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### What is Australian Signpost Maths?

Australian Signpost Maths is a mathematics activity book series for students from Foundation to Year 6. The series has been written to meet the requirements of the Australian Curriculum.

The components of the series include Student Books, Teacher's Books, Mentals Books and an interactive

Signpost with the wit







**Website** 

Website. Teachers can select an appropriate program for

every student from the rich and varied material provided.

The content has been carefully sequenced within each

year level and across the series to take into account

students' likely mathematical development.



**Student Books** 

**Teacher's Books** 

Menta

**Mentals Books** 

## Structure of Australian Signpost Maths

Australian Signpost Maths emphasises the curriculum's syllabus content as well as problem-solving strategies, language development and the use of technology.

To maximise the benefits of the program, the Student Book, Teacher's Book, Mentals Book and Website should be used together.

The sequence of units in the **Student Book** forms a suggested program for the year. The **Teacher's Book** also provides lesson plans for each page of the **Student Book** and blackline masters to assist teachers in implementing the program.

The Student Book presents lessons as a mix of content strands. However, the Contents and Contents Crossreference pages in the Student Book allow teachers to construct programs based on the specific content strands (Number and Algebra, Measurement and Geometry, and Statistics and Probability). Progress Tests and remediation records are located in the Teacher's Book and on the website. These tests are also now included in the back of this book.

The **Mentals Book** mixes examples from all content strands, reviewing the content of previous units of the Student Book.

The innovative **Website** help teachers to bring mathematics alive with technology. The website provides interactive maths tools, games and practice opportunities as well as relevant resource masters and worksheets for all year levels. These can be used for whole-class, small-group and individual learning. The website also includes **Concept Check-In**, a new diagnostic screener.

### Special Features of Australian Signpost Maths

 Traffic Light system allows students to reflect on their work and highlight any units that they are having trouble understanding. They tick the red for



units they feel they still don't understand, and green for those they feel they understand fully.

- Exercises are **well graded**. Work is reinforced in the Mentals Book.
- The Progress Tests (now also in the back of this book) allow the teacher to discover each student's strengths and weaknesses, and the cross-references direct students to the pages where that work is introduced.
- Answers are supplied in the Teacher's Book.
- The **Dictionary** at the beginning of this Student Book will help students to learn the language of mathematics.

- **ID Cards** (in the Mentals Book, Teacher's Book and Website) review the language of mathematics by asking students to identify common terms, shapes and symbols.
- Important **rules and concepts** are clearly highlighted.
- Worked examples and explanations are given throughout the Student Book where new ideas are introduced.
- The use of **colour** makes emphasis clear and is highly motivating.
- **Cartoons** give instruction and friendly advice.
- Interactive Activities are provided on the website for whole-class, small-group and individual learning.

### **Australian Signpost Icons**

Signpost icons are used throughout the book as cues to the essential nature of exercises and activities, and as a guide to ways of engaging with them. These icons often indicate alternative or more concrete approaches to dealing with concepts.



This icon highlights **important rules and concepts** occurring throughout the book. It often appears with worked examples.



Activities provide **applications and enrichment**. These activities usually involve the use of concrete materials and partner or group work.



These enjoyable activities are used to **motivate and involve** students in mathematical pursuits. They usually involve games and puzzles.



Investigations allow students to **explore and discover** maths concepts.



This icon indicates the use of computers, calculators or other **information and communications technology**.

### Australian Curriculum Proficiency Strands

The proficiency strands of the Australian Curriculum describe how content is explored or developed – that is, the 'thinking and doing' of mathematics.

#### Understanding

#### Learning the concepts

Students build a robust knowledge of adaptable and transferable mathematical concepts. They make connections between related concepts and progressively apply the familiar to develop new ideas. They develop an understanding of the relationship between the 'why' and the 'how' of mathematics.\*

Conceptual understanding of maths ideas includes the explanation of a concept using text and diagrams. This occurs throughout Australian Signpost Maths at the top of many pages and is indicated by the Concept icon.

#### Fluency

#### Using the concepts

Students develop skills in choosing appropriate procedures, carrying out procedures flexibly, accurately, efficiently and appropriately, and recalling factual knowledge and concepts readily.\*

The practice of maths skills to build fluency occurs on every page of Australian Signpost Maths.

#### **Problem Solving**

## Applying concepts and strategies to develop solutions to problems

Students develop the ability to make choices, interpret, formulate, model and investigate problem situations, and communicate solutions effectively.\*

Problem solving provides opportunities for students to use strategies and skills such as investigating and questioning, to collaborate with others and to communicate their findings to different audiences. Such activities are often indicated throughout Australian Signpost Maths by the Activity and Investigation icons.

#### Reasoning

#### **Coherent and logical thought**

Students develop an increasingly sophisticated capacity for logical thought and actions, such as analysing, proving, evaluating, explaining, inferring, justifying and generalising.\*

Students require opportunities to explain their mathematical thinking and can do so through both diagrams and written explanations. Reasoning questions are located throughout Australian Signpost Maths.

<sup>\*</sup>The Australian Curriculum: Mathematics, v1.2 - Content structure

# **Contents and Syllabus Overview**

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2	2	1A	Addition Combinations to 10									7						
3	}	1B	Subtraction to 10															
4	ł	1C	One Half															
5	5	1D	Parallel Lines															
6	5	2A	Ordinal Numbers															
7	7	2B	Position Words															
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9	)	2D	Ordering Capacities															
1(	0	3A	Counting Patterns					5										
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1!	5	4B	Addition to 20															
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30	0	8A	Subtraction to 20															
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32	2	8C	Half of a Group															
33	3	8D	Quarter of a Group															

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72	18C	Chance																
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\*Suggested placement for Progress Tests 1 to 4 (see the Teacher's Book). It is assumed that there are 10 weeks in each term.

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## Number and Algebra



1	Counting	Pages	Australian Curriculum Reference
	Counting to and from any starting point	10, 11, 18, 59	Investigate number sequences, initially those increasing and decreasing by twos, threes, fives and tens from any starting point, then moving to other sequences (ACMNA026); Group, partition and rearrange collections up to 1 000 in hundreds, tens and ones to facilitate more efficient counting (ACMNA028)
	Number sequences of twos, threes, fives and tens	10, 11, 18, 75, 79, 94, 139	Investigate number sequences, initially those increasing and decreasing by twos, threes, fives and tens from any starting point, then moving to other sequences (ACMNA026)
	Using a calculator	10, 11, 102, 103, 126, 127, 130, 138, 139	Investigate number sequences, initially those increasing and decreasing by twos, threes, fives and tens from any starting point, then moving to other sequences (ACMINA026)
	Ordinal numbers	6, 112, 113	Recognise, model, represent and order numbers to at least 1000 (ACMNA027)
2	Numeration		0
	Numbers to 1000	10, 11, 18, 34, 35, 58, 59, 74	Investigate number sequences, initially those increasing and decreasing by twos, threes, fives and tens from any starting point, then moving to other sequences (ACMNA026); Recognise, model, represent and order numbers to at least 1 000 (ACMNA027); Group, partition and rearrange collections up to 1 000 in hundreds, tens and ones to facilitate more efficient counting (ACMNA028)
3	Place value	$\mathbf{N}$	
	Grouping in tens and in hundreds	34, 35, 58, 59, 74	Recognise, model, represent and order numbers to at least 1000 (ACMNA027); Group, partition and rearrange collections up to 1000 in hundreds, tens and ones to facilitate more efficient counting (ACMNA028)
	Partitioning and regrouping numbers	58, 59, 74	Recognise, model, represent and order numbers to at least 1 000 (ACMNA027); Group, partition and rearrange collections up to 1 000 in hundreds, tens and ones to facilitate more efficient counting (ACMNA028)
4	Addition and subtraction		
	Addition problems	2, 14, 15, 19, 31, 43, 50, 51, 63, 66, 67, 70, 86, 87, 102, 114, 127, 130, 131	Explore the connection between addition and subtraction (ACMNA029); Solve simple addition and subtraction problems using a range of efficient mental and written strategies (ACMNA030); Describe patterns with numbers and identify missing elements (ACMNA035)
	Subtraction problems	3, 30, 42, 43, 44, 50, 51, 66, 103, 115, 126, 130, 131	Explore the connection between addition and subtraction (ACMNA029); Solve simple addition and subtraction problems using a range of efficient mental and written strategies (ACMNA030)

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NUMBER & ALGEBRA **Multiplication Sign 10B**)







С

f

 $5 \times 5 =$ 

a

d

 $5 \times 4 =$ 

b

**e** 4 × 4 =













- a the summer months are yellow.
- **b** the autumn months are brown.
- **c** the winter months are blue.
- **d** the spring months are green.







