columns of ones, tens and hundreds. Show students a 2-digit number and have them say it aloud. Students reveal the number and find the two cards to show the number. Continue having students make 2-digit numbers. When they are ready, have them show 28 and then ask them to place the 100 card underneath and read the number. Continue having students make 2-digit numbers and then placing the 100 card underneath and reading the number about.

Nelson Maths: Australian Curriculum 34 Teacher's Resource Book Year 2

USING THE THOUSANDS CARDS
 For students who require a challenge, have them work with higher numbers. Present NTO 2.14 'Number Cards' and select the thousands card, a tens card and a ones card and have students read the number. Select a thousands card, a hundreds card, a tens card and a ones card and have students read the number. Double-click on the hundreds card to remove it and have students read the number. Double-click on the tens card and have students read the number. Repeat a few more times. Ask students to randomly generate a number and have them make it.

REFLECTION
 Select from the following to suit your class and their learning outcomes.
 Ask, 'When you make a number, what are you thinking?'
 Tell students that you want them to show the number 942 and have them explain how they would do it. Ask, 'How do you know you are correct?'
 Present NTO 2.14 'Number Cards' and randomly generate a number, but ask students to show a number that is 100 more or less.

TUNING IN
 DOES ANYONE HAVE...?
 You will need: BLM 9 'Number Cards 2'
 Make number cards from an enlarged copy of BLM 9 'Number Cards 2'. Give a number card to each student and ask, 'Does anyone have a number with 6 tens?' Have those students stand and show their cards. Ask, 'Does anyone have a card with more than 3 hundreds?' Continue asking questions about place-value components and note any students who may need support in the teaching group.

WHOLE-CLASS INTRODUCTION
 SPIKE ABACUS
 You will need: NTO 2.15 'Spike Abacus', small whiteboards and markers, BLM 7 'Number Cards 2'
 Present NTO 2.15 'Spike Abacus' and explain to students that they can use a spike abacus to model numbers. Place one bead on the hundreds spike, two beads on the tens spike and three beads on the ones spike. Ask, 'What number has 1 hundred, 2 tens and 3 ones?' Invite a student to write the number on the board. Continue making 3-digit numbers and ask students to write down the number on small whiteboards. Next, select a number card made from an enlarged copy of BLM 9 'Number Cards 2' and ask, 'Can anyone show this number on the spike abacus?' Invite a student to show the number, check the number of beads for each place-value component and check it against the number card. Continue, inviting students to select a number card and show the number on the spike abacus.

INDEPENDENT TASKS
 Note: Choose from Tasks 1, 2 or 3.
 You will need: 3 spike abacuses and beads, BLM 7 'Arrow Cards 1', BLM 8 'Arrow Cards 2', BLM 9 'Number Cards 2', NTO 2.15 'Spike Abacus', Student Book p. 17 'Spike Abacus'
TASK 1: SPIKE ABACUS AND ARROW CARDS
 Have students work with a partner. Student A shows a number on the spike abacus and Student B shows that number using arrow cards made from BLM 7 'Arrow Cards 1' and BLM 8 'Arrow Cards 2'. Students then swap roles and continue.
TASK 2: INTERACTIVE TASK
 Give students a set of number cards made from BLM 9 'Number Cards 2'. Have them use NTO 2.15 'Spike Abacus' to model the number and then check that they are correct by selecting the 'show number' button.
TASK 3: STUDENT BOOK p. 17 'Spike Abacus'

TEACHING GROUP
 You will need: small whiteboards and markers, Blu-Tack or playdough, wooden skewers, beads (which can be made from playdough), NTO 2.15 'Spike Abacus'

Unit 4 Numbers up to 1000 35

- **TEACHING GROUP**
 The teacher works with a small number of 'like-needs' students to teach level-appropriate concepts.

AN CURRICULUM

Home Tasks
 Select from the possible Home Tasks

- Have students look for things around the home that show numbers with two decimal places, e.g. items from the pantry, books, newspapers, measuring equipment. Have them list the item and the decimal.
- Have students look at a newspaper (hard copy or online) for examples of decimal numbers, e.g. results of sporting events, news reports or advertisements. Have students cut out/print/save and bring to class to share. These items could be used in some of the activities in Lesson 3.

Assessment

- Have students complete **Student Assessment p. 105**.
- Review with students **Assessment Task Card 4.10**.

During the three lessons:

- Collect created items e.g. the Excel spreadsheets from Lesson Plan 1, Independent Tasks, Task 2, and number lines from Lesson Plan 3, Independent Tasks, Task 1, as work samples for student portfolios.
- Make note of students who completed the scaffolding tasks or the more challenging activities of the Teaching Groups.
- Review Student Book pages and make notes of areas of difficulty.

Recommendations for Future Learning

Specific to Student Assessment p. 105, if the student is experiencing difficulty:

Q1-1 Work with whole numbers, then numbers with only one decimal place.

Q2-3 Use BLM 33 'Decimal Numbers and Words 1' and BLM 34 'Decimal Numbers and Words 2' to revisit matching the numeric form of a number to its word form.

Q4-8 Practice drawing number lines with whole numbers, before moving to numbers with one decimal place. Give the student numbers like 3.1, 5.6 and 7.2.

If the student has not achieved the recommended skills for this unit:

- See **Assessment Task Card 4.10** for specific recommendations.
- Have the student work with whole numbers in any of the listed activities (at their level) before moving to decimal numbers. Scaffold them with the use of a place-value chart to reinforce the values and positioning of the decimal parts.
- Review Nelson Maths Australian Curriculum Year 3 Unit 13.

If the student has achieved the recommended skills and these skills are firmly established, consider:

- Moving forward to Nelson Maths Australian Curriculum Year 5 Unit 18.
- Having the student complete Nelson Maths Mental Strategies Big Book 4, pp. 8-9, to reinforce mental strategies with decimal numbers.
- Extending the student in any of the listed activities or tasks by using decimal numbers to three decimal places.

End of unit activities:

- Home Tasks (Years 3–6)
- Assessment
- Recommendations for Future Learning
- Extension Tasks.

Nelson Teaching Objects and Learning Objects

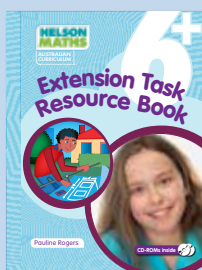
The desired teaching combination of both print and digital resources to optimise student learning is provided with **Nelson Maths: Australian Curriculum**. Information and Communication Technology (ICT) is deliberately integrated into the program, with Nelson Teaching Objects (NTOs) – fully updated and some newly created – provided for use on interactive whiteboards and individual computers.

The NTOs:

- illustrate mathematical concepts explicitly
- engage students actively in their own learning
- scaffold student learning
- require students to use their mathematical understandings in an engaging and meaningful context.

Also referred to are the pedagogically sound, interactive Learning Objects (LOs) created by Education Services Australia. These are incorporated in Independent Tasks in the unit Lesson Plans.

6+ EXTENSION TASK RESOURCE BOOK



9780170233798

6+ EXTENSION TASK RESOURCE BOOK

Recognising the importance of supporting advanced students, a new addition to this series is the Year 6+ Extension Task Resource Book.

It features activities to extend students who are excelling in mathematics and who would benefit from more challenging learning tasks.

The author has designed these tasks so that they both broaden students' understanding, reasoning and problem-solving skills within the Year 6 curriculum, as well as provide them with 'bridging' activities into the Year 7 curriculum.



Nelson Maths NTO
4.8 Thermometer

► Suitable for:

			<ul style="list-style-type: none"> Windows® XP, Windows® 7 and above Mac OS X 10.6.8 and below, Mac OS X 10.7.0 and above
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HD Requires Adobe® Reader® & Adobe® AIR® to view files†

†Visit www.adobe.com/downloads

Assessment and Planning

Teachers recognise the importance of assessment in the teaching and learning process, and the role it plays in future planning for students' learning. With **Nelson Maths: Australian Curriculum** teachers are given the opportunity to choose the assessment methods best suited to individual students. The program provides specific recommendations for future learning experiences, which are linked to the assessment tasks.

Assessment is ongoing but it can be specifically targeted using **Nelson Maths: Australian Curriculum**:

- during the school year (Test A and Test B)
- at the end of a unit (Student Assessment page and Assessment Task Card)
- on a daily basis during mathematics sessions; that is, as part of the Whole-Class Introduction, Teaching Group, Independent Maths, while roving, and during 'Reflection'.

Recognising not only the importance of assessment, but the consequences of it, the **Nelson Maths: Australian Curriculum** program provides guidance for students who need additional support as well as those who require more challenging tasks.

The **Nelson Maths: Australian Curriculum** program includes the following assessment resources:

Test A and Test B

Pen-and-paper tests written to be used halfway through the year and at the end of the year.

Test B can also be used at the beginning of the next school year. For example, Year 2 Test B can be used at the beginning of Year 3.

Student Assessment page

This page links to Recommendations for Future Learning in the Teacher's Resource Book to guide teachers with strategic or targeted responses to the specific learning needs of individual students.

Assessment Task Cards

An alternative to pen-and-paper tests, these cards have been designed to be used with individuals, in small groups, or as a whole-class assessment task.

STUDENT ASSESSMENT PAGE
Links to Recommendations for Future Learning in the Teacher's Resource Book.

DATE: _____

1 STUDENT ASSESSMENT

1 Look at the numbers. Draw a circle around the **odd** numbers.
16, 57, 99, 123, 312, 450, 671, 3025, 7138, 9734
How do you know the numbers you circled are odd?

2 Write the following numbers in **word form**.

a 2763 _____

b 919 _____

c 5044 _____

d 3900 _____

3 Write the following numbers in **numeric form**.

a Three thousand, four hundred and fifty-two _____

b Eight thousand and forty-seven _____

c Two hundred and ninety-six _____

d Seven thousand and thirteen _____

4 Use these four digits to make the following numbers.
1, 8, 7, 6.

a an even number more than 8500 _____

Year 2: Assessment Task Card

2.4

1 NUMBERS UP TO 1000
Resources: BLM xx 'Arrow Cards 1', a spike abacus, NTO 2.xx 'Dice'

1 Say the following numbers and have the child show using arrow cards:
472, 967, 214, 504, 370

2 Show the following numbers on a spike abacus and ask the child what number is shown:
274, 856, 247, 201, 960

3 Have the child show the following numbers on a spike abacus:
324, 178, 670, 302

4 Using NTO 2.xx 'Dice', show three dice. Ask the child what is the smallest 3-digit number they can make from those numbers. Ask the child what is the largest 3-digit number they can make from those numbers.

NUMBER AND PLACE VALUE
Group, partition and rearrange collections up to 1000 in hundreds, tens and ones to facilitate more efficient counting (ACMNA209)

Year 2: Assessment Task Card

2.4

1 NUMBERS UP TO 1000 TARGETED ASSESSMENT

Q1 Provide opportunities for the child to show 2-digit numbers using arrow cards or NTO 2.xx 'Number Cards' before moving to 3-digit numbers.

Q2-3 Have the child model numbers using MAB blocks, and then have them show the same numbers modelled with arrow cards. Have the child show the same numbers on a spike abacus.

Q3-4 Provide opportunities for the child to play games, e.g. 'Beat It!', 'Number Stairs' or 'Ladder Games', whereby they use their place-value understandings and the number of cards or dice used can match the child's level of place-value understanding.

NUMBER AND PLACE VALUE
Group, partition and rearrange collections up to 1000 in hundreds, tens and ones to facilitate more efficient counting (ACMNA209)

ASSESSMENT TASK CARDS
Designed to be used with individuals, in small groups, or as a whole-class assessment task.


TARGETED ASSESSMENT
Recommendations for future learning based on the Assessment Task Card.

Test A: Student Sheet


8 Write the number sequence that begins at 40 and counts forward by 4 for the next 5 terms.

9 What is the pattern in the following number sequence?
90, 81, 72, 63, 54, ...

10 If $7 \times 5 = 35$ then $35 \div 7 =$ _____

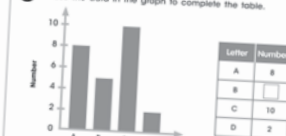
11 Write a related multiplication equation for:
 _____

12 True or false?
 $4 \times 7 = 7 \times 4$ _____


13 Multiply the numbers shown on the dice.
 _____
 Multiply the answer by 10. _____

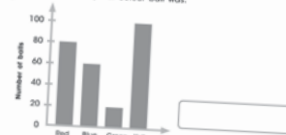
Test B: Student Sheet

22 Data representation and interpretation
Use the data in the graph to complete the table.



Letter	Number
A	8
B	4
C	10
D	2

23 The number of cloudy days in July was:
 _____

24 The least popular colour ball was:
 _____

AN CURRICULUM

Building Mental Strategies Big Books and Skill Books

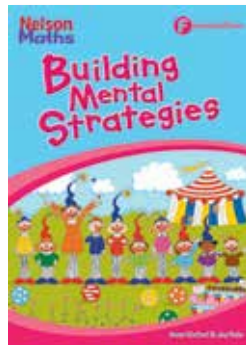
The **Nelson Maths: Building Mental Strategies** Big Books and Skill Books are beneficial resources teachers can use to support **Nelson Maths: Australian Curriculum** as they implement the program. Referenced in the series, they are relevant and applicable for the *Australian Curriculum: Mathematics*, and are valuable tools in supporting students in the development of sound mental strategies that will work for them in a variety of contexts.

Big Books

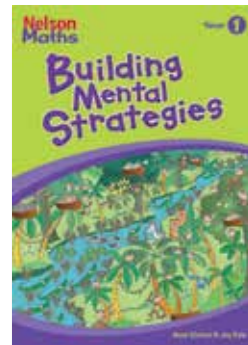
Designed for modelled, shared and guided sessions, each book is a highly visual resource for teaching mathematical mental strategies. Teachers and students will enjoy the large format while exploring the mental strategies found in counting, place value, addition and subtraction.

Each Big Book features:

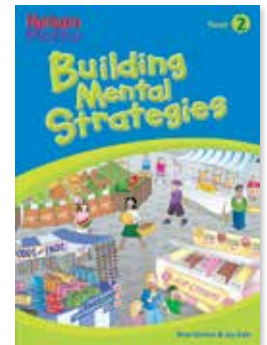
- step-by-step teaching notes with focus questions, conveniently located in the inside back covers
- teaching focus notes, at the base of each spread
- colourful and stimulating pictures
- well set out and easy-to-follow diagrams.



9780170251518
BUILDING MENTAL STRATEGIES F



9780170251525
BUILDING MENTAL STRATEGIES 1



9780170251532
BUILDING MENTAL STRATEGIES 2

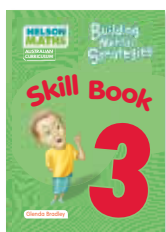


Write-on/
wipe-off
pages.

Big Books are
laminated
throughout for
extra durability.

Skill Books

Building Mental Strategies Skill Books



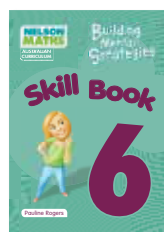
9780170370561
YEAR 3



9780170370578
YEAR 4



9780170370585
YEAR 5



9780170370592
YEAR 6

Nelson Maths: Building Mental Strategies Skill Books are four write-in workbooks for students in middle and upper primary. The Skill Books support the learning and development of mental strategies in the areas of counting, place value, addition, subtraction, multiplication and division.



SERIES OVERVIEW

LEVEL	F	1	2	3	4	5	6	6+
STUDENT BOOKS ↓	 9780170227650	 9780170227667	 9780170227674	 9780170227681	 9780170227698	 9780170227704	 9780170227711	
TEACHER'S RESOURCE BOOK WITH NELSON TEACHING OBJECTS CD-ROM & REPRODUCIBLE RESOURCES CD-ROM	 9780170227728 	 9780170227735 	 9780170227742 	 9780170227759 	 9780170227766 	 9780170227773 	 9780170227780 	 9780170233798 
BUILDING MENTAL STRATEGIES BIG BOOKS	 9780170251518	 9780170251525	 9780170251532					
BUILDING MENTAL STRATEGIES SKILL BOOKS				 9780170370561	 9780170370578	 9780170370585	 9780170370592	
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