NELSON MATHS
AUSTRALIAN CURRICULUM NSW

K–6+

NELSON Maths NSW

NELSON CENGAGE Learning
www.nelsonprimary.com.au

NELSON MATHS AUSTRALIAN CURRICULUM NSW

Written for the NSW Mathemat AUSTRALIAN

Nelson Maths: Australian Curriculum NSW K–6+

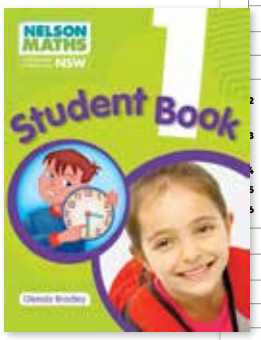
Nelson Maths: Australian Curriculum NSW supports the implementation of the NSW *Mathematics K–6 Syllabus* for the Australian Curriculum.

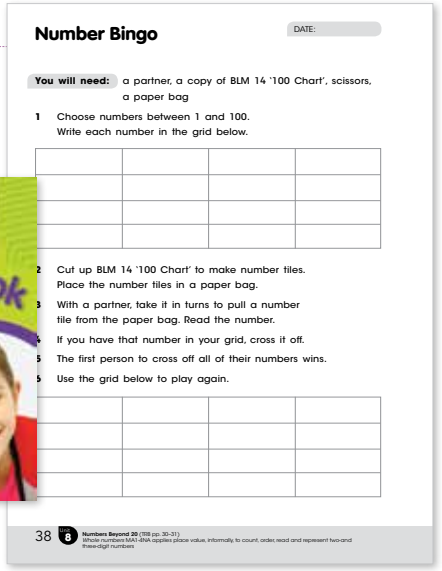
The ***Nelson Maths: Australian Curriculum NSW*** program provides between 30 and 33 units of work for each year level, with each unit of work divided into three Lesson Plans. Providing flexibility, the Lesson Plans cater to students' different learning styles and diverse needs. Teachers are provided 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 and thinking
- 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 NSW Student Book 1




Number Bingo

DATE:

You will need: a partner, a copy of BLM 14 '100 Chart', scissors, a paper bag

1 Choose numbers between 1 and 100. Write each number in the grid below.

2 Cut up BLM 14 '100 Chart' to make number tiles. Place the number tiles in a paper bag.

3 With a partner, take it in turns to pull a number tile from the paper bag. Read the number.

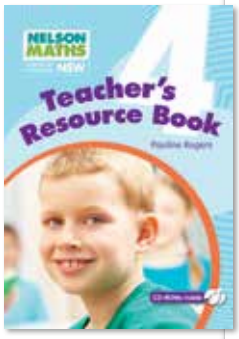
4 If you have that number in your grid, cross it off.

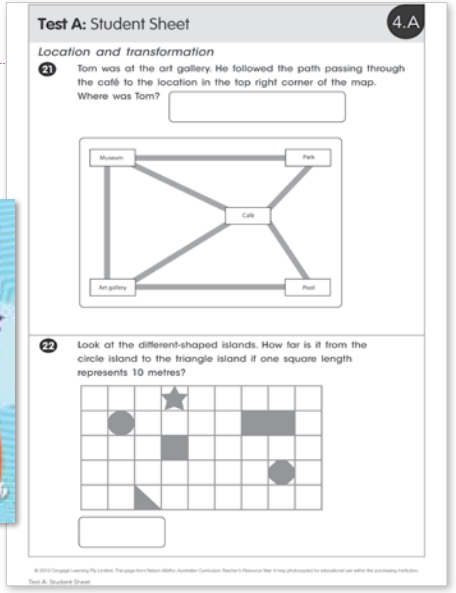
5 The first person to cross off all of their numbers wins.

6 Use the grid below to play again.

38 8 Numbers Beyond 20 (TIB pp. 30–31)
Whole numbers MA1-8NA applies place value, informally, to count, order, read and represent two-and three-digit numbers

Nelson Maths: Australian Curriculum NSW 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?

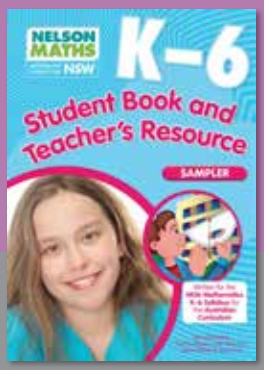
Museum Park Café Art gallery Pool

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?

Test A: Student Sheet

VIEW SAMPLER eBOOK!

STUDENT BOOK AND TEACHER'S RESOURCE SAMPLER BOOK



The ***Nelson Maths: Australian Curriculum NSW*** 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 Kindergarten 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/nelsonmathsnsw* to view the Sampler eBook.

While stocks last

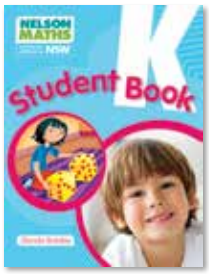
tics K–6 Syllabus for the CURRICULUM

Student Books

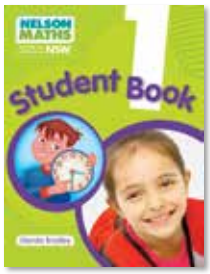
At the core of this series are the ***Nelson Maths: Australian Curriculum NSW*** Student Books. Featuring engaging tasks that students can complete independently, they will ensure core mathematical skills are developed while learning and understanding is achieved.

Each Student Book features:

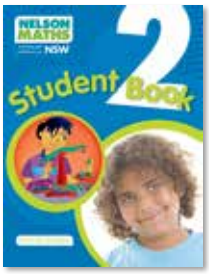
- three pages of activities for each unit (one Student Book page per Lesson Plan)
- one Student Assessment page per unit
- the linking NSW *Mathematics K–6 Syllabus* for the Australian Curriculum strand, outcomes and code for that unit
- a Glossary of mathematical terms.



9780170352864
STUDENT BOOK: YEAR K



9780170352871
STUDENT BOOK: YEAR 1



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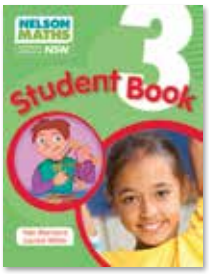
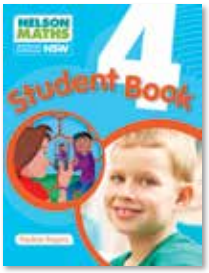
STUDENT BOOK: YEAR 2



9780170352895
STUDENT BOOK: YEAR 3



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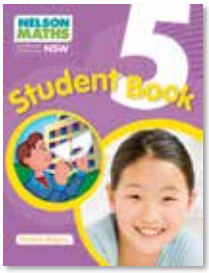
STUDENT BOOK: YEAR 4



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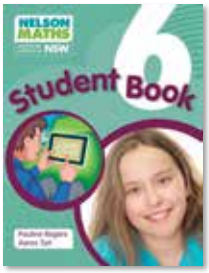
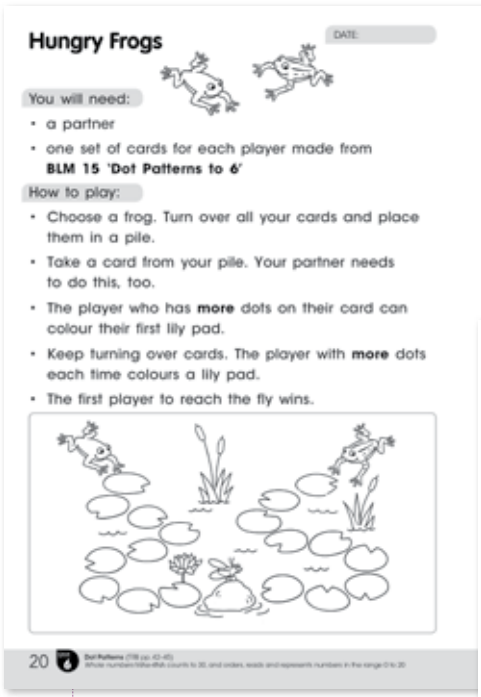
STUDENT BOOK: YEAR 5



9780170352925
STUDENT BOOK: YEAR 6



Hungry Frogs

DATE:

You will need:

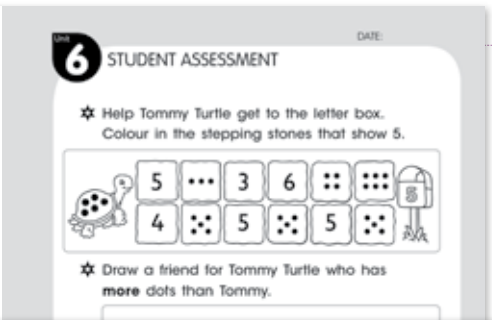
- a partner
- one set of cards for each player made from **BLM 15 'Dot Patterns to 6'**

How to play:

- Choose a frog. Turn over all your cards 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 each time colours a lily pad.
- The first player to reach the fly wins.

20

Content strand, content descriptions and code for the unit.



Unit 6 STUDENT ASSESSMENT

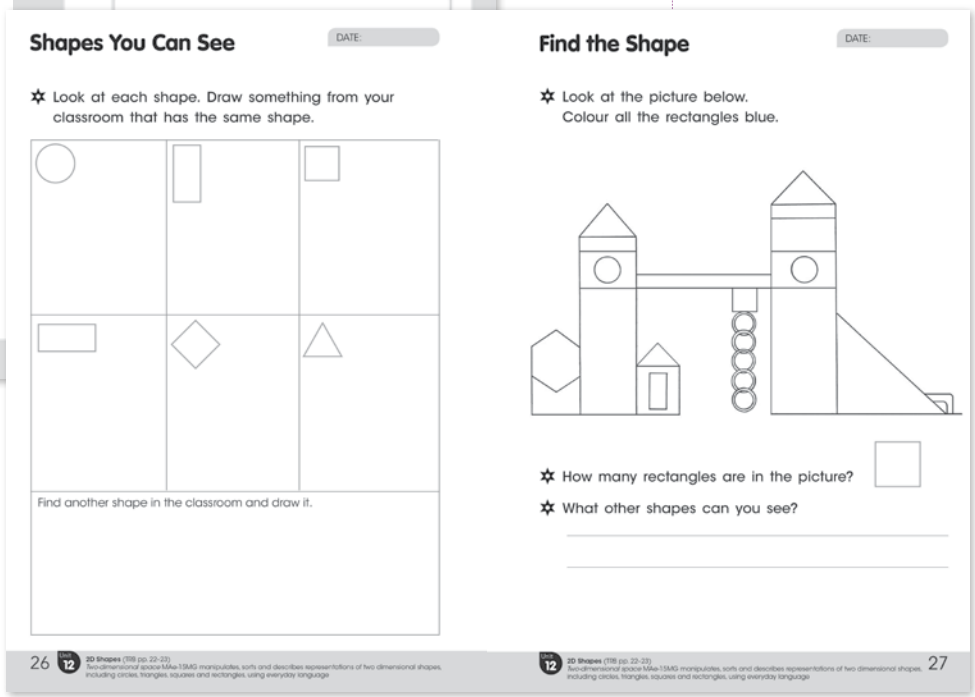
DATE:

Help Tommy Turtle get to the letter box. Colour in the stepping stones that show 5.

5 3 6 8
4 5 5

Draw a friend for Tommy Turtle who has **more** dots than Tommy.

One Student Assessment page per unit.



Shapes You Can See

DATE:

Look at each shape. Draw something from your classroom that has the same shape.

Find another shape in the classroom and draw it.

26

Find the Shape

DATE:

Look at the picture below. Colour all the rectangles blue.

How many rectangles are in the picture?

What other shapes can you see?

27

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

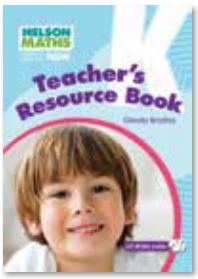
Teacher's Resource Books

Each Teacher's Resource Book provides between 30 and 33 units covering the NSW *Mathematics K–6 Syllabus* for the Australian Curriculum 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:

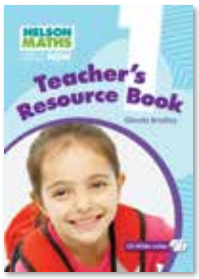
- Assessment Task Cards (with linking Targeted Assessment Task Cards)
- Tests A and B
- Assessment and Planning BLMs
- a CD-ROM containing all NTOs
- a CD-ROM containing all BLMs, Tests, Answers (Year 3 and up) and Assessment Task Cards as printable PDFs.

At the beginning of each unit the following are listed:

- the link to the NSW *Mathematics K–6 Syllabus* for the Australian Curriculum sub–strand, outcomes 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.



9780170352949
TEACHER'S RESOURCE BOOK: YEAR K



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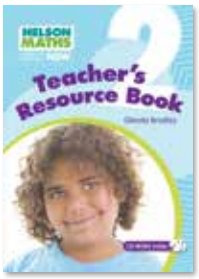
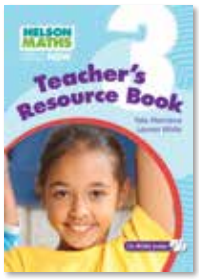
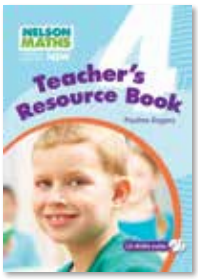
TEACHER'S RESOURCE BOOK: YEAR 1



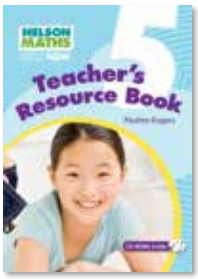
9780170352963
TEACHER'S RESOURCE BOOK: YEAR 2



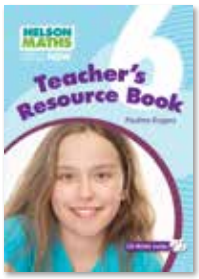
9780170352970
TEACHER'S RESOURCE BOOK: YEAR 3



9780170352987
TEACHER'S RESOURCE BOOK: YEAR 4



9780170352994
TEACHER'S RESOURCE BOOK: YEAR 5



9780170353007
TEACHER'S RESOURCE BOOK: YEAR 6

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.

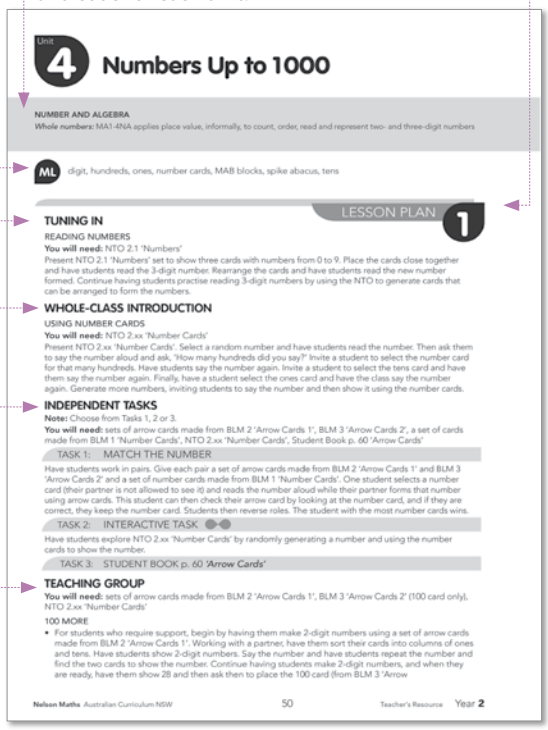
WHOLE-CLASS INTRODUCTION
The teacher introduces the main focus of the lesson to the whole class.

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

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

Links to the NSW *Mathematics K–6 Syllabus* for the Australian Curriculum sub–strand, outcomes and code for each unit.

Three lesson plans in each unit.


Unit 4 Numbers Up to 1000

NUMBER AND ALGEBRA
Whole numbers: MA1-4NA applies place value, informally, to count, order, read and represent two- and three-digit numbers

ML digit, hundreds, ones, number cards, MAB blocks, spike abacus, tens

LESSON PLAN 1

TUNING IN
READING NUMBERS
You will need: NTO 2.1 'Numbers'
Present NTO 2.1 '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 having students practise reading 3-digit numbers by using the NTO to generate cards that can be arranged to form the numbers.

WHOLE-CLASS INTRODUCTION
USING NUMBER CARDS
You will need: NTO 2.xx 'Number Cards'
Present NTO 2.xx 'Number Cards'. Select a random number and have students read the number. Then ask them to say the number aloud and 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. Invite a student to select the tens card and have them say the number again. Finally, have a student select the ones card and have the class say the number again. Generate more numbers, inviting students to say the number and then show it using the number cards.

INDEPENDENT TASKS
Note: Choose from Tasks 1, 2 or 3.
You will need: sets of arrow cards made from BLM 2 'Arrow Cards 1', BLM 3 'Arrow Cards 2', a set of cards made from BLM 1 'Number Cards', NTO 2.xx 'Number Cards', Student Book p. 60 'Arrow Cards'

TASK 1: MATCH THE NUMBER
Have students work in pairs. Give each pair a set of arrow cards made from BLM 2 'Arrow Cards 1' and BLM 3 'Arrow Cards 2' and a set of number cards made from BLM 1 'Number Cards'. One student selects a number card (their partner is not allowed to see it) and reads the number aloud while their partner forms that number using arrow cards. This student can then check their arrow card by looking at the number card, and if they are correct, they keep the number card. Students then reverse roles. The student with the most number cards wins.

TASK 2: INTERACTIVE TASK
Have students explore NTO 2.xx 'Number Cards' by randomly generating a number and using the number cards to show the number.

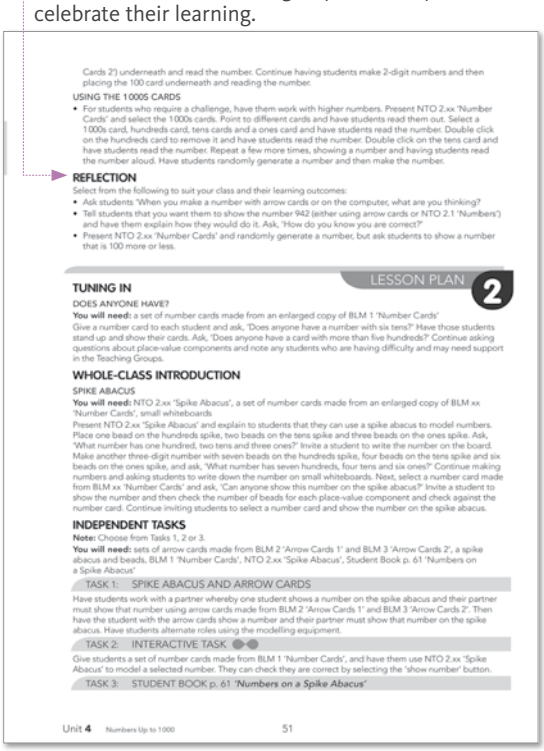
TASK 3: STUDENT BOOK p. 60 *'Arrow Cards'*

TEACHING GROUP
You will need: sets of arrow cards made from BLM 2 'Arrow Cards 1', BLM 3 'Arrow Cards 2' (100 card only), NTO 2.xx 'Number Cards'

100 MORE
- For students who require support, begin by having them make 2-digit numbers using a set of arrow cards made from BLM 2 'Arrow Cards 1'. Working with a partner, have them sort their cards into columns of ones and tens. Have students show 2-digit numbers. Say the number and have students repeat the number and find the two cards to show the number. Continue having students make 2-digit numbers, and when they are ready, have them show 28 and then ask them to place the 100 card (from BLM 3 'Arrow

Nelson Maths Australian Curriculum NSW 50 Teacher's Resource Year 2

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


Cards 2') underneath and read the number. Continue having students make 2-digit numbers and then placing the 100 card underneath and reading the number.

USING THE 10 000S CARDS
- For students who require a challenge, have them work with higher numbers. Present NTO 2.xx 'Number Cards' and select the 1 000s cards. Point to different cards and have students read them out. Select a 1 000s card, hundreds card, tens cards 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, showing a number and having students read the number aloud. Have students randomly generate a number and then make the number.

REFLECTION
Select from the following to suit your class and their learning outcomes:
- Ask students 'When you make a number with arrow cards or on the computer, what are you thinking?'
- Tell students that you want them to show the number 942 (either using arrow cards or NTO 2.1 'Numbers') and have them explain how they would do it. Ask, 'How do you know you are correct?'
- Present NTO 2.xx 'Number Cards' and randomly generate a number, but ask students to show a number that is 100 more or less.

LESSON PLAN 2

TUNING IN
DOES ANYONE HAVE?
You will need: a set of number cards made from an enlarged copy of BLM 1 'Number Cards'
Give a number card to each student and ask, 'Does anyone have a number with six tens?' Have those students stand up and show their cards. Ask, 'Does anyone have a card with more than five hundreds?' Continue asking questions about place-value components and note any students who are having difficulty and may need support in the Teaching Groups.

WHOLE-CLASS INTRODUCTION
SPIKE ABACUS
You will need: NTO 2.xx 'Spike Abacus', a set of number cards made from an enlarged copy of BLM xx 'Number Cards', small whiteboards
Present NTO 2.xx '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 one hundred, two tens and three ones?' Invite a student to write the number on the board. Make another three-digit number with seven beads on the hundreds spike, four beads on the tens spike and six beads on the ones spike, and ask, 'What number has seven hundreds, four tens and six ones?' Continue making numbers and asking students to write down the number on small whiteboards. Next, select a number card made from BLM xx 'Number Cards' and ask, 'Can anyone show this number on the spike abacus?' Invite a student to show the number and then check the number of beads for each place-value component and check 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: sets of arrow cards made from BLM 2 'Arrow Cards 1' and BLM 3 'Arrow Cards 2', a spike abacus and beads, BLM 1 'Number Cards', NTO 2.xx 'Spike Abacus', Student Book p. 61 'Numbers on a Spike Abacus'

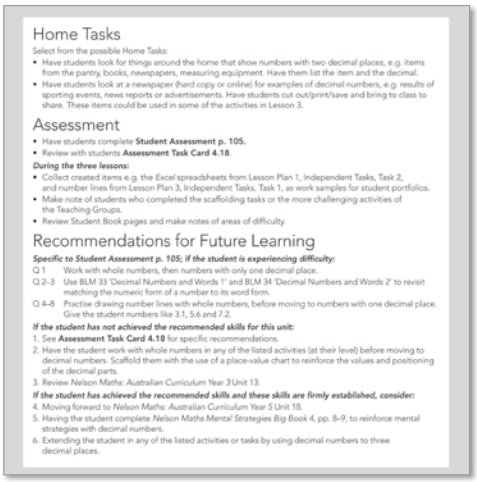
TASK 1: SPIKE ABACUS AND ARROW CARDS
Have students work with a partner whereby one student shows a number on the spike abacus and their partner must show that number using arrow cards made from BLM 2 'Arrow Cards 1' and BLM 3 'Arrow Cards 2'. Then have the student with the arrow cards show a number and their partner must show that number on the spike abacus. Have students alternate roles using the modelling equipment.

TASK 2: INTERACTIVE TASK
Give students a set of number cards made from BLM 1 'Number Cards', and have them use NTO 2.xx 'Spike Abacus' to model a selected number. They can check they are correct by selecting the 'show number' button.

TASK 3: STUDENT BOOK p. 61 *'Numbers on a Spike Abacus'*

Unit 4 Numbers Up to 1000 51

tics K–6 Syllabus for the 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 4.18.**

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:

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

Q 2–3 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.

Q 4–8 Practise 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:

1. See **Assessment Task Card 4.18** for specific recommendations.
2. 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.
3. Review *Nelson Maths: Australian Curriculum Year 3* Unit 13.

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

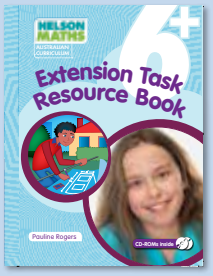
4. Moving forward to *Nelson Maths: Australian Curriculum Year 5* Unit 18.
5. Having the student complete *Nelson Maths Mental Strategies Big Book 4*, pp. 8–9, to reinforce mental strategies with decimal numbers.
6. Extending the student in any of the listed activities or tasks by using decimal numbers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

End of unit activities:

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

6+ EXTENSION TASK RESOURCE BOOK

Supports the Australian Curriculum: Mathematics



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.

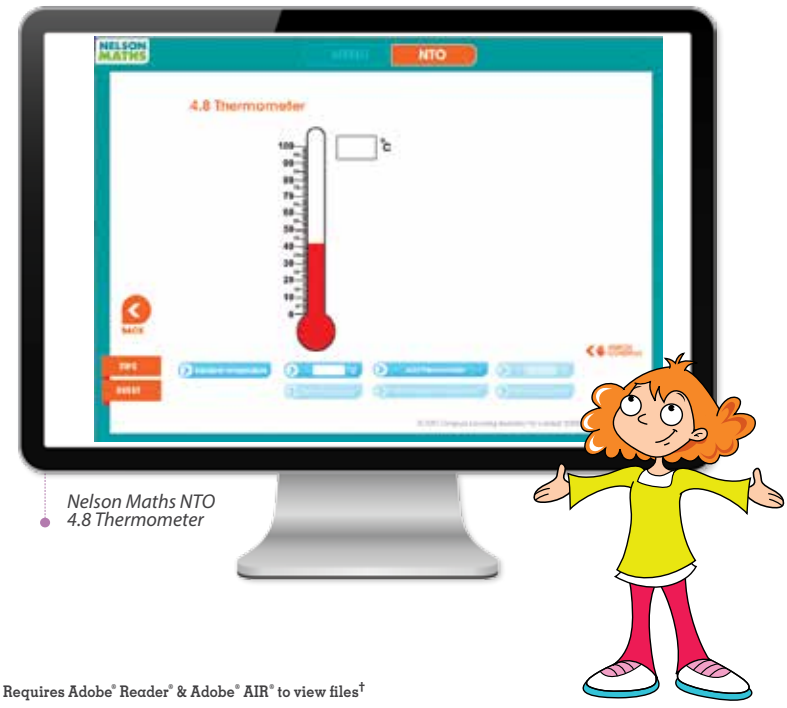
Nelson Teaching Objects and Learning Objects

The desired teaching combination of both print and digital resources to optimise student learning is provided with ***Nelson Maths: Australian Curriculum NSW***. 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.



Nelson Maths NTO 4.8 Thermometer

▶ **Suitable for:**

Data Projector	Interactive Whiteboard	Computer	• Windows® XP, Windows® 7 and above • Mac OS X 10.6.8 and below, Mac OS X 10.7.0 and above

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 NSW*** 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 NSW***:

- 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 NSW*** program provides guidance for students who need additional support as well as those who require more challenging tasks.

The ***Nelson Maths: Australian Curriculum NSW*** 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.

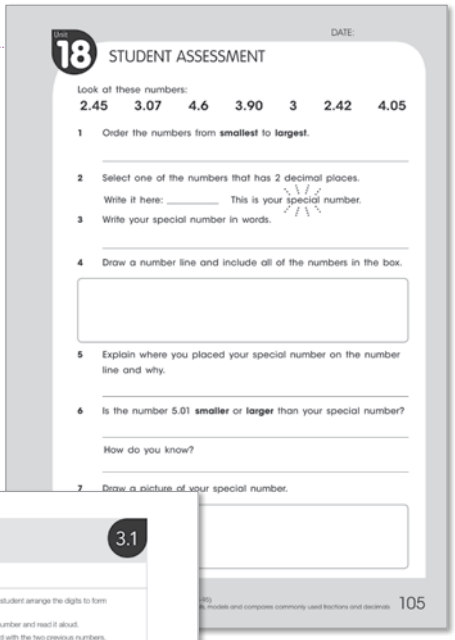
Student Assessment page

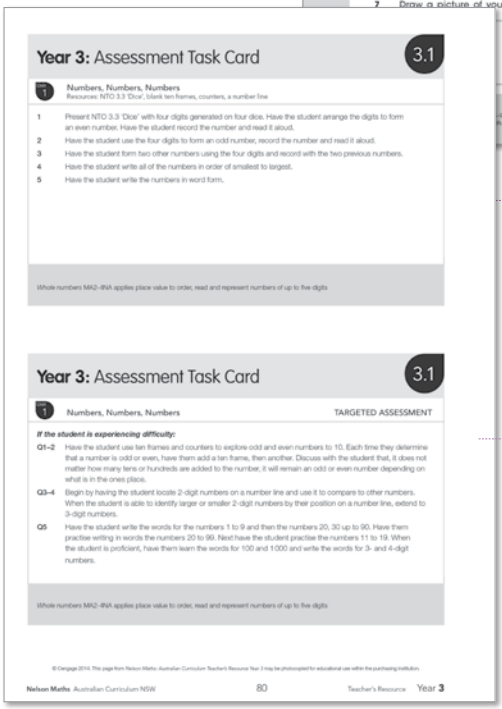
This page links to Recommendations for Future Learning in the Teacher's Resource Book to guide teachers with strategic or targeted responses to the specific learning needs of individual students.

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.

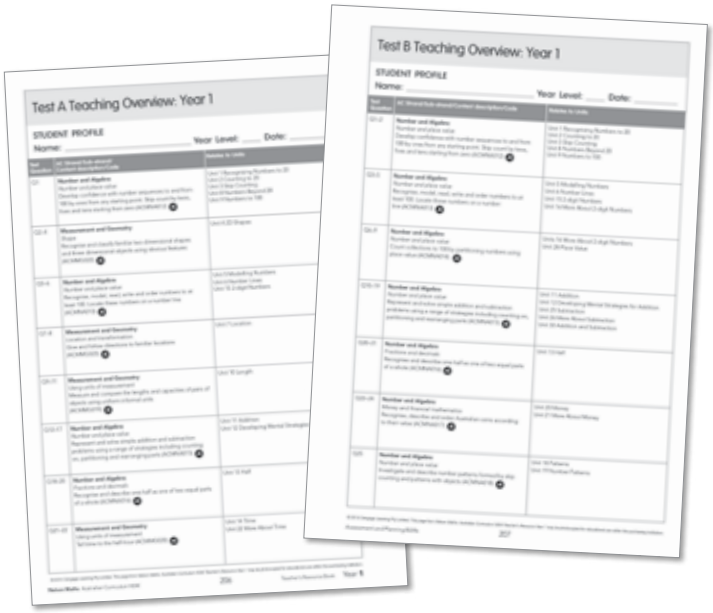
STUDENT ASSESSMENT PAGE
Links to Recommendations for Future Learning in the Teacher's Resource Book.





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

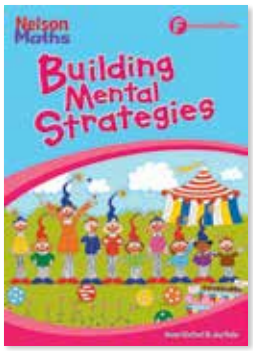
TARGETED ASSESSMENT
Recommendations for future learning based on the Assessment Task Card.



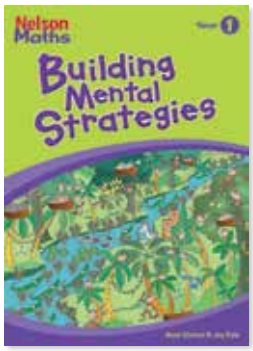
tics K–6 Syllabus for the CURRICULUM

Building Mental Strategies Big Books and Skill Books

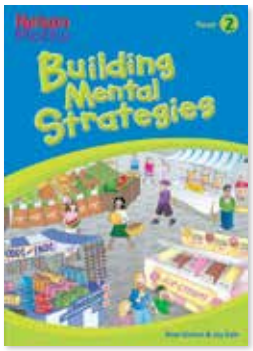
The ***Nelson Maths: Building Mental Strategies*** Big Books and Skill Books are beneficial resources teachers can use to support ***Nelson Maths: Australian Curriculum NSW*** as they implement the program. Referenced in the series, they are relevant and applicable for the NSW *Mathematics K–6 Syllabus* for the Australian Curriculum, and are valuable tools in supporting students in the development of sound mental strategies that will work for them in a variety of contexts.



9780170251518
BUILDING MENTAL STRATEGIES F



9780170251525
BUILDING MENTAL STRATEGIES 1



9780170251532
BUILDING MENTAL STRATEGIES 2

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.

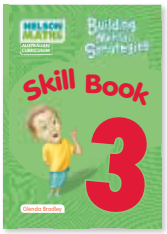
Each Big Book features:

- 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.

Write-on/ wipe-off pages.

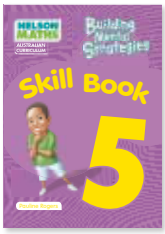
Big Books are laminated throughout for extra durability.

Building Mental Strategies Skill Books

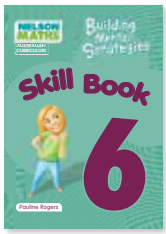


9780170370561
YEAR 3

9780170370578
YEAR 4

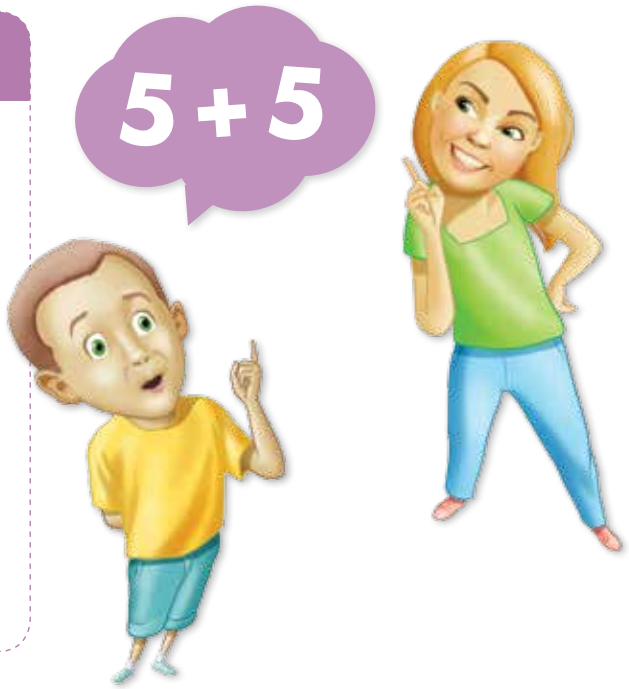


9780170370585
YEAR 5



9780170370592
YEAR 6

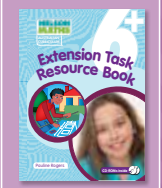
Nelson Maths: Building Mental Strategies Skill Books are four write-in workbooks for students in middle and upper primary. The Skill Books support the learning and development of mental strategies in the areas of counting, place value, addition, subtraction, multiplication and division.



NELSON MATHS
AUSTRALIAN CURRICULUM NSW

K–6+

SERIES OVERVIEW

LEVEL	K	1	2	3	4	5	6	6+
STUDENT BOOKS	9780170352864	9780170352871	9780170352888	9780170352895	9780170352901	9780170352918	9780170352925	
TEACHER'S RESOURCE BOOK WITH ↓ NELSON TEACHING OBJECTS CD & REPRODUCIBLE RESOURCES CD	9780170352949	9780170352956	9780170352963	9780170352970	9780170352987	9780170352994	9780170353007	 9780170233798
BUILDING MENTAL STRATEGIES BIG BOOKS	9780170251518	9780170251525	9780170251532					
BUILDING MENTAL STRATEGIES SKILL BOOKS				9780170370561	9780170370578	9780170370585	9780170370592	
NELSON MATHS FACTS STUDENT HANDBOOK						9780170127684		

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