

AUSTRALIAN
Signpost
MATHS

NSW



Sample Pages

STAGE 1

1

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What is Australian Signpost Maths NSW?

Australian Signpost Maths NSW is a mathematics program providing direction and support for teaching and learning. The series covers the content and skills presented in the NSW Mathematics Syllabus K–6, 2022.

A Student Book and an online Teacher Resource are provided for Kindergarten (Early Stage 1).

For Years 1 to 6 (Stages 1–3), a Student Book, an online Teacher Resource and a Mentals Book are provided for each year level. The online Teacher Resources provide a wealth of support for teachers.

The content has been carefully sequenced within each year level and across the K–6 series to take into account students' expected mathematical development. However, from the rich and varied material provided, teachers can develop individual learning programs to meet the needs of each student.

The Student Books are designed to support explicit teaching methods. Many group activities are provided in Activity, Investigation and Fun spots within the Student Books and the online Teacher Resource.

To maximise the benefits of the program, the Student Book, the online Teacher Resource and the Mentals Book should be used together.



Student Books

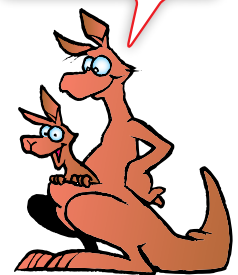


Mentals Books



Teacher Resource

This is Australian Signpost Maths New South Wales.



Structure of Australian Signpost Maths NSW

In the K–2 books, the worksheet pages covering all three strands are presented in a recommended order. Each unit of 4 pages usually begins with Number and algebra. The Contents cross-reference allows teachers to quickly find the pages where each concept has been covered.

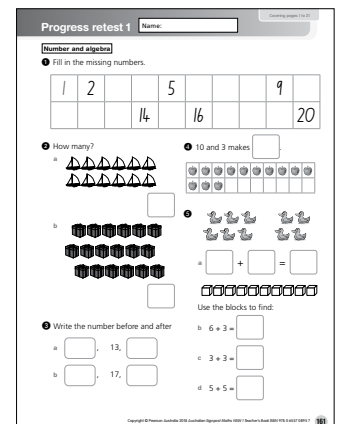
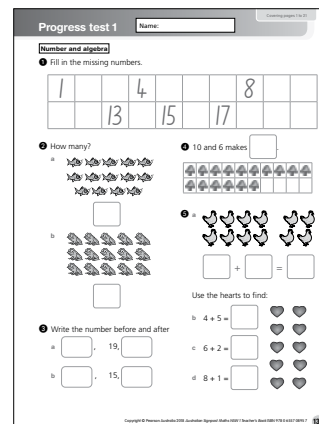
Within the program, explicit teaching, working mathematically skills, language development and identification and treatment of weaknesses are given high priority.

Identifying and addressing areas of need

Five progress tests are designed to identify each student's areas of need, and the follow-up program after each of the tests is designed to address these needs. A reference to the relevant worksheet page is given for each test question. A remediation record page is used to track the student's progress.

These testing resources can be found in the online Teacher Resource.

Parallel progress retests are provided for further testing after remediation has taken place. See pages 131 and 132 of this book for more information.



Special features of Australian Signpost Maths NSW

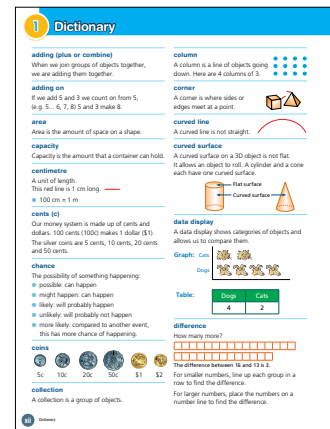
● The traffic light icons

These are found on the top right of each worksheet page in the Student Books. They allow students to assess their own progress and give feedback to the teacher.

- **Green:** I found this work easy.
- **Orange:** I found some work on the page difficult.
- **Red:** I don't understand the work on this page.

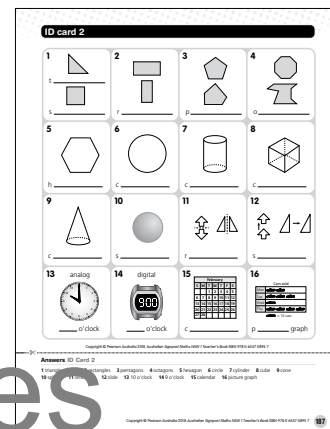
● Dictionary

Terms used in the Student Book and terms that should be understood at this level are recorded here to provide a reference for students and teachers. This is found on pages xii–xvi of this book and in the online Teacher Resource.



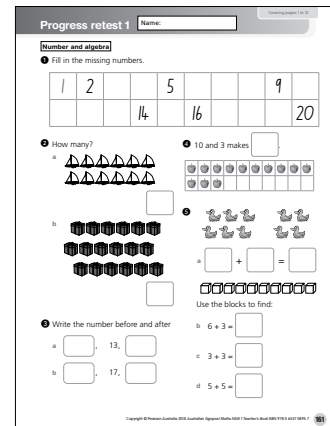
● ID cards (Years 1 to 6)

These cards review the language of Mathematics by asking students to identify common terms, shapes and symbols. They are designed to be reused and are found in the online Teacher Resource and in the front of the Mentals Books.



● Progress tests

These allow the teacher to identify each student's strengths and needs. Cross-references for each question direct teachers and students to the pages where that work is introduced. Tables are provided to record the follow-up that takes place and parallel tests are provided for retesting. These tests can be found in the online Teacher Resource.



● Year 1 Consolidation Booklet

This 30 page booklet is found in the online Teacher Resource. It is designed to reinforce work completed in class and provides practice of important skills and addition and subtraction facts. The booklet can be used when there is limited supervision or when a student finishes classwork early.

Sample Pages

● Answers

These are supplied in the online Teacher Resource.

● Blackline Masters (BLM)

References are made to the Blackline Masters in the teaching suggestions provided for each student work page.

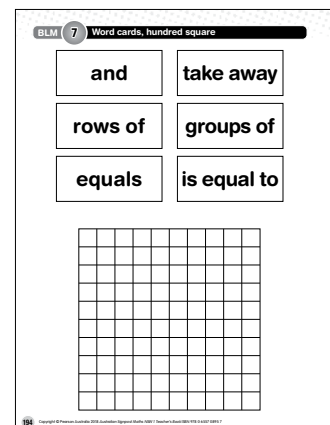
● Differentiation

Each student work page has a Teacher Resource page to support it. Cross-references direct the teacher to pages where the concept is introduced and developed. These references may be from the Student Book for the previous year, current year or the next year.

The Teacher Resource support pages provide additional learning activities for students who need remediation or extension activities. The Blackline Masters provide activities to support students of various learning abilities.

● Cartoons

Cartoons are used to motivate and instruct.



Australian Signpost Maths NSW 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.



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



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.

Structure of New South Wales Mathematics K–6

The NSW Mathematics Syllabus content is presented in three strands.

- 1 Number and algebra
- 2 Measurement and space
- 3 Statistics and probability

Sample Pages

Working mathematically pervades each of these strands.

The Mathematics Syllabus can be found at:

<https://curriculum.nsw.edu.au/learning-areas/mathematics/mathematics-k-10>

Textbook Structure

Within the Contents for Year 1, we show related pages using these categories:

Number and algebra

Numbers
Addition / subtraction
Sharing / grouping
Patterns

Measurement and space

2D shapes / 3D objects
Length / area / mass
Capacity / volume
Time / duration
Position

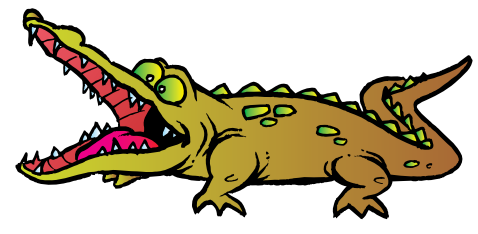
Statistics and probability

Data displays / chance

1

Contents and syllabus overview

Contents cross-reference ix
 Dictionaryxii
 Identifying and addressing areas of need . . . 131
 Blackline masters 133



KEY

Number and algebra
Measurement and space
Statistics and probability

Page	Unit	Title	Strand	Number / algebra	Measurement / space	Statistics / probability	Content area	Numbers	Addition / subtraction	Sharing / grouping	Patterns	2D shapes / 3D objects	Length / area / mass	Capacity / volume	Time / duration	Position	Data displays / chance	
1	Thinking Skills	Working mathematically pervades each of the strands.																
2	1A	Number revision		●				●										
3	1B	Number revision		●				●										
4	1C	Numbers to 20		●				●										
5	1D	Shapes and patterns			●							●						
6	2A	Adding two groups		●				●										
7	2B	Addition sentences		●				●										
8	2C	Combinations up to 10		●				●										
9	2D	Identifying objects			●							●						
10	3A	Numbers 11 to 20		●				●										
11	3B	Numbers to 20		●				●										
12	3C	Analog time													●			
13	3D	Digital and analog time													●			
14	4A	Numbers to 20		●				●										
15	4B	Friends of 10		●				●										
16	4C	Position language															●	
17	4D	Position language															●	
18	5A	Addition facts		●				●										
19	5B	Partitioning		●				●										
20	5C	Half past													●			
21	5D	Half past													●			
Progress Test 1: Administer test (Teacher Resource, pages 135–137) then address weaknesses.																		
22	6A	Groups of 10		●				●										
23	6B	Counting by tens		●				●										
24	6C	Counting by tens		●				●										
25	6D	Data displays															●	
26	7A	Subtraction		●				●										
27	7B	Subtraction		●				●										
28	7C	3D objects			●							●						
29	7D	Objects in our world			●							●						

KEY

Number and algebra
Measurement and space
Statistics and probability

Page	Unit	Title	Strand	Content area			Numbers	Addition / subtraction	Sharing / grouping	Patterns	2D shapes / 3D objects	Length / area / mass	Capacity / volume	Time / duration	Position	Data displays / chance
				Number / algebra	Measurement / space	Statistics / probability										
30	8A	Odd and even numbers														
31	8B	Addition to 20														
32	8C	Units of length														
33	8D	Informal units of length														
34	9A	Counting on														
35	9B	Counting on														
36	9C	Analog and digital time														
37	9D	Digital and analog time														
38	10A	Addition to 20														
39	10B	Larger numbers														
40	10C	Informal units of length														
41	10D	Measuring length														
42	11A	Numbers to 100														
43	11B	Subtraction to 20														
44	11C	Comparing capacities														
45	11D	Informal units of capacity														
46	12A	Addition sentences														
47	12B	Addition														

Progress Test 2: Administer test (Teacher Resource, pages 139–142) then address weaknesses.

48	12C	Addition by counting on														
49	12D	Comparing capacities														
50	13A	Numbers to 120														
51	13B	Numbers to 120														
52	13C	The hexagon														
53	13D	Picture graphs														
54	14A	Subtraction														
55	14B	Subtraction														
56	14C	Comparing the mass of objects														
57	14D	Mass														
58	15A	Counting back														
59	15B	Counting back														
60	15C	Subtraction														
61	15D	Data displays														
62	16A	Doubles														
63	16B	Doubling and near doubling														
64	16C	Months of the year														
65	16D	Months and seasons														

KEY

Number and algebra
Measurement and space
Statistics and probability

Page	Unit	Title	Strand	Number / algebra	Measurement / space	Statistics / probability	Content area	Numbers	Addition / subtraction	Sharing / grouping	Patterns	2D shapes / 3D objects	Length / area / mass	Capacity / volume	Time / duration	Position	Data displays / chance
66	17A	Patterns		●							●						
67	17B	Combinations for numbers		●					●								
68	17C	Object hunt			●							●					
69	17D	Recognising 3D objects			●							●					
70	18A	Difference		●					●								
71	18B	Difference between groups		●					●								
72	18C	The pentagon and octagon			●							●					
73	18D	Comparing areas			●								●				
74	19A	Place value		●				●									
75	19B	Numbers to 120		●				●									
76	19C	Place value		●				●									
77	19D	Finding the nearest ten		●				●									
78	20A	Subtraction by counting on		●					●								
79	20B	Number relationships		●					●								
80	20C	Numbers to 100		●					●								
81	20D	Chance words				●											●
82	21A	Equal groups		●						●							
83	21B	Using groups		●						●							

Progress Test 3: Administer test (Teacher Resource, pages 144–147) then address weaknesses.

84	21C	Informal units of volume			●									●			
85	21D	Comparing volume			●									●			
86	22A	Numbers to 120		●				●									
87	22B	Skip counting patterns		●						●							
88	22C	Volume			●									●			
89	22D	Halves and quarters			●							●					
90	23A	Equal groups		●					●								
91	23B	Using groups		●					●								
92	23C	Halves and quarters			●							●					
93	23D	Symmetry			●							●					
94	24A	Skip counting		●						●							
95	24B	Number patterns		●						●							
96	24C	Months of the year			●										●		
97	24D	Gather and display data				●											●
98	25A	Number patterns		●						●							
99	25B	Counting by 2s, 5s and 10s		●						●							
100	25C	2D shapes			●							●					
101	25D	Properties of shapes			●							●					

KEY

Number and algebra
Measurement and space
Statistics and probability

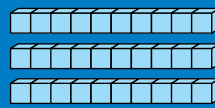
Page	Unit	Title	Strand	Number / algebra	Measurement / 00space	Statistics / probability	Content area	Numbers	Addition / subtraction	Sharing / grouping	Patterns	2D shapes / 3D objects	Length / area / mass	Capacity / volume	Time / duration	Position	Data displays / chance
102	26A	Half of a group		●						●							
103	26B	Halves		●						●							
104	26C	Calendar			●										●		
105	26D	The calendar			●										●		
106	27A	Sharing		●						●							
107	27B	Sharing		●						●							
108	27C	The cube			●							●					

Progress Test 4: Administer test (Teacher Resource, pages 149–152) then address weaknesses.

109	27D	Giving directions			●												
110	28A	Grouping to share		●						●							
111	28B	How many groups?		●						●							
112	28C	Comparing areas			●								●				
113	28D	Area using units			●								●				
114	29A	Looking for tens		●						●							
115	29B	Relating addition and subtraction		●						●							
116	29C	Relating addition and subtraction		●						●							
117	29D	Comparing mass			●								●				
118	30A	Bridging to 10		●						●							
119	30B	Bridging to 10s		●						●							
120	30C	Using coins in a data display				●											●
121	30D	Reflecting a shape			●							●					
122	31A	Bridging to 10s		●						●							
123	31B	Sliding a shape			●							●					
124	31C	Counting back		●						●							
125	31D	Left and right			●											●	
126	32A	Using partitioning		●						●							
127	32B	Using partitioning to add		●						●							
128	32C	Chance				●											●

Progress Test 5: Administer test (Teacher Resource, pages 154–157) then address weaknesses.

129	32D	Following directions			●											●	
130	33A	Gather and organise data				●											●
131	Identifying and addressing areas of need																
133	BLMs 1 Number lines/charts		2 Number bond houses														
135	3 Number bonds (addition)		4 Addition and subtraction facts														



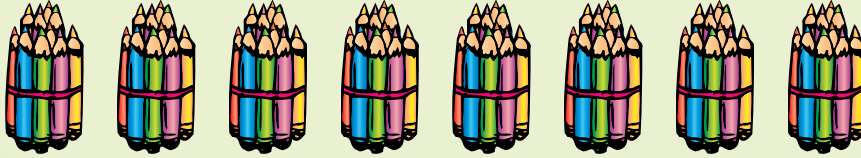
This is three groups of 10.



10 ten 20 twenty 30 thirty 40 forty 50 fifty 60 sixty 70 seventy 80 eighty 90 ninety 100 one hundred



Practise counting by tens.



This is 8 groups of ten. There are 80 pencils.

1 Count the groups of ten.

a tens

b tens

c tens

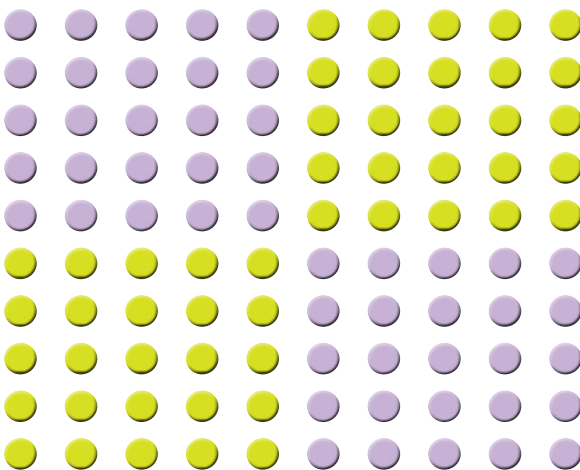
d tens

e tens

f tens

Sample Pages

2 Circle groups of ten.



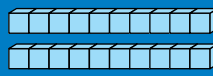
tens

Talk about your answer.

3 Estimate then count.

a Estimate tens
Count tens

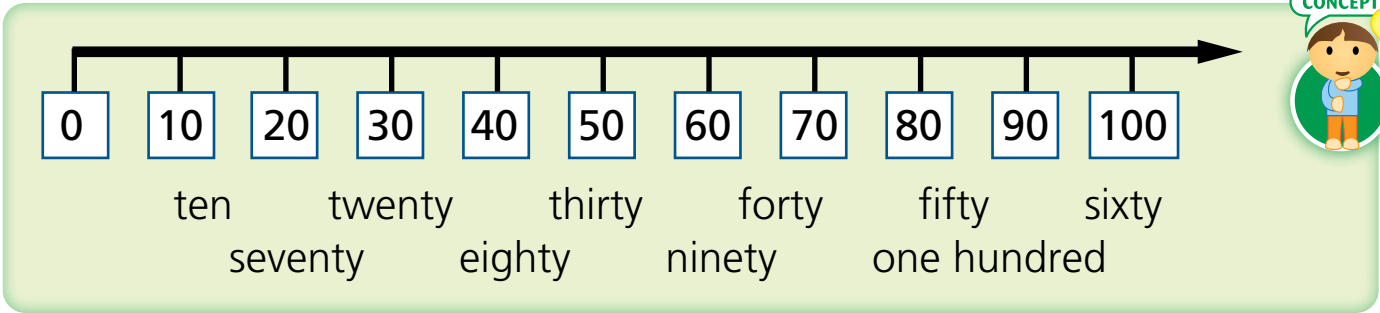
b Estimate tens
Count tens



20



CONCEPT



1 Use the beads to count by tens to 100 and then count from 100 to 10.

2 Write the numbers shown.

a

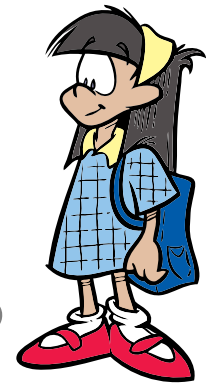
b

c

d

e

f



Ninety is 9 tens.

Forty is 4 tens.

Seventy is 7 tens.

3 Write the tens number that comes before and after.

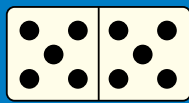
a 20

b 30

c 40

d 50

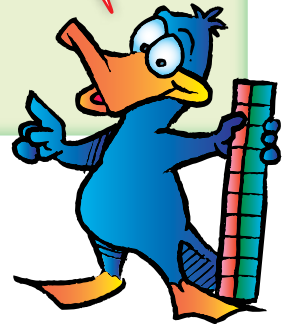




CONCEPT



Don't forget the zeros.



10	20	30	40	50
ten	twenty	thirty	forty	fifty
60	70	80	90	100
sixty	seventy	eighty	ninety	one hundred

- 1 a Count forwards by tens to 100.
- b Count backwards by tens from 100.

- 2 Write these numbers as numerals.

a twenty b eighty c ninety d forty

Sample Pages

- 3 Write the next four numbers in each pattern.

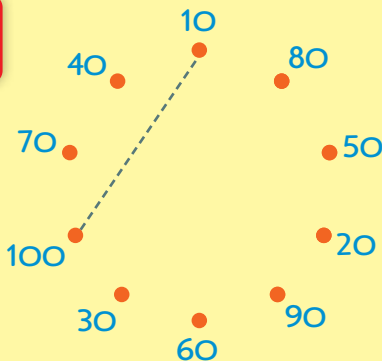
a 10, 20, 30, , , ,

b 90, 80, 70, , , ,



- 4 Begin at 10 and join the dots to count forwards by tens.

I'm seeing stars!



- 5 How much money?



cents

FUN SPOT



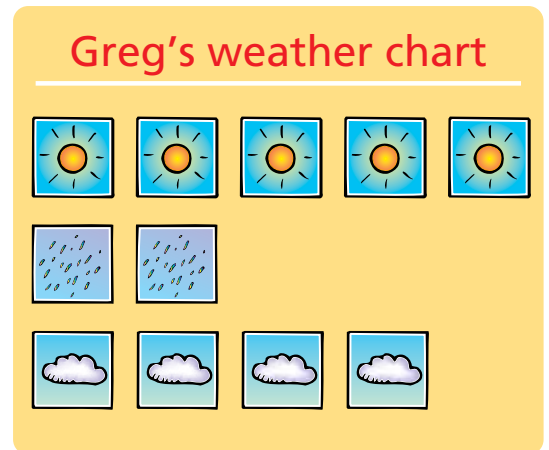


- 1 a How many balls did we win?
- b How many bears did we win?
- c Which prize did we win most often?
- d How many prizes did we win?



- 2 a Which room had most shoes?
- b Which room had least shoes?
- c How many shoes were in Room 3?
- d How many shoes altogether?

- 3 a For how many days did Greg draw pictures?
- b How many days were sunny?
- c How many days were not sunny?
- d Write a question of your own.

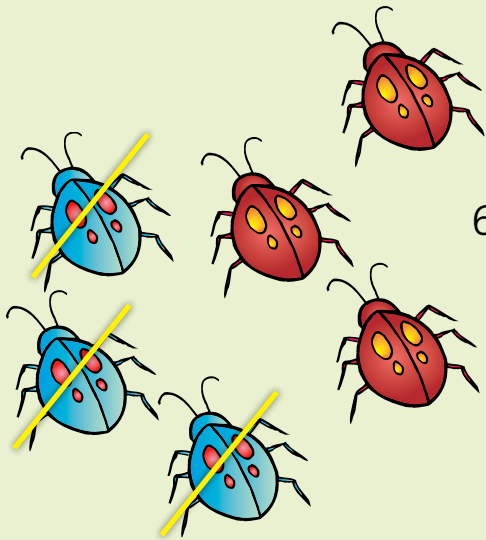




CONCEPT



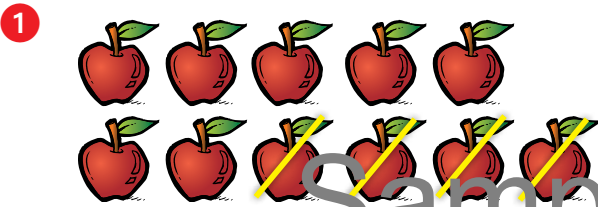
means take away or minus.



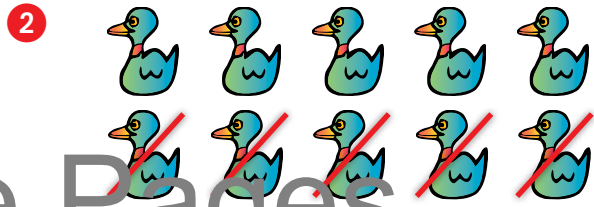
6 bugs take away 3 bugs equals

bugs - bugs = bugs

6 3 =



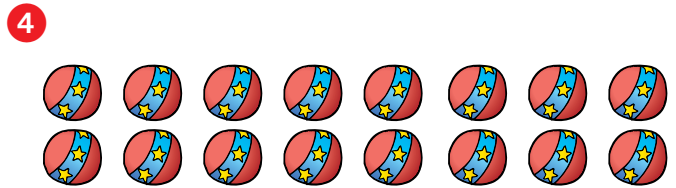
11 - 4 =



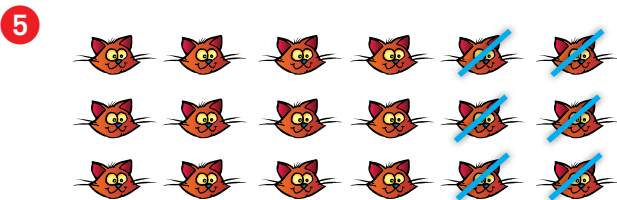
10 - 5 =



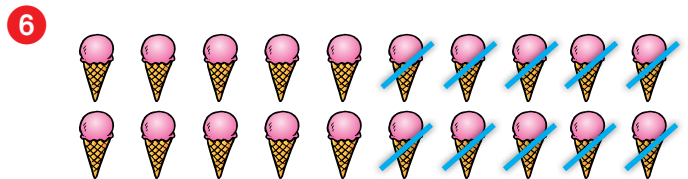
15 - 10 =



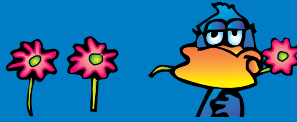
16 - 0 =



18 - 6 =



20 - 10 =



- means take away or minus.
= means equals.

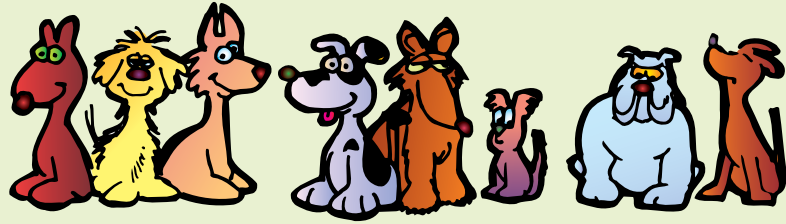


CONCEPT



Take away is the same as subtraction or minus.

$$8 - 2$$



Cross out 2 dogs and complete the story.

8 take away 2 equals

1



4 take away 1 equals

2



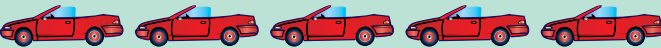
5 take away 3 equals

3



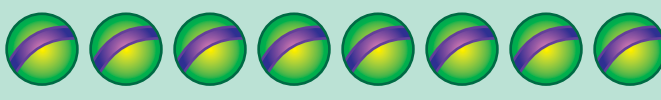
6 take away 4 equals

4



5 take away 5 equals

5



8 - 6 =

6



9 - 3 =



7



10 - 5 =



Cross out some balls and record your number sentence.

 - =

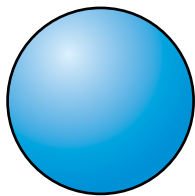
ACTIVITY





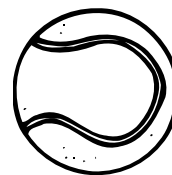
1 Colour the pictures that match the objects on the left. Discuss the choices.

Sphere

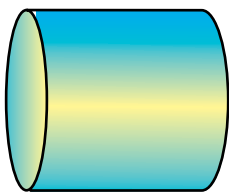


Ball-shaped object

A *sphere* has 1 curved surface. It can roll.

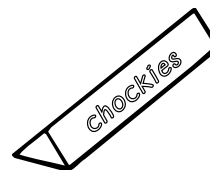


Cylinder

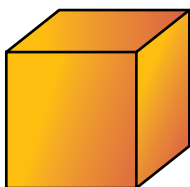


Can-shaped object

A *cylinder* has 1 curved surface and 2 flat surfaces. It can roll and slide.

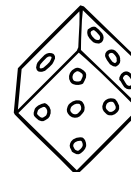


Cube

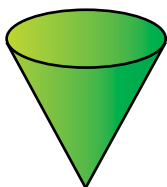


Box-shaped object

A *cube* has 6 flat surfaces. It can slide. All 6 surfaces are squares.

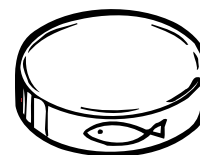


Cone

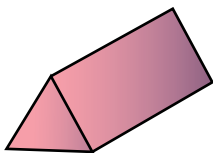


Cone-shaped object

A *cone* has 1 curved surface and 1 flat surface. It can roll and slide.

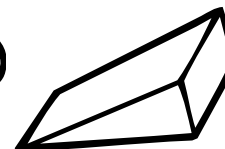


Prism

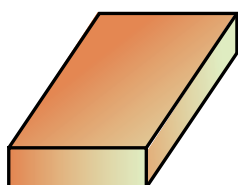


Box-shaped object

A *prism* has flat surfaces. It has 2 identical ends. The other surfaces are rectangles. It can slide.

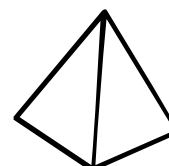
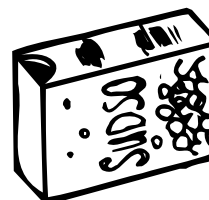


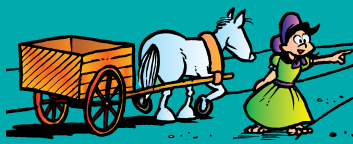
Rectangular prism



Box-shaped object

A *rectangular prism* is a prism that has rectangular ends. All surfaces are rectangles.



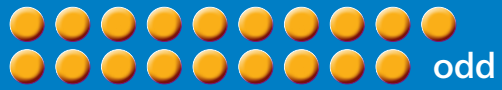


1 Match each photo with one of the objects in the middle.



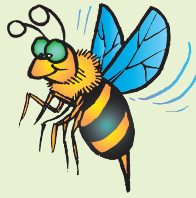
2 Draw a simple two-dimensional shape (circle or square) that is in each object. Use plasticine or playdough to make these 3D models.





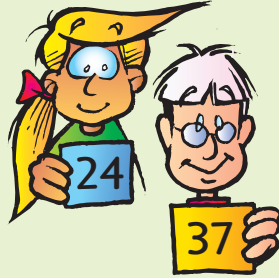
An even number of socks can be drawn in pairs.

Even numbers end in 0, 2, 4, 6 or 8.
16 is an even number.

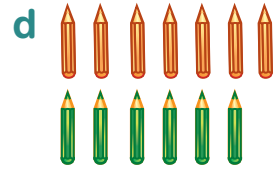
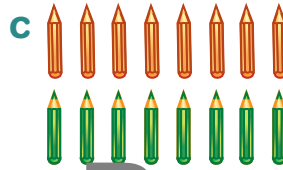
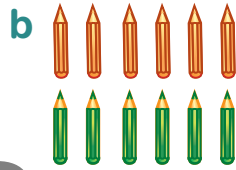
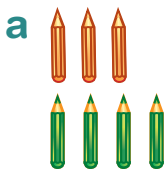


An odd number of socks cannot be drawn in pairs. There is always one left over.

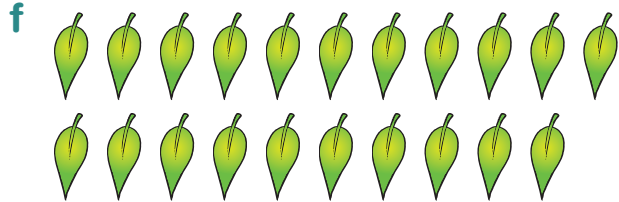
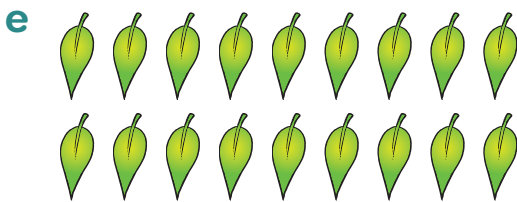
Odd numbers end in 1, 3, 5, 7 or 9.
15 is an odd number.



1 Under each group, write odd or even and then write the number.



Sample Pages



Write some even numbers here.

Write some odd numbers here.





7	5
12	



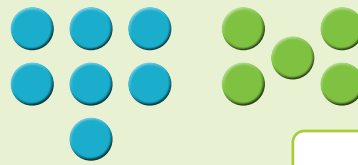
CONCEPT



means add, and or plus.



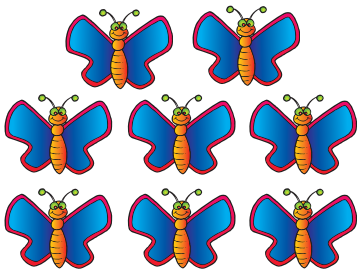
means makes or equals.



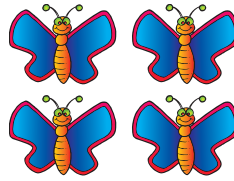
$7 + 5 =$

1 Complete the number sentences.

a



and



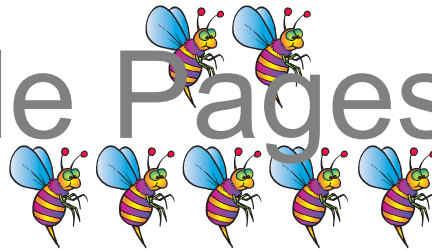
$8 + 4 =$

Adding zero does not change the number.

b

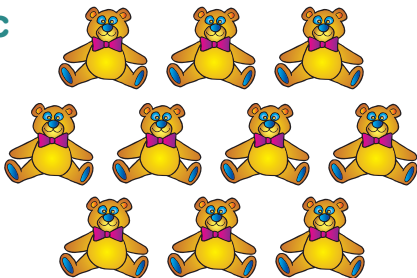


and

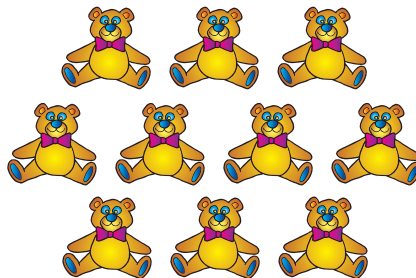


$9 + 7 =$

c



and



$10 + 10 =$

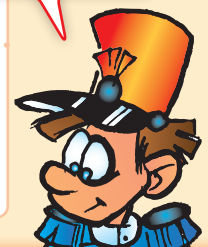
Draw pictures to make up your own number stories. Write a number sentence to match.

+ =



Draw pictures above and below the dotted line.

ACTIVITY

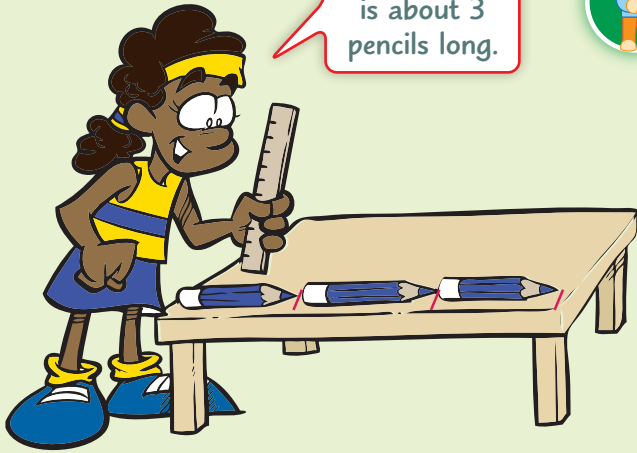




CONCEPT



This table is about 3 pencils long.



No gaps. No overlaps.

ACTIVITY



1 Use objects of the same size to measure the length of your desk.

Object	Length of desk
This book	<input type="text"/> books
A pen	<input type="text"/> pens
A tens block	<input type="text"/> blocks

2 Use a shoe to measure the length of each object.

Desk	<input type="text"/> shoes
Window	<input type="text"/> shoes
Your arm	<input type="text"/> shoes

Sample Pages

• Which is longest?

• Which is shortest?

Count steps to measure distance.



• From your seat to the door: steps

• Along a path: steps

• steps

• Would we use more pencils (P) or steps (S) to measure a distance?

INVESTIGATION

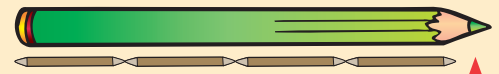




1 Use different units to measure length.

Length	Tally	Measurement unit
Length of pencil		4 toothpicks
Height of desk		hand spans
Width of book		paperclips
Width of door		straws
Length of room		books

Tally marks help us to count.

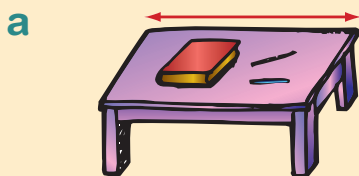


What do we do with the bit left over?

- over 4
- less than 5
- 4 and a bit

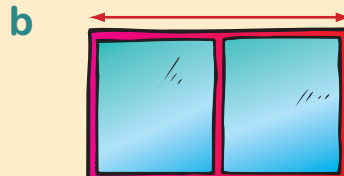
Sample Pages

2 Estimate (guess) and then measure these lengths using craft sticks.



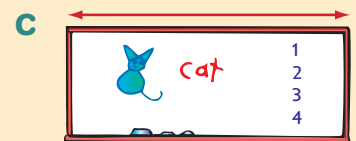
Guess

Measure



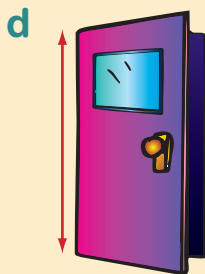
Guess

Measure



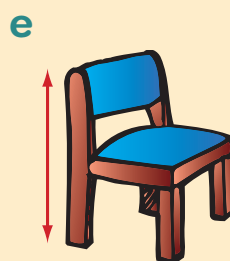
Guess

Measure



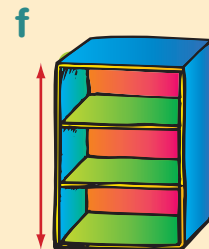
Guess

Measure



Guess

Measure



Guess

Measure



AUSTRALIAN
Signpost
MATHS



Sample Pages

**Teacher
Resource**

STAGE 1

1

Alan McSeveny

Rachel McSeveny

Diane McSeveny-Foster

Contents

Features of Australian Signpost Maths NSW	vii
About Australian Signpost Maths NSW	vii
Aims of the Signpost Maths series	vii
.....	
Organisation of the Signpost program	viii
The Student and Teacher Resource	viii
.....	
Progress Tests and Retests	ix
.....	
Using the Teacher Resource pages	x
.....	
The NSW Mathematics syllabus	xi
Stage 1 outcomes	xi
Content of syllabus	xii
.....	
Mathematics teaching and learning	xiii
Group work and language	xiii
Calculators and computers	xiii
Motivation and positive attitudes	xiii
.....	
Problem solving	xiv
Problem solving and modelling	xiv
Stages in problem solving	xiv
Strategies for problem solving	xiv
Enriching problem solving	xv
Open-ended problems	xvi
Problem-solving summary	xvi
.....	
Merit certificates	xvii
.....	
Contents and syllabus overview	xviii
.....	
Cross-reference	xxiii
Number and algebra	xxiii
Measurement and space	xxiii
Statistics and probability	xxiv
.....	
Outcomes: Stage 1	xxv

Sample Pages

Teacher Resource pages **1**

Checklist: Stage 1A Mathematics syllabus **131**

Progress tests **133**

Remediation records for Progress tests 133

Progress test 1 135

Notes and answers for Progress test 1 138

Progress test 2 139

Notes and answers for Progress test 2 143

Progress test 3 144

Notes and answers for Progress test 3 148

Progress test 4 149

Notes and answers for Progress test 4 153

Progress test 5 154

Notes and answers for Progress test 5 158

Progress retests **159**

Remediation records for Progress retests 159

Progress retest 1 161

Notes and answers for Progress retest 1 164

Progress retest 2 165

Notes and answers for Progress retest 2 169

Progress retest 3 170

Notes and answers for Progress retest 3 174

Progress retest 4 175

Notes and answers for Progress retest 4 179

Progress retest 5 180

Notes and answers for Progress retest 5 184

ID cards and Blackline masters (BLMs) contents **185**

ID cards **186**

ID card 1 186

ID card 2 187

Sample Pages

Blackline masters (BLMs)		188
BLM 1	Numeral and symbol cards	188
BLM 2	Word labels	189
BLM 3	Dot cards	190
BLM 4	Ordinal number labels	191
BLM 5	Ordinal number word labels	192
BLM 6	Number chart	193
BLM 7	Word cards, hundred square	194
BLM 8	Writing numbers	195
BLM 9	Naming numbers 0 to 20	196
BLM 10	Ten frames A	197
BLM 11	Ten frames B	198
BLM 12	Place-value cards	199
BLM 13	Numeral expanders	200
BLM 14	Numeral tracks	201
BLM 15	Adding two groups A	202
BLM 16	Adding two groups (number sentences)	203
BLM 17	Partitioning sticks	204
BLM 18	Number lines	205
BLM 19	Number bonds houses	206
BLM 20	Number bond houses (blank)	207
BLM 21	Number bonds (addition)	208
BLM 22	Number bonds (subtraction)	209
BLM 23	Finding the difference	210
BLM 24	Subtracting two groups (number sentences)	211
BLM 25	Spinners	212
BLM 26	Addition and subtraction facts	213
BLM 27	Sharing A	214
BLM 28	Sharing B	215
BLM 29	Days of the week	216
BLM 30	Months of the year A	217
BLM 31	Months of the year B	218
BLM 32	Calendars	219
BLM 33	Clock faces	220

Sample Pages


BLM 34	2D Shapes	221
BLM 35	3D Objects	222
BLM 36	Australian coins	223
BLM 37	Square grid paper	224
BLM 38	Square dot paper	225

N.B. Many of the BLMs can be laminated and used over and over again.

Signpost Year 1 Consolidation booklet (separate booklet to download)

Contents	2
1 Drawing shapes	3
2 Dot patterns	4
3 Counting to 30	5
4 Writing numbers	6
5 My shape picture	7
6 Number bonds	8
7 Number bond houses 1	9
8 Number bond houses 2	10
9 Tell me about the number 10	11
10 Tell me about the number 16	12
11 Number facts: adding 1, 2 and 3	13
12 Number facts: adding on from 1, 2 and 3	14
13 Number facts: adding on from 1, 2 and 3	15
14 Number facts: mixed addition to 10	16
15 Number facts: subtracting 1, 2 and 3	17
16 Number facts: subtracting from 6, 7 and 8	18
17 Number facts to 8: mixed subtraction	19
18 Number facts to 10: mixed subtraction	20
19 Number facts: doubles and near doubles	21
20 Number facts: addition to 20	22
21 Number facts: subtraction to 20	23
22 Number: equalities	24
23 Number: looking for tens	25
24 Number: place value	26
25 Number: bridging to ten	27

Sample Pages



26	Number facts: adding to a tens number	28
27	Number patterns	29
28	About numbers	30

N.B. The Consolidation booklet can be used when students finish early or when they have minimal supervision.

Sample Pages

Features of Australian Signpost Maths NSW

About Australian Signpost Maths NSW

Australian Signpost Maths NSW has been written to meet the requirements of the **NSW** Mathematics Primary Syllabus (K–6).

A Student Book and an online Teacher Resource are provided for the Kindergarten (Early Stage 1) year. For Years 1–6 (Stages 1–3), a Student Book, an online Teacher Resource and a Mentals Book are provided.

Together these resources provide a complete and fully integrated learning program. The structure of the program supports thorough and imaginative classroom teaching.

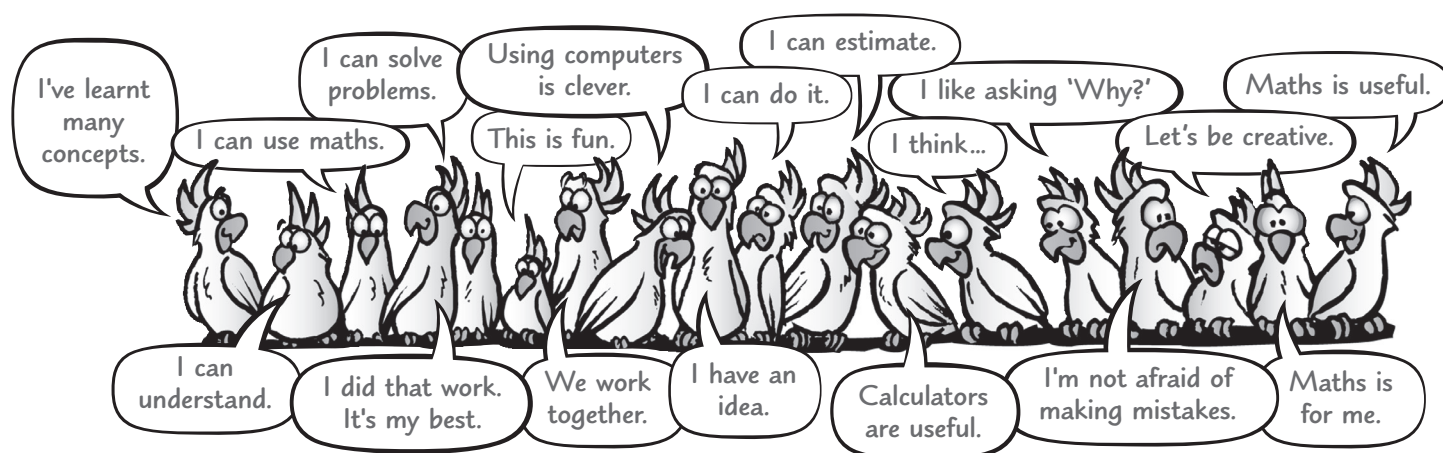
Aims of the Signpost Maths series

Our aim is to provide the very best set of resources possible to help students reach their full potential and gain confidence and a love of mathematics.

The Signpost program has been designed to facilitate:

- explicit teaching and a sound foundation of knowledge and skills
- working through carefully sequenced developmental steps in each aspect of the syllabus
- developing concepts by using concrete materials and real-life experiences
- involving students in cooperative group work posing, constructing and solving problems as an integral part of teaching
- developing language and extending vocabulary
- recognising the importance of evaluation and consequent remediation
- extending more capable students
- engaging students with technology as a tool for understanding concepts and developing skills
- motivation of students through creative illustrations and cartoons.

Sample Pages



Organisation of the Signpost program

The Student Book and Teacher Resource

In Student Books for Kindergarten, Year 1 and Year 2, pages are presented in the intended teaching order to allow students to work through the book from the beginning to the end. In Student Books for Years 3 to 6, the pages are organised in sections, reflecting the strands of the syllabus. This allows more teaching flexibility in programming.

Answers

The Answers for Student Book pages are provided on the Teacher Resource pages (see pages 1–130).

Teacher Resource pages

The Teacher Resource pages (pages 1–130) provide syllabus references, notes about the student page, additional teaching activities, extension work, language, resources needed for the lesson, cross-references, evaluation and answers for each page of the Student Book.

Student Book contents

The Student Book contents pages are duplicated within this Teacher Resource. They include a suggested order and summarise the content addressed during each term.

Contents cross-reference

This is found on pages x–xi of the Student Book and within this Teacher Resource. This shows the pages of the Student Book that address the important themes of the syllabus. The contents cross-reference can be used to construct programs, treat weaknesses after testing and direct students to work that will remediate or extend.

Progress tests and retests

It is essential to identify and treat students' weaknesses. It is important to recognise areas where a student's memory is fading and discover concepts missed or not understood. Testing is of great value when you use the test results to help the student master the concepts. Revise / reteach areas of weakness that are discovered to remove barriers to future learning of related concepts. When teaching new concepts and skills, it is important to build a strong foundation.

Progress tests 1 to 5 are found on pages 135–158 within the Progress tests section and Progress retests

are found on pages 161–184 within the Progress retests section of this resource. After each test, *notes* and *answers* are supplied. Progress test questions are cross-referenced to appropriate Student Book pages. These cross-references are found on the Remediation records (pages 133–134 for the Progress tests and pages 159–160 for the Progress retests) and on the Notes and answers pages for each test.

The Remediation record pages are used to provide a record of each student's progress. These are found on pages 133–134 (for the Progress tests) and pages 159–160 (for the Progress retests). For each error recorded, the question should be explained, practice should occur (using the page given in the Student Book cross-reference provided) and retesting should take place using the retest question related to the weakness addressed. An example of the Progress test is given on p viii of this resource. A checklist of skills for Stage 1A is provided on pages 131–132 for teachers who would like to record students' understanding of the syllabus.

Summary

1. Test recent work.
2. Enter mistakes in the *Remediation records*.
3. Use this to direct your revision / reteaching.
4. Use the matching retest questions to ensure understanding.

Dictionary

A dictionary of important mathematical terms is provided on pages xii–xvi of the Student Book.

Blackline masters (BLMs)

A collection of blackline masters is provided within this resource. Advice for the best use of these BLMs is found throughout the Teacher Resource pages.

Signpost Year 1 Consolidation booklet

This booklet is designed to reinforce work completed in class. It provides practice of important skills and addition and subtraction number facts. The booklet can be used when students or the class have limited supervision or when students finish early. It can provide meaningful work and addition tables review.

Progress tests and retests

Here is an example of a Year 1 Progress test. More information about the Progress tests and retests can be found on page viii of this resource.

Progress test 1

Progress test 1 Name: _____

Number and algebra

1 Fill in the missing numbers.

1		4		8
	13	15	17	

2 How many?

a _____

b _____

3 Write the number before and after

a _____, 19, _____

b _____, 15, _____

4 10 and 6 makes _____

a + = _____

Use the hearts to find:

b $4 + 5 =$ _____

c $6 + 2 =$ _____

d $8 + 1 =$ _____

Progress test 1 (continued)

5 a Order these numbers from smallest to largest.
18, 15, 12, 16

b One more than 17 is _____

c One less than 13 is _____

Measurement and space

6 Draw a two-shape pattern.

7 Count the shapes in this picture.
circles _____
triangles _____
rectangles _____
squares _____

8 a Add dots to make 10.

b $7 + \square = 10$
 $\square + \square = 10$

c Write another 'friends of 10'.
 $\square + \square = 10$

Progress test 1 (continued)

9 Look at the picture and circle the correct word in each sentence.

a The caterpillar is crawling along / beneath the stick.

b The mouse is above / below the hawk.

c The house is between / inside the hills.

d The hills are far from / close to the tree.

10 Draw lines to match objects that look alike.

11 Write the time.

a _____ o'clock

b _____ half past _____

c _____ thirty

Write the digital time for:

d six o'clock _____

e half past 4 _____

Notes and answers for Progress test 1 Remediation records: Progress tests

Notes and answers for Progress retest 1

Objective

- Diagnose weaknesses for future treatment.

Follow-up

- Any weakness discovered should be treated. Copies of Student Book pages are cross-referenced for follow-up.
- Questions and Student Book pages are cross-referenced on the Remediation records: Progress retests pages.
- A record of each student's progress can be kept using the Remediation records: Progress retests pages (see page 159).
- The content of the tests should be revised and reinforced throughout the year where possible. When teaching new concepts and skills, it is important to build on previously known work.

Question topic cross-reference

1 Whole numbers	pp 11
2 Whole numbers	p 4
3 Whole numbers	p 11
4 Addition	pp 10, 11, 14
5 Addition	pp 7, 18
6 Addition	pp 7, 18
7 Addition	pp 8, 15
8 Addition	p 15
9 Whole numbers	p 14
10 2D shapes	p 5
11 2D shapes	p 5
12 Position	pp 16, 17
13 3D objects	p 9
14 Time	pp 20, 21

Progress retest 1 answers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

2 a 12 b 18
c 12, 13, 14 d 16, 17, 18
e 13

3 a $6 + 4 = 10$ b 9 c 6 d 10
e $10, 6 + 4 = 10$

4 a 3 b Answers will vary. 1 and 5 makes 6, 2 and 4 makes 6, 4 and 2 makes 6 or 5 and 1 makes 6.

5 a 4 more dots will be drawn on the ten frame.
b 4
c Answers will vary. $1 + 9 = 10$, $2 + 8 = 10$, $3 + 7 = 10$, $4 + 6 = 10$, $5 + 5 = 10$, $6 + 4 = 10$, $7 + 3 = 10$, $8 + 2 = 10$, $9 + 1 = 10$

6 a 13, 15, 17, 19 b 13 c 17
d A repeating pattern of 3 shapes will be drawn.
e 2 circles, 3 triangles, 2 rectangles, 2 squares

7 a The words 'next to' will be circled.
b The words 'in front of' will be circled.
c The words 'beside' will be circled.
d The words 'close to' will be circled.
e The word 'above' will be circled.

8

9 a 2 o'clock b half past 6 c 3 thirty
d 11:00 e 5:30

Cross-references

Answers

Progress test 1:
Remediation records

Remediation records: Progress retests

Name: _____ Class: _____

The Student Book page reference shows the page in the Student Book that relates to the example type. Errors made are marked as . When remediation has occurred, mark as .

Progress retest 1

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Student Book page	11	4	11	10, 11, 14	7, 18	7, 18	8, 15	15	14	5	5	16, 17	9	20, 21
Errors made														

Questions covering each topic area
Number and algebra: Whole numbers: 1-3, 9
Measurement and space: 2D shapes: 10-11
3D objects: 13
Time: 14

Progress retest 2

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Student Book page	22	23, 24	24	22, 23	39, 42	30	31	34, 35	46, 47	26, 27, 43	43	28, 29	44, 45	40, 41
Errors made														

Questions covering each topic area
Number and algebra: 15
Measurement and space: 32, 33, 40, 36, 37, 25
Statistics and probability: 17

Progress retest 3

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Student Book page	50, 51	74, 75, 76	74	50, 80	80	51, 80	66	48	67	79	58	78	59, 60	70, 71	82, 83	56, 57
Errors made																

Questions covering each topic area
Number and algebra: Whole numbers: 1-6
Multiplication and division: 15
Measurement and space: Mass: 16
2D shapes: 19
Statistics and probability: Chance: 21
Patterns: 7
Time: 17
Area: 20
3D objects: 18
Graphs: 22

Using the Teacher Resource pages

● Page reference and title is the same as in the Student Book.

● Syllabus strand and substrand for the page are identified.

● Content statements and outcomes relevant to the lesson are listed with links back to the syllabus details.

● Useful information about the student page is given.

● Activities, Fun spots and Investigations enrich the learning experience.

● More teaching suggestions are given to support the lesson.

● The Teacher Resource page number is the same as in the Student Book.

Number and algebra

3A Numbers 11 to 20

Strand: Number and algebra
Substrand: Representing whole numbers A
Outcomes: Working mathematically (MA1-WM-01) pervades each strand. MA1-RWN-01
Content: Represent the structure of groups of ten in whole numbers

- recognise that ten ones is the same as one ten
- use ten as a reference in forming numbers from 11 to 20
- count large sets of objects by systematically grouping in tens

Extension work

- Use the Number lines tool to count to 20 (and beyond) by twos, fives and tens.
- Students can practise counting to 20 using the Number charts tool. Highlight the values as you count together as a class and then paint them white again as you count back down.

Language

eleven, twelve ... twenty, ten and one ... ten and nine, ones, tens, digit, missing number, groups of 10

Resources

- any classroom objects that can be counted (e.g. counters, ones blocks, buttons)
- craft sticks
- paper, pencils
- place-value material (ones and tens blocks)
- BLMs: 6 Number chart, 9 Naming numbers 0 to 20, 10 Ten frames A, 12 Place-value cards
- Consolidation booklet: 10 Tell me about the number 16
- Interactive game: Number bubbles
- Maths tools: Number charts, Number lines

Cross-reference

See also: pp 2, 3, 4, 11, 14
 Kindergarten pp 10, 11, 30, 34, 35, 43, 82, 94
 Year 2 p 5

Evaluation

Is the student able to do the following?

- read and represent the numbers to 20
- count forwards to 20
- use ten as a reference in forming numbers from 11 to 20

Answers

- 1 10 and 3 is 13. 10 and 6 is 16.
10 and 9 is 19. 10 and 5 is 15.
- 2 10 and 1 is 11. 10 and 2 is 12.
10 and 4 is 14. 10 and 7 is 17.
10 and 8 is 18.

Investigation

Students will circle two groups of ten.
 2 tens is 20.

Sample Pages

10
Australian Signpost Maths 1 NSW Teacher Resource

● Extension work is provided for fast or more capable students.

● Recommended language vocabulary for the lesson is given.

● Resources for all suggested activities are listed.

● Reference to blackline masters are provided in teaching context.

● Cross-reference allows teachers to easily find other related pages.

● The lesson's key ideas are identified for evaluation.

● Answers for the Student Book page are provided.

6A Groups of 10

Strand: Number and algebra

Substrand: Representing whole numbers A

Outcomes: Working mathematically (MA1-WM-01) pervades each strand. MA1-RWN-01

Content: Represent the structure of groups of ten in whole numbers

- recognise that ten ones is the same as one ten
- count large sets of objects by systematically grouping in tens
- estimate, to the nearest ten, the number of objects in a collection and check by counting in groups of ten (Reasons about quantity)

About this page

- Discuss the fact that ten pencils put together in a bundle is one group of ten. Count by tens.
- Discuss that in the Concept box there is a large number of pencils. The pencils have been put into groups of ten. There are four groups of ten so there are 40 pencils altogether. By putting the pencils into groups of ten and counting the groups, there is less likelihood of making a mistake when counting large numbers.
- Ensure students have enough pencils and rubber bands or hair ties to make several groups of ten of their own. Discuss the results.
- In Question 1, discuss the items that are grouped. Count by tens to determine the number in each group.
- In Question 2, groups of ten can be made by circling or putting lines through the rows or columns, as each are made up of ten counters.
- In Question 3, ensure students estimate the number of dots before counting them by grouping in tens.

More teaching suggestions

- Provide students with frequent opportunities to count forwards and backwards by ones, twos and tens to 100 (BLM 6 or the Number charts tool).
- Students name the number that precedes and follows a given number.
- Students take a handful of craft sticks, estimate the number of tens and check by counting. Record the number as *2 tens* and *20* (BLM 17 and BLM 18).
- Students count collections of objects and use numeral cards (BLM 1) to label each collection.
- Students can practise grouping objects into groups of 10 using the Place-value blocks tool. By using the glue icon, students can organise groups of 10 blocks, crayons, counters etc. into groups of 10.

- Students can skip count by 10 with the help of the Number charts tool. They should predict the pattern or the next value in the pattern before clicking 'next'.

Extension work

- Direct students to order the answers in Question 1 (i.e. 40, 50, 60, 70, 80, 90).
- Provide students with large collections of blocks and ask them to estimate, count and record the number of blocks. Ask students to share their method of counting and discuss strategies that may be more efficient (i.e. grouping the items into groups or bundles of 10).

Language

ones, tens, one ten, two tens, three tens ... nine tens, 10, 20 ... 100, estimate, guess, count, record, ones, digits, groups of ten

Resources

- items that can be grouped into tens (e.g. pencils, craft sticks, tens blocks, Unifix cubes, Centicubes)
- rubber bands or hair ties (to keep grouped items together)
- BLMs: 1 Numeral and symbol cards, 6 Number chart, 17 Partitioning sticks, 18 Number lines
- Example questions: Groups of 10
- Maths tools: Place-value blocks, Number charts

Cross-reference

See also: pp 23, 24, 39
Year 2 p 22

Evaluation

Is the student able to do the following?

- construct groups of 10
- recognise that ten ones is the same as one ten
- count large sets of objects by grouping in tens
- count forwards and backwards by tens
- estimate large groups of objects

Answers

- | | | | |
|----------|--------|----------|--------|
| a | 4 tens | b | 6 tens |
| c | 7 tens | d | 5 tens |
| e | 8 tens | f | 9 tens |
- 2 Ten groups of ten will be circled. 10 tens
- 3 Students will estimate the number of dots.
Five groups of ten will be circled. 5 tens
Students will estimate the number of dots.
Three groups of ten will be circled. 3 tens

6B Counting by tens

Strand: Number and algebra

Substrand: Representing whole numbers

Outcomes: Working mathematically (MA1-WM-01) pervades each strand. MA1-RWN-01

Content: Represent the structure of groups of ten in whole numbers

- recognise that ten ones is the same as one ten
- use number lines and number charts to assist with locating the nearest ten to a number
- estimate, to the nearest ten, the number of objects in a collection and check by counting in groups of ten (Reasons about quantity)

Content: Represent numbers on a line

- locate the approximate position of multiples of 10 on a model of a number line

Content: Use counting sequences of ones with two-digit numbers and beyond

- identify the number before and after a given two-digit number

Content: Forming groups A

- identify and describe patterns when skip counting forwards or backwards by twos, fives and tens

About this page

- 6B (p 23) and 6C (p 24) Counting by ten could be completed in the same lesson.
- Look at the header. Discuss both ways of showing groups of ten (i.e. two tens blocks and two bundles of 10 pencils). Ask, 'How many are in two groups of 10?', 'Is it easier to bundle items into groups of 10 and count by ten than count the items individually?'
- Use the Concept box to count by 10s to 100. Emphasise the different pronunciation of 'teen' and 'ty' (e.g. thirteen and thirty, fourteen and forty, fifteen and fifty). Note: Fifteen is made up of 1 ten and 5 ones and 50 is made up of 5 tens and 0 ones.
- Join the number names to the numerals by using different-coloured pencils to match them.
- Ask students to point to the red beads on the bead string around the page. Remember to begin at 'start' at the top of the page (10) when counting forwards. When counting backwards begin at the bottom of the page (100).
- For Question 2, students could use tens blocks and place-value cards (**BLM 12**) to make the numbers. Discuss the rectangles underneath the girl (e.g. ninety is 9 tens and is made up of 9 tens and 0 ones).
- In Question 3, students must write the **tens** number before and after the nominated numeral, not the next number directly before and after.

More teaching suggestions

- Discuss between which two tens numbers you would find: 27, 45, 78 and 92.
- Place cards with multiples of ten on them (up to 100) in a pile face down. Ask students to pick a card and place it in order along an unmarked line. When there are no more cards left check the order by counting by 10 to 100 or using the number chart (**BLM 6**).
- For further reinforcement, complete Consolidation booklet, worksheet 4 Writing numbers.

Extension work

- Ask students to work in small groups. One student thinks of a number (multiple of 10) and the other students take turns to guess the number by asking questions about the secret number. The number cannot be guessed until three questions about the number have been asked (e.g. Is the number higher than 50?).

Language

ten, twenty, thirty ... ninety, one hundred, number names, tens, bundle, groups, between, before, after, count forwards, count backwards, order

Resources

- individual cards with numbered 10 to 100
- bundles of 10 pencils
- place-value tens blocks
- BLMs: 6 Number chart, 12 Place-value cards
- Consolidation booklet: 4 Writing numbers

Cross-reference

See also: pp 22, 24, 39

Year 2 p 5

Evaluation

Is the student able to do the following?

- count forwards and backwards by 10
- read, order, write and represent two-digit numbers
- recognise that 10 ones is the same as 1 ten

Answers

- 1 Students will count to and from 100 both forwards and backwards.
- 2 a 20 b 40 c 60
d 70 e 50 f 80
- 3 a 10, 30 b 20, 40
c 30, 50 d 40, 60

6C

Counting by tens

Strand: Number and algebra

Substrand: Representing whole numbers A

Outcomes: Working mathematically (MA1-WM-01) pervades each strand. MAE-RWN-01

Content: Represent the structure of groups of ten in whole numbers

- recognise that ten ones is the same as one ten

Substrand: Forming groups A

Content: Count in multiples using rhythmic and skip counting

- count by twos, threes, fives and tens using rhythmic counting and skip counting
- identify and describe patterns when skip counting forwards or backwards by twos, fives and tens

About this page

- Discuss the dice pattern in the header (i.e. 2 groups of 5 makes 10). Practise instant recall of this fact as well as the number fact 5 and 5 makes 10.
- Ask students, 'Why do all of these numbers have zero at the end?' (i.e. 40 is 4 groups of ten and 0 ones.) Note: The zero is a place-holder.
- Count by tens pointing to the numbers in the Concept box as they are said.
- In Question 1, use the Concept box to count forwards and backwards.
- In Questions 2 and 3, encourage students to read and write the numerals without referring to the Concept box (i.e. from memory).

Fun spot

- Ask students to use their fingers to make the pattern in the Fun spot before joining the dots with a pencil.
- Talk about the purpose of money and the fact that the pictures are of 10 cent coins. In the past, a 10 cent coin could be made up of a group of ten 1 cent coins. Ask, 'How many ten cent coins make up one dollar? How many cents make up one dollar?'

More teaching suggestions

- Label tens in a variety of ways (e.g. 6 tens, 60 and sixty).
- Count the number of place-value ones in a tens block and ask students, 'Do ten ones blocks makes one tens block?' and 'Why would we use tens blocks to represent numbers instead of using ones blocks?'
- Use place-value blocks to model multiples of ten (BLM 12).
- Students can place ten counters in a number of zip-lock bags. Ask other students to identify the number represented.
- Provide students with frequent opportunities to count forwards and backwards by twos, fives and tens to 120.

- Ask students to name the number that is between two given numbers (BLM 6).
- Use the Number charts tool to model and investigate the patterns formed when skip counting by tens to 100.
- Students can create diagrams to demonstrate skip counting using the Place-value blocks tool. When they reach 100, use the glue icon to glue the 10 tens to form a hundred block.

Fun Spot

- Count by 10s, then instruct students to complete the pattern and count the 10 cent coins.

Extension work

- **Buzz:** In turn, students count forwards or backwards from a given number. Students are buzzed out of the game if their turn coincides with a number on the decade.

Language

ones, fives, tens, estimate, count, record, ten, twenty, thirty... ninety, comes after, comes before, place-value numerals, count forwards, count backwards

Resources

- any classroom objects that can be counted in multiples of 10 (e.g. counters, beads, place-value blocks)
- BLMs: 6 Number chart, 12 Place-value cards
- Maths tools: Number charts, Place-value blocks

Cross-reference

See also: pp 22, 23, 39

Year 2 pp 5, 42, 71, 74, 75

Evaluation

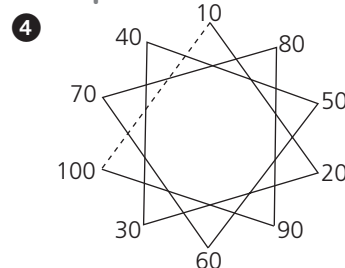
Is the student able to do the following?

- count forwards and backwards by ten
- read, order and represent multiples of ten
- recognise that ten ones is the same as one ten

Answers

- ① **a** Students will count forwards by tens to 100
b Students will count backwards by tens from 100.
- ② **a** 20 **b** 80 **c** 90 **d** 40
- ③ **a** 40, 50, 60, 70 **b** 60, 50, 40, 30

Fun spot



- ⑤ 80 cents

6D Data displays

Strand: Statistics and probability

Substrand: Data A

Outcomes: Working mathematically (MA1-WM-01) pervades each strand. MA1-DATA-02

Content: Represent data with objects and drawings and describe the displays

- describe information presented in one-to-one data displays (Reasons about relations)
- interpret a data display and identify the biggest or smallest values

About this page

- Discuss the header. Note: A data display can also be called a graph. It shows information (or 'data'). Data displays are used to compare objects and groups. They are a way of recording information so that it can be more easily understood.
- Talk about the heading for the display in Question 1. Ask, 'Where might we win such prizes?' Make students aware that the questions are not in the same order as the pictures.
- In Question 2, individual shoes can be counted. Talk about a pair of shoes. They are made up of 2 shoes: a left shoe and a right shoe.
- In Question 3, discuss the heading and the symbols used for the data display.
- Ask students to volunteer their question and discuss it with the class.
- Look at the data displays. Ask questions (e.g. 'In Question 1, which group has more items than the bears?' and 'In Question 2, which room has fewer shoes than Room 2?'). Ask students to suggest simple questions about the data on the page.

More teaching suggestions

- Compare groups of objects (e.g. marbles or counters) and discuss ways of recording the comparison (drawings, photos, colouring in squares to represent the objects). Also use comparisons that arise naturally within the school.
- Introduce the concept of creating a data display with the heading 'Coloured hair'. Create a table with rows labelled with different hair colours. Instruct students to place a sticky note under the appropriate hair colour. Ask students questions related to the data display. Ask students to make up questions of their own.
- Ask students to bring photographs of themselves and arrange these in a display (e.g. brown / blue eyes).
- Challenge the class to make a graph like the one in Question 3. Have paper squares and coloured pencils available.

- Discuss how many of each picture we might need to graph the weather for the next two school weeks.

Extension work

- At the end of each day for the next two school weeks select one of the prepared pictures and add it to a graph headed 'Weather'.

Language

more than, most, less than, least, row, compare, graph, most often, a name for the graph, display, weather, sunny, cloudy, rainy, data, represent, symbol, objects, data display

Resources

- coloured pencils, paper squares / sticky notes
- marbles, place-value ones
- photographs of students in the class
- Maths tool: Data and graphs

Cross-reference

See also: pp 53, 61, 97, 124, 130
Kindergarten pp 49, 52, 81, 93, 123, 125
Year 2 pp 9, 40, 45

Evaluation

Is the student able to do the following?

- represent information using picture graphs
- interpret picture graphs

Answers

- 1 a 5 b 4 c ball d 11
- 2 a Room 2 b Room 1
c 8 shoes (or 4 pairs of shoes)
d 26 (or 13 pairs of shoes)
- 3 a 11 b 5 c 6
d Answers will vary, but students should write about Greg's weather chart.

7A Subtraction

Strand: Number and algebra

Substrand: Combining and separating quantities A

Outcomes: Working mathematically (MA1-WM-01) pervades each strand. MA1-CSQ-01

Content: Use advanced count-by-one strategies to solve addition and subtraction problems

- apply the terms 'add', 'plus', 'equals', 'is equal to', 'is the same as', 'take away', 'minus' and 'the difference between' to describe combining and separating quantities
- recognise and use the symbols for plus (+), minus (-) and equals (=)
- record number sentences in a variety of ways using drawings, words, numerals and symbols

About this page

- 7A (p 26) and 7B (p 27) Subtraction could be completed in the same lesson.
- Discuss the symbols in the header and their meanings. Remind students that '-' can mean, 'take away', 'minus' or 'find the difference'. The equals sign '=' means 'equals', 'is equal to' or 'is the same as'.
- Look at the Concept box and talk about the symbols substituting for words. Discuss the fact that using numbers and symbols is much faster than using words.
- Count the number of bugs and complete the number sentence together as a class.
- In each question, encourage students to cross out the items to be taken away to consolidate their understanding of subtraction and answer the question correctly.
- Note: When items are taken away, the answer is less than the number you started with except when you take away zero, in which case, the number does not change.

More teaching suggestions

- Provide students with frequent opportunities to count back from 20. This will prepare them for future subtraction exercises involving counting back.
- Ask students to use number lines (**BLM 18**) to represent the questions on this page.
- Students could work in pairs and use concrete materials and symbols cards (**BLM 1**) to make and answer number sentences. One student could make up the number sentence and the other student could transfer it onto subtracting two groups B (**BLM 24**). They can then discuss what they have done.
- Model subtracting items from a group using a comparison chart with the Counters tool. Students can practise counting up to 20, placing objects onto the left-hand side and then dragging subtracted objects away from the left-hand group.

- Students can demonstrate their understanding of subtraction by erasing blocks (or dragging to a second workspace) using the Place-value blocks tool.

Extension work

- *Skittles:* Use up to 20 skittles and have students write a number sentence for each turn. Count the skittles knocked over and subtract that number from 20 (e.g. $20 - 5 = 15$). Count the skittles still standing to check students' answers.
- Students could use a calculator to check the answers to the completed page. Draw attention to the minus and equals signs.

Language

number sentence, subtraction, subtract, take away, minus, the difference between, leaves, equals, is equal to, is the same as, symbol, digit, numeral

Resources

- any classroom objects that can be counted (e.g. counters, beads, blocks, buttons, place-value materials)
- balls and skittles, or other objects suitable to be knocked down
- calculators
- BLMs: 1 Numeral and symbol cards, 18 Number lines, 24 Subtracting two groups (number sentences)
- Maths tools: Counters, Place-value blocks, Number lines

Cross-reference

See also: pp 27, 43, 54, 55, 58, 59, 60, 70, 71

Kindergarten pp 71, 79, 98, 99

Year 2 pp 3, 14

Evaluation

Is the student able to do the following?

- apply the terms 'equals', 'is equal to', 'is the same as', 'take away', 'minus' and 'the difference between' to describe separating quantities
- recognise and use the symbols for minus (-) and equals (=)
- record number sentences in a variety of ways using drawings, words, numerals and symbols

Answers

Concept

3 bugs, 6 bugs - 3 bugs = 3 bugs

$$6 - 3 = 3$$

① 7

② 5

③ 5

④ 16

⑤ 12

⑥ 10

7B Subtraction

Strand: Number and algebra

Substrand: Combining and separating quantities A

Outcomes: Working mathematically (MA1-WM-01) pervades each strand. MA1-CSQ-01

Content: Use advanced count-by-one strategies to solve addition and subtraction problems

- apply the terms 'add', 'plus', 'equals', 'is equal to', 'is the same as', 'take away', 'minus' and 'the difference between' to describe combining and separating quantities
- recognise the symbols for plus (+), minus (−) and equals (=)
- record number sentences in a variety of ways using drawings, words, numerals and symbols

About this page

- Discuss the different terms for subtraction written in the header (i.e. take away and minus). Ask students to make up a number sentence about the flowers.
- Discuss the Concept box. Instruct students to cross out two dogs then count the remaining dogs.
- Ask students to write the number sentence in the Concept box using only numerals and symbols.
- For Questions 3 to 7, encourage students to cross out the items being taken away.
- Students could rewrite Questions 1 to 4 using symbols.

Activity

- Students could work together to make subtraction stories. Ask students to make as many number sentences as they can, using the pictures provided and BLM 24.

More teaching suggestions

- Students could use ten frames (BLM 10 or BLM 11) to find the 'friends of 10'.
- Have two dice, one with only the numbers 1, 2 and 3 showing, and one with only the numbers 4, 5 and 6 showing (there could be two of each number on each die (i.e. two 1s, 2s and 3s on the first die and two 4s, 5s and 6s on the second die). Students could roll the dice and take the smaller number away from the bigger number. Students could use their fingers if they cannot subtract mentally.
- Have students use concrete materials to model subtraction. Use numeral and symbol cards (BLM 1) and word cards (BLM 7) to record actions.
- Complete number bonds (subtraction) (BLM 22) for further consolidation.
- For further reinforcement, complete Consolidation booklet 15 Number facts: subtracting 1, 2 and 3.

- Create a comparison chart using the Counters tool to model subtracting from a group of counters. Encourage students to write a description of the diagram using the text icon.
- Students can use the Ten frames tool to model subtraction by painting the counters to be subtracted and then removing them from the frame.

Extension work

- Instruct students to make up number sentences of their own. Students could draw pictures as well as write the corresponding number sentence. Record the number sentence on subtracting two groups (BLM 24).

Language

number sentence, subtraction, subtract, take away, minus, the difference between, leaves, equals, is equal to, is the same as, symbol, digit, numeral

Resources

- any classroom objects that can be counted (e.g. counters, beads, buttons, pattern blocks, picture cards, place-value ones, Centicubes or Unifix cubes)
- BLMs: 1 Numeral and symbol cards, 7 Word cards, hundred square, 10 Ten frames A, 11 Ten frames B, 22 Number bonds (subtraction), 24 Subtracting two groups (number sentences)
- Consolidation booklet 15 Number facts: subtracting 1, 2 and 3
- Interactive game: Subtraction by counting on
- Example questions: Subtraction
- Maths tools: Counters, Ten frames

Cross-reference

See also: 26, 43, 54, 55, 58, 59, 60, 70, 71, 78
Kindergarten pp 26, 71, 79, 98, 99
Year 2 pp 3, 14

Evaluation

Is the student able to do the following?






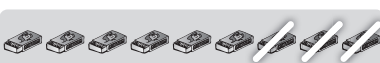

- apply the terms 'equals', 'is equal to', 'is the same as', 'take away', 'minus' and 'the difference between' to describe separating quantities
- recognise and use the symbols for minus (−) and equals (=)
- record number sentences in a variety of ways using drawings, words, numerals and symbols

Sample Pages

Answers

Concept

8 take away 2 equals 6.

- 1 3 
- 2 2 
- 3 2 
- 4 0 
- 5 2 
- 6 6 
- 7 5 

Activity

Answers will vary. Students may write one of the following:

$$6 - 0 = 6, 6 - 1 = 5, 6 - 2 = 4, 6 - 3 = 3,$$

$$6 - 4 = 2, 6 - 5 = 1, 6 - 6 = 0$$

Sample Pages

7C

3D objects

Strand: Measurement and space

Substrand: Three-dimensional spatial structure A

Outcomes: Working mathematically (MA1-WM-01) pervades each strand. MA1-3DS-01

Content: 3D objects: Recognise familiar three-dimensional objects

- Identify and name familiar three-dimensional objects, including cubes, cylinders, spheres and rectangular prisms

Content: 3D objects: Sort and describe three-dimensional objects

- manipulate and describe familiar three-dimensional objects
- sort familiar three-dimensional objects according to obvious features

About this page

- Note: Two-dimensional (2D) shapes are flat and have two dimensions: length and width. Three-dimensional (3D) objects have three dimensions: length, width and height.
- Discuss the header. Ask 'What 2D shape will be found on the 3D objects shown?'
- In the past, the names of the 3D objects have been referred to but not emphasised. Here we formally introduce the terms 'sphere', 'cylinder', 'cube', 'cone' and 'prism'. Next to each, the terms previously used (e.g. ball-shaped object) and some of its features are listed. Discuss the features listed for each 3D object in the left column.
- The term 'prism' is introduced by giving an example of a triangular prism. We will call it a prism because the only prism to be given a specific name at this stage is the rectangular prism. The ends of a prism could be any shape that has straight sides (e.g. a hexagon, a square, a pentagon or an octagon).
- Have students name real-life examples of each of these 3D objects. Explain that you will accept examples that look like the 3D object (e.g. a balloon would be accepted as an example of a sphere).
- Discuss the different orientations 3D objects can take. Use the pictures on this page to demonstrate this point. Emphasise that the orientation of an object may change but its size and shape do not.
- After students have made their selections, discuss why the other objects were not selected.

More teaching suggestions

- Ask students to demonstrate how certain objects can slide or roll. You could also discuss whether each object type can stack or pack into a given space.
- Encourage students to use the language listed when describing 3D objects.

- Allow students to group and sort objects according to type. Discuss the groupings.
- Frequently allow students to explore a variety of objects through free and directed play.
- Students could work in groups. Each group could make a different playdough model of one of the 3D objects. Select a student to talk about the features of the 3D object made by their group.
- Place a 3D object in a bag. Choose a student to put their hand in the bag and, without looking or saying the object's name, describe the object. Have the other students guess the name of the object.
- Students can explore the properties of 3D objects using the Geometry tool.

Extension work

- *Object hunt:* Ask students to find objects in the classroom similar to the objects on the page. Students could write the name of the object and draw a picture of it in their book or on a piece of paper.

Language

sphere, cylinder, cube, cone, prism, rectangular prism, curved surface, flat surface, 3D object, stack, roll, slide, solid, three-dimensional

Resources

- boxes, cartons, tins
- environmental objects, models of solids, wood offcuts, cotton reels
- paper, coloured pencils
- pictures
- Maths tool: Geometry

Cross-reference

See also: pp 9, 29, 68, 69, 108
Kindergarten pp 44, 45, 68, 69, 84, 88, 96, 124
Year 2 pp 20, 88, 89, 132, 133

Evaluation

Is the student able to do the following?

- name each of the 3D objects introduced on this page
- recognise 3D objects in pictures and in the environment
- sort familiar 3D objects according to obvious features
- use appropriate language to describe 3D objects

Answers

- 1 A discussion about the choices should occur.
 - The ball will be coloured.
 - The can will be coloured.
 - The die will be coloured.
 - The ice-cream cone will be coloured.
 - The wedge will be coloured.
 - The Sudso box will be coloured.

7D Objects in our world

Strand: Measurement and space

Substrand: Three-dimensional spatial structure A

Outcomes: Working mathematically (MA1-WM-01) pervades each strand. MA1-3DS-01

Content: 3D objects: Sort and describe three-dimensional objects

- sort familiar three-dimensional objects according to obvious features

Content: 3D objects: Recognise familiar three-dimensional objects

- Identify and name familiar three-dimensional objects, including cubes, cylinders, spheres and rectangular prisms

About this page

- Note: Three-dimensional (3D) objects are sometimes called 'solids' but they are not always 'hard'. They have three dimensions. These are length, width and height.
- Explain that when 3D objects are drawn, hidden sides are sometimes drawn as dotted lines so we can understand what the shape really looks like.
- Discussion: Objects in our world are often approximations of the 3D objects for which we have names. Ask the students to name each of the solids within the blue circle. Identify the objects surrounding the blue circle (didgeridoo, crescent, present, dice, bowl, cones, globe of the world, suitcase, ice cream, glass, Rubik's cube, party hats, barrel, football, paper towels).
- Review the features of the 3D objects referring back to unit 7C. Discuss the properties of the sphere (ball-shaped object), cylinder (can-shaped object), cube (box-shaped object), cone (cone-shaped object) and rectangular prism (box-shaped objects).
- Discuss the header. Ask students to find three-dimensional objects in the picture. Some suggestions might include the cart (rectangular prism), the wheels (cylinders), parts of the fence (prisms or cylinders) and poles attaching the horse and cart (cylinders). Encourage students to use the terms sphere, cylinder, cube, cone and prism.
- Discuss the different orientations of the 3D objects and the photos on the page. Emphasise that the orientation of an object may change but its size and shape do not (e.g. the Toblerone box looks like the prism in the centre. The cheese is also a prism but it has a different orientation). Discuss this.
- In Question 1, name the 3D objects in the circle and discuss their features. The use of the term 'surface' should be encouraged.
- Have students colour match the 3D solid in the circle to the photo of the object (i.e. cylinders – blue lines, spheres – orange lines, prisms with rectangles at the ends – pink lines, prisms with triangles at the ends – yellow lines, cubes – red lines and cones – green lines).

- In Question 2, 3D objects can have 2D shapes on them. Two-dimensional (2D) shapes are flat and have two dimensions: length and width. A 2D shape on a 3D object can be traced (e.g. one side of a die is a square). Encourage students to share how they made their 3D model using the language of 2D shapes and 3D objects.

More teaching suggestions

- Ask students to demonstrate how certain objects can slide, roll, stack or pack into a given space.
- Show models of the six solids displayed on the page. Allow students to see them from different points of view through free and directed play.
- Students can research common geometric solids to create a poster and give examples of their use in everyday life.
- Use the Geometry tool to practise naming prisms and discussing the features of prisms.

Extension work

- Students could make additional models of other solids shown on the page.

Language

three-dimensional objects, prism, cone, sphere, cube, cylinder, object, shape, model, flat, curved, surface, pointed, rounded, straight, smooth, edge, box shape, can shape, ball shape, cone shape

Resources

- models of the objects on the page: cone, cube, cylinder, rectangular prism, sphere, triangular prism
- plasticine, playdough or other modelling materials
- A3 paper, textas or coloured pencils
- Maths tool: Geometry

Cross-reference

See also: pp 9, 28, 68, 69, 108

Kindergarten pp 44, 45, 68, 69, 84, 88, 96, 124

Year 2 pp 20, 88, 89, 132, 133

Evaluation

Is the student able to do the following?

- recognise and name 3D objects in pictures and in the environment

Answers

- 1 Students will match each picture to a 3D object in the blue circle.
- 2 These 2D shapes will be drawn.
dice - square
cone - circle
cylinder - circle
Playdough models of a cube, cone and cylinder will be made.

8A Odd and even numbers

Strand: Number and algebra

Substrand: Representing whole numbers A

Outcomes: Working mathematically (MA1-WM-01) pervades each strand. MA1-RWN-02

Content: Continue and create number patterns

- model and describe 'odd' and 'even' numbers using items paired in two rows

About this page

- Discuss the header. Ask, 'Why is this an odd number of circles?' (In the diagram one circle is by itself.)
- Ask students to look at the socks in the Concept box. Talk about why odd numbers always end in 1, 3, 5, 7 or 9.' Discuss the number 27. Ask, 'Is it odd or even?' and 'How do you know?'
- Ask students, 'If one of the 16 socks on the left of the Concept box did not have a matching design to the others, would there still be an even number of socks?' (Yes, but one pair will not be a matching pair.)
- In Question 1, students can draw lines to match the pencils and leaves to make pairs.
- Remind students that in Question 1, there are two parts to each question (i.e. recognising if the group is odd or even and writing how many items are in each group).

Activity

- In this activity, encourage more capable students to write larger numbers up to 120 (e.g. odd numbers such as 63, 87 and 113). Remind students that the number of ones determines an odd or even number (not the number of tens) (i.e. 74 is even because it ends in a 4 and 4 is a number that makes a pair).

More teaching suggestions

- Have each student take a number of counters or ones blocks and group them in pairs. Say, 'Hands up those who had one left over. You have an odd number of counters. Hands up those who had only pairs of counters with none left over. You have an even number of counters.' Repeat this activity several times.
- Count by two to say the even numbers.
- Discuss the fact that houses usually line the street in order. On one side there are odd numbers and on the other side there are even numbers. Discuss the house numbers of some students and the numbers found next to them (e.g. 13, 15, 17).
- Use a number chart (using Number Charts tool or **BLM 6**) to colour all even numbers to 60 blue. Colour all odd numbers from 61 to 120 red.
- Use the Number charts tool to count by twos starting at 1 and then at 2. Compare the patterns formed, taking note of the ones digit.

- Students can use the Ten frames tool or **BLM 11** to demonstrate their understanding of even numbers with pairs of counters and odd numbers as pairs of counters plus an extra 1.

Extension work

- Have students write as many even numbers as they can in one minute.
- Have students write as many odd numbers as they can in one minute.

Language

odd, even, pairs, count by twos, groups of two, one left over, zero

Resources

- counters
- ones blocks
- coloured pencils
- BLMs: 6 Number chart, 11 Ten frames B
- Maths tools: Number charts, Ten frames

Cross-reference

See also: pp 98, 99
Year 2 p 99

Evaluation

Is the student able to do the following?

- model and recognise odd and even numbers
- distinguish between odd and even numbers

Answers

- 1 a odd, 7 b even, 12 c even, 16
d odd, 13 e even, 18 f odd, 21

Activity

Answers will vary. Even numbers will be written in the first rectangle and odd numbers will be written in the second rectangle in the activity box.

8B Addition to 20

Strand: Number and algebra

Substrand: Combining and separating quantities A

Outcomes: Working mathematically (MA1-WM-01) pervades each strand. MA1-CSQ-01

Content: Use advanced count-by-one strategies to solve addition and subtraction problems

- apply the terms 'add', 'plus', 'equals', 'is equal to', 'is the same as', 'take away', 'minus' and 'the difference between' to describe combining and separating quantities
- recognise and use the symbols for plus (+), minus (−) and equals (=)

About this page

- A diagram is used in the header to help students understand number relationships. Show similar diagrams with the 7 or 5 missing to make 12. These diagrams will be used often throughout the books as a problem-solving strategy. (See header of p 82.)
- Discuss the equals (=) and plus (+) symbols. Relate the number of counters to the numbers in the sentence.
- Discuss the words in the rectangle (i.e. adding zero does not change the number). Ask students to suggest some examples.
- Students can complete each number sentence in Question 1 by counting on using the pictures or any other appropriate method.

Activity

- Students should draw pictures to help explain the number sentence they devise. The large rectangle is divided into two parts, each part representing one of the boxes in the number sentence (e.g. if the number sentence is $5 + 3 = 8$, there should be 5 items drawn above the dotted line and 3 items drawn below the dotted line).

More teaching suggestions

- Have students use interlocking blocks to build two towers to solve addition problems to 20, including the addition of zero. Use adding two groups B (BLM 16) to write each number sentence.
- Ask students to use blocks to show the commutative law of addition (e.g. $2 + 3 = 3 + 2$). Ask them to suggest other examples.
- Students can make up their own number sentences using counters and ten frames B (BLM 11).
- Note: Regular drill of addition facts is important to prepare students for more difficult addition and subtraction strategies.
- Have students use numbers lines (BLM 18) and point to a given number with their finger. Ask students to move their finger along the line as they say each number while counting forwards and backwards.

- Discuss the number before and after a given number. The number 'before' a given number means 'one less' than that number (e.g. 16 is one less than 17, so 16 comes before 17). The number 'after' a given number means 'one more' than that number (e.g. 14 is one more than 13, so 14 comes after 13).
- Students can use the Counters tool to model the addition of groups. Students can practise labelling their own diagrams using the text icon to insert mathematical symbols and describing words.
- Students can use the Number charts tool to practise the addition of smaller numbers by highlighting appropriate columns and rows.
- Students can organise the addition of counters using the Ten frames tool. Emphasise the bridging to ten method of addition.

Extension work

- Students could work in pairs and use concrete materials and symbols cards to make and answer number sentences. One student could make up the number sentence and the other student could transfer it onto adding two groups B (BLM 16). They can then discuss what they have done.

Language

plus, add, adding, addition, makes, equals, altogether, more than, number sentence, number fact counting on, total, altogether

Resources

- any classroom objects that can be counted (e.g. counters, beads, blocks, Multilink cubes, place-value materials)
- BLMs: 11 Ten frames B, 16 Adding two groups B (number sentences), 18 Number lines
- Maths tools: Counters, Number charts, Ten frames
- Maths tool activity: Adding odd and even

Cross-reference

See also: pp 38, 48, 62, 114
Year 2 p 2

Evaluation

Is the student able to do the following?

- apply the terms 'add', 'plus', 'equals', 'is equal to', 'is the same as' to describe combining quantities
- recognise and use the symbols for plus (+), minus (−) and equals (=)

Answers

1 a 12 b 16 c 20

Activity

Answers will vary. Students will draw pictures and write a number sentence to match.

8C

Units of length

Strand: Measurement and space

Substrand: Geometric measure A

Outcomes: Working mathematically (MA1-WM-01) pervades each strand. MA1-GM-02

Content: Length: Measure the lengths of objects using uniform informal units

- use uniform informal units to measure lengths and distances by placing the units end to end without gaps or overlaps
- select appropriate uniform informal units to measure lengths and distances
- recognise and explain the relationship between the size of a unit and the number of units needed (Reasons about relations)
- count informal units to measure lengths or distances and describe the part left over
- record lengths and distances by referring to the number and type of unit used
- use a single informal unit repeatedly (iteratively) to measure length

About this page

- Discuss the header. Ask students why we need more little units than bigger units when measuring the length of the platypus.
- Look at the Concept box 'Ask, What is the girl doing?' Discuss the fact that she is measuring the length of the table using informal units.
- Discuss that the girl is using the method of measuring 'end-to-end' without gaps or overlaps.

Activity

- Talk about informal units and ask students to suggest some informal units that could be used to measure length.
- In Question 1, several of the same item will be required to measure the lengths. Ensure students use the 'end-to-end' method with no gaps or overlaps.
- In Question 2, if students remove a shoe, ensure safety protocols are observed. Shoes should be brought to school for the purpose of this lesson. As an alternative, students can trace around their shoe, onto cardboard, and cut out the shape.
- Note: Prepared labels could be used to record lengths of objects or distances between objects.

Investigation

- Students count the number of their own steps required to measure the various distances. Discuss the results in terms of the different number of steps taken by students.
- Discuss methods used to measure curves and curved paths.
- Investigate different informal units of length used in various cultures.

More teaching suggestions

- Note: Provide students with opportunities to describe these and other similar activities, as it allows them to use the language of 'measurement'.
- Discuss interlocking blocks as a unit of measurement. Discuss why this might be a good choice (no gaps or overlaps when measuring).
- Remind students to estimate then count the number of informal units required to measure a length. Discuss any part left over.
- Encourage students to describe a length as a number and a unit used (e.g. My desk is 10 shoes long).

Extension work

- *How long is your shoe?:* Have each student trace a shoe onto cardboard and cut out the shape. Choose an informal unit to measure the length of the cut-out shoe. Record the length. Choose a different unit and repeat the process. Discuss the results.

Language

length, distance, end-to-end, gaps, overlaps, units of length, 10 shoes long etc., hand span, more, less, 'make, mark and move', compare

Resources

- various informal units of length (e.g. blocks, erasers, pens)
- cardboard
- prepared length labels
- shoes, other useful objects to be measured
- Example questions: Units of length

Cross-reference

See also: pp 33, 40, 41

Kindergarten pp 5, 36, 57, 76, 115

Year 2 pp 36, 37, 64, 68

Evaluation

Is the student able to do the following?

- select appropriate uniform informal units to measure lengths and distances
- use a single informal unit repeatedly to measure length
- use uniform informal units to measure lengths and distances by placing the units end to end without gaps or overlaps
- record lengths and distances by referring to the number and type of unit used

Answers

Activity

- 1 Answers will vary.
- 2 Answers will vary.

Investigation

Answers will vary.

8D Informal units of length

Strand: Measurement and space

Substrand: Geometric measure A

Outcomes: Working mathematically (MA1-WM-01) pervades each strand. MA1-GM-02

Content: Length: Measure the lengths of objects using uniform informal units

- use uniform informal units to measure lengths and distances by placing the units end to end without gaps or overlaps
- recognise and explain the relationship between the size of a unit and the number of units needed (Reasons about relations)
- count informal units to measure lengths or distances and describe the part left over
- record lengths and distances by referring to the number and type of unit used
- use a single informal unit repeatedly (iteratively) to measure length

About this page

- Discuss that the orange bar in the header is 3 platypuses long and the method being used is placing the platypus 'end to end' without gaps or overlaps.

Activity

- Talk about informal units and ask students to suggest some informal units that could be used to measure length. Some units are better than others because they have a consistent width and length (e.g. ones blocks).
- Note: Before proceeding any further with the lesson, explain the use of a tally. The purpose of a tally is to keep count by making a mark to represent each item. To make counting easy, the marks are drawn in groups of five with each fifth mark crossing the preceding four marks. Direct students' attention to the sign (e.g. 6 is |||| and 12 is $\text{||||} \text{||||}$).
- Ask students about the relationship between the size of a unit and the number of units needed (i.e. the shorter the unit, the more units are required. Conversely, the longer the unit, the fewer units are required). The pencil is about 4 toothpicks long but it is also 3 platypuses long. A platypus is a longer unit than the toothpick.
- Look at the pencil and count the number of toothpicks used to measure its length. Discuss the question, 'What do we do with the part left over?' Ask students to vote for the option they think best describes the part left over (i.e. over 4, less than 5 or 4, and a bit of a toothpick long. One is not preferred over another. However, 'less than five' is not as good an answer as the other two.) Select students to explain why they chose their answer.

- Note: Students should be encouraged to describe a length as the number and type of units used (e.g. the window is 6 sticks long).
- In Question 2, ensure students estimate the number of craft sticks used before measuring. Again, emphasise the end-to-end method with no gaps or overlays.

More teaching suggestions

- Provide frequent opportunities for students to measure length by placing informal units end to end without gaps or overlaps.
- Encourage students to select an appropriate informal unit for the length to be measured and complete other similar activities.
- Estimate the length of curves using uniform informal units and check by measuring.

Extension work

- *Longer than:* Students find objects that they estimate to be longer than four pencils.
- Students check their prediction by measuring. Discuss the results.

Language

length, distance, width, end to end, gaps, overlaps, tally, informal units of length, 10 boxes wide etc., measure, hand span, make, mark and more', estimate, guess

Resources

- various informal units of length (e.g. craft sticks, pegs, pencils, pens, sticks)
- length labels

Cross-reference

See also: pp 32, 40, 41

Kindergarten pp 5, 36, 57, 76, 115

Year 2 pp 36, 37, 64, 68

Evaluation

Is the student able to do the following?

- use informal units to measure lengths and distances by placing the units end to end without gaps or overlaps
- recognise and explain the relationship between the size of a unit and the number of units needed
- count informal units to measure lengths or distances and describe the part left over
- record lengths and distances by referring to the number and type of unit used
- use a single informal unit repeatedly to measure length

Answers

Activity

- 1 Answers will vary.
- 2 Answers will vary.

Progress test 2

Name:

Number and algebra

1 a Estimate how many ice creams you can see.

b Circle groups of 10.

c How many tens did you circle?



2 10, 20, 30, , , , , ,

3 Write the number for:

a twenty

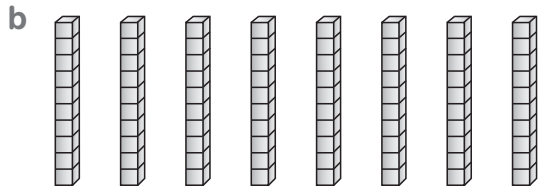
b ninety

c fifty

4 Count the groups of ten.

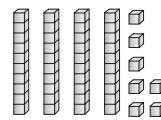
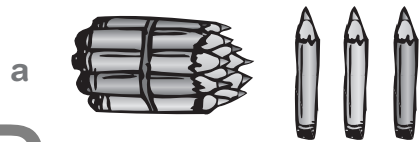


tens



tens

5 Write the number.




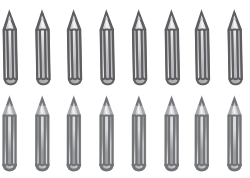
Sample Pages

Progress test 2 (continued)



6 Is this group odd or even?

Write the total number

a 

b 




7 Complete the number sentence.

a  and 

$8 + 6 =$


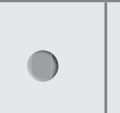
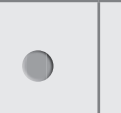

8 Count on to find.

a

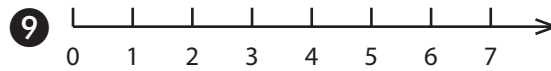
		
3	4	5

3 and 2 more =

b

			
6	7	8	9

6 and 3 more =



Use the number line to find:

a $3 + 2 =$

b $4 + 3 =$

c $3 + 3 =$

10 

a 18 take away 2 =

b $18 - 6 =$

Progress test 2 (continued)

11 a Count back 3 from 17.

17, , ,

b Count back 3 from 14.

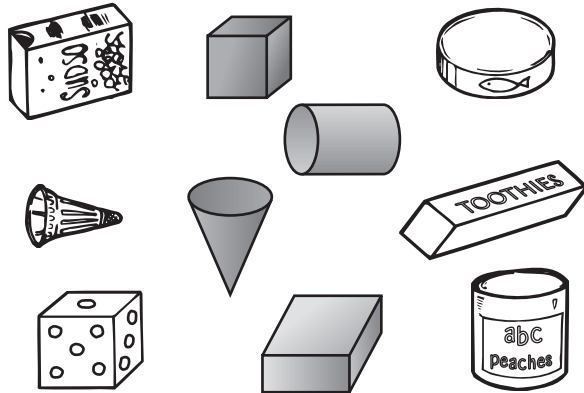
14, , ,

c Count back 3 from 11.

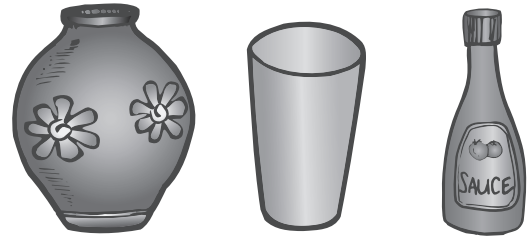
11, , ,

Measurement and space

12 Match each item to the 3D objects in the middle.



13 a Circle the container that will hold the least.



b

Jar	8 cups
Bottle	6 cups

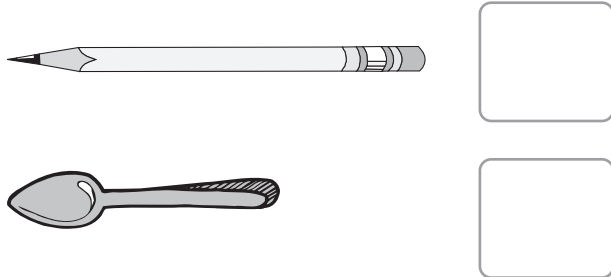
Which container has the smaller capacity?

How many more cups than the bottle can the jar hold?

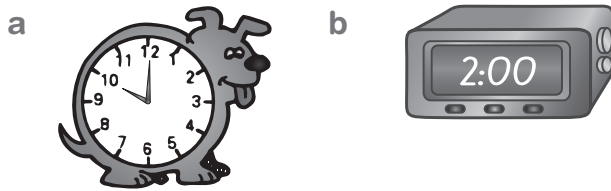
14 Name two objects you could use to measure the length of your desk.

Progress test 2 (continued)

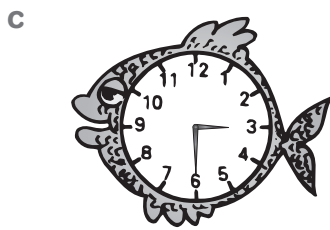
15 How many finger widths long are these pictures?



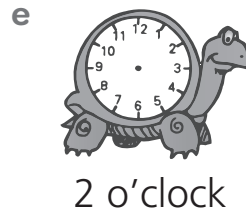
16 Write the time.



o'clock o'clock



Show the time.



Statistics and probability

17 Use the graph to answer the questions.

Fruit eaten				

a Which fruit was eaten the most?

b How many were eaten?

c How many pieces were eaten altogether?

Notes and answers for Progress test 2

Objective

- Diagnose weaknesses for future treatment.

Follow-up

- Any weakness discovered should be treated. Copies of Student Book pages are cross-referenced for follow-up.
- Questions and Student Book pages are cross-referenced on the Remediation records: Progress tests pages.
- A record of each student's progress can be kept using the Remediation records: Progress tests pages (see page 133).
- The content of the tests should be revised and reinforced throughout the year where possible. When teaching new concepts and skills, it is important to build on previously known work.

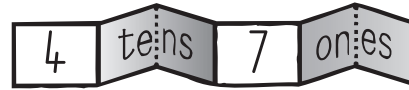
Question topic cross-reference

- | | | |
|----|----------------------------|---------------|
| 1 | Whole numbers | p 22 |
| 2 | Whole numbers | pp 23, 24 |
| 3 | Whole numbers | p 24 |
| 4 | Whole numbers | pp 22, 23 |
| 5 | Whole numbers | pp 39, 42 |
| 6 | Whole numbers | p 30 |
| 7 | Addition | p 31 |
| 8 | Addition | pp 34, 35 |
| 9 | Addition | pp 46, 47 |
| 10 | Subtraction | pp 26, 27, 43 |
| 11 | Subtraction | p 43 |
| 12 | 3D objects | pp 28, 29 |
| 13 | Internal volume / capacity | pp 44, 45 |
| 14 | Length | pp 40, 41 |
| 15 | Length | pp 32, 33, 40 |
| 16 | Time | pp 36, 37 |
| 17 | Graphs | pp 25 |

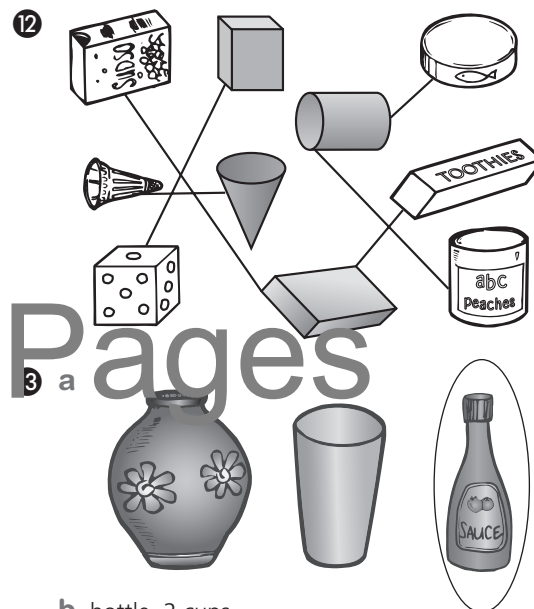
Progress test 2 answers

- 1 a Estimates will vary. A good estimate will be close to 40.
 b Groups of 10 ice creams will be circled.
 c 4 tens will be circled.
- 2 10, 20, 30, 40, 50, 60, 70, 80, 90

- 3 a 20 b 90 c 50
 4 a 6 tens b 8 tens
 5 a 13 b 27
 c



- 6 a odd, 9 b even, 16
 7 14
 8 a 5 b 9
 9 a 5 b 7 c 6
 10 a 16 b 12
 11 a 17, 16, 15, 14 b 14, 13, 12, 11
 c 11, 10, 9, 8



- 3 a
- b bottle, 2 cups
- 14 Answers will vary. Some answers include blocks, books, handspans, pencils or glue sticks.
- 15 Answers will vary.
- 16 a 10 o'clock b 2 o'clock
 c 3 thirty, half past 3 or 3:30
 d 11 thirty, half past 11 or 11:30



Progress retest 2

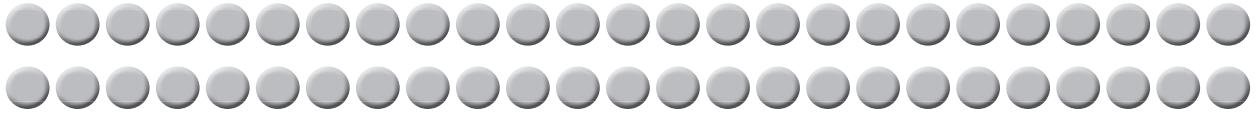
Name:

Number and algebra

1 a Estimate how many counters you can see.

b Circle groups of 10.

c How many tens did you circle?



2 90, 80, 70,

, , , , ,

3 Write the number for:

a thirty

b eighty

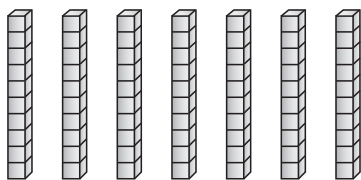
c forty

4 Count the groups of ten.

a

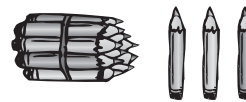

 tens

b

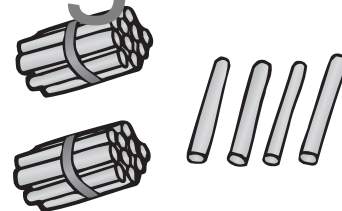

 tens

5 Write the number.

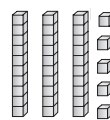
a



b



c



d

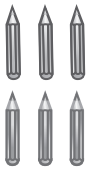


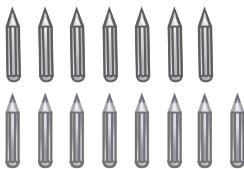
Sample Pages

Progress retest 2 (continued)

6 Is this group odd or even?

Write the total number.

a 

b 




7 Complete the number sentence.



$5 + 7 = \square$





8 Count on to find.

a

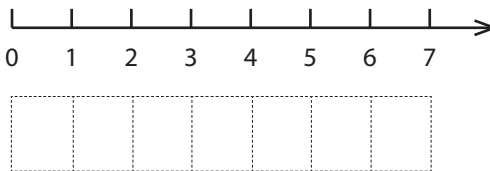
		
5	6	7

5 and 2 more =

b

			
4	5	6	7

4 and 3 more =

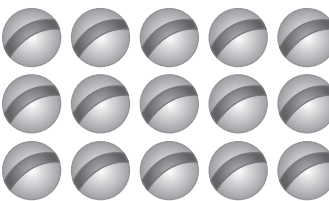
9 

Use the number line to find:

a $5 + 1 = \square$

b $2 + 2 = \square$

c $5 + 2 = \square$

10 

a 15 take away 3 =

b $15 - 5 = \square$

Progress retest 2 (continued)

11 a Count back 3 from 19.

19, , ,

b Count back 3 from 15.

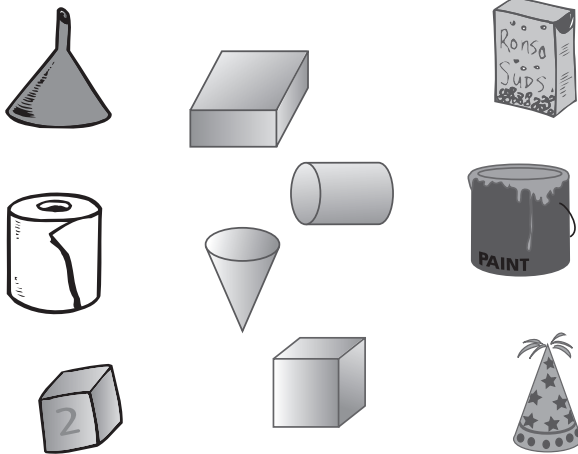
15, , ,

c Count back 3 from 13.

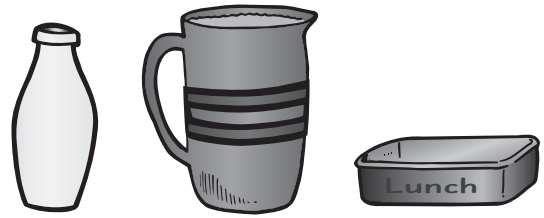
13, , ,

Measurement and space

12 Match each item to a 3D object in the middle.



13 a Circle the container that will hold the most.



b

Vase	5 cups
Glass	2 cups

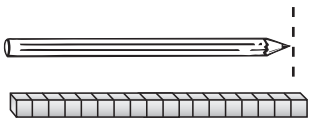
Which container has the smaller capacity?


How many more cups than the glass can the vase hold?

14 Name two objects you could use to measure the length of your pencil case.


Progress retest 2 (continued)


15 How many ones blocks are the same length as these pencils?

a 

b 

16 Write the time.


a  o'clock

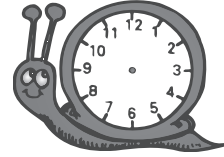
b  o'clock

c 

d 


Show the time.


e  3 o'clock


f  half past 3

Statistics and probability

17 **Stickers given**

Rachel 

Luke 

Damian 

 = one sticker

a How many stickers was Luke given?

b How many stickers were given altogether?

c Who was given that most stickers?

d How many more stickers than Rachel did Luke get?

e How many more stickers than Damian did Luke get?

Notes and answers for Progress retest 2

Objective

- Diagnose weaknesses for future treatment.

Follow-up

- Any weakness discovered should be treated. Copies of Student Book pages are cross-referenced for follow-up.
- Questions and Student Book pages are cross-referenced on the Remediation records: Progress retests pages.
- A record of each student's progress can be kept using the Remediation records: Progress retests pages (see page 159).
- The content of the tests should be revised and reinforced throughout the year where possible. When teaching new concepts and skills, it is important to build on previously known work.

Question topic cross-reference

- | | | |
|----|----------------------------|---------------|
| 1 | Whole numbers | p 22 |
| 2 | Whole numbers | pp 23, 24 |
| 3 | Whole numbers | p 24 |
| 4 | Whole numbers | pp 22, 23 |
| 5 | Whole numbers | pp 39, 42 |
| 6 | Whole numbers | p 30 |
| 7 | Addition | p 31 |
| 8 | Addition | pp 34, 35 |
| 9 | Addition | pp 46, 47 |
| 10 | Subtraction | pp 26, 27, 43 |
| 11 | Subtraction | p 43 |
| 12 | 3D objects | pp 28, 29 |
| 13 | Internal volume / capacity | pp 44, 45 |
| 14 | Length | pp 40, 41 |
| 15 | Length | pp 32, 33, 40 |
| 16 | Time | pp 36, 37 |
| 17 | Graphs | p 25 |

Sample Pages

Progress retest 2 answers

- 1 a Estimates will vary. A good estimate will be close to 50.
 b Groups of 10 counters will be circled.
 c 5 tens will be circled.

2 90, 80, 70, 60, 50, 40, 30, 20, 10

3 a 30 b 80 c 40

4 a 4 tens b 7 tens

5 a 26 b 24



d 68

6 a even, 6 b odd, 15

7 12

8 a 7 b 7

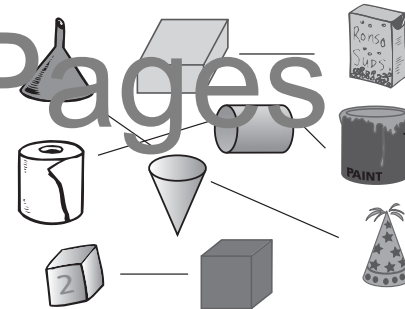
9 a 6 b 4 c 7

10 a 12 b 10

11 a 19, 18, 17, 16 b 15, 14, 13, 12

c 13, 12, 11, 10

12



13 a



b glass, 3 cups

14 Answers will vary. Answers could include blocks, erasers, counters or paperclips.

15 a 17 (blocks) b 8 (blocks)

16 a 7 o'clock b 4 o'clock

c 1 thirty, half past 1 or 1:30

d 5 thirty or half past 5

e



f



17 a 8 (stickers) b 18 (stickers) c Luke

d 1 (more sticker) e 5 (more stickers)



Sample Pages

Mentals

STAGE 1

1

Alan McSeveny

Rachel McSeveny

Diane McSeveny-Foster

Introduction

Using the Mentals Books

Each unit of a Mentals Book is programmed to review content from the previous two units of the Student Books. For example, Signpost Mentals Book Unit 5 can be used to review Signpost Student Book Units 3 and 4 while the Student Book Unit 5 is being taught. Unit 5 from both books should be completed in the same week.

Presentation

- The content of the strands Number and algebra, Measurement and space, and Statistics and probability is revised.
- Essential number skills and language are given a high profile. These will appear in most units.

ID cards

- The ID cards on pages 4 and 5 review important terms addressed at Year 1 level.
- These cards can be used over and over again to improve and consolidate understanding.

Mixed-topic questions

The units present questions in a mixed-topic format.

- This is essential for thorough understanding and continuous review.
- It will allow the teacher to discover weaknesses that could otherwise pass unnoticed.
- The approach reflects real life – similar questions do not often occur together.
- It provides a real test of understanding.

If you do not use a Student Book

This book will be invaluable to those who do not use a Student Book, as it ensures both thorough coverage and constant review of the syllabus content.

Multiple-choice questions

The multiple-choice questions on page 70 introduce a variety of question types.

Sample Pages



- The headers on each double-page spread provide an opportunity for discussion. Suggestions on how to use them in the classroom are given on page 3.

- Cartoons make mathematics more appealing.

- Two lizards are hidden on each page for students to find.

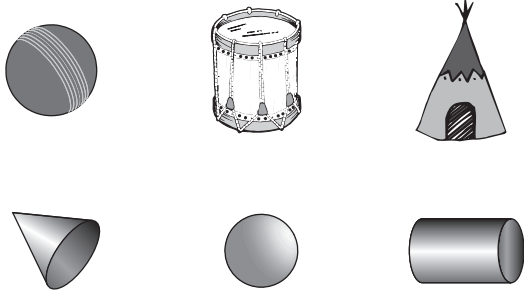
- The third section of each unit sometimes contains counting exercises in the border.

4:1 Match the shapes. Write 3 different sums. 10 take away 5 equals. Colour 1 blue and 3 yellow. 7 boats take away 3. What number is one more than? The number after 16. The number before 20.

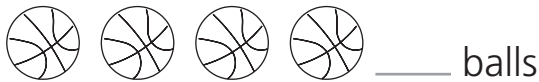
4:2 What day is it today? Write the number that comes before. Fill in the analog times on these clock faces. Add each row in these number bond houses.



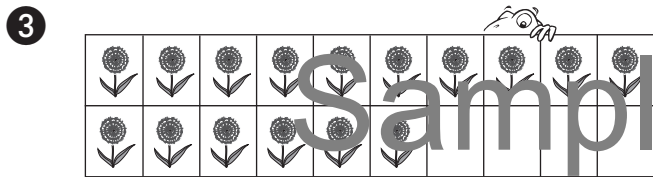
1 Match the shapes.



2 Colour 1 blue and 3 yellow.



_____ balls

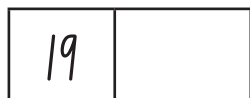
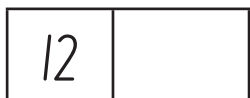


_____ and _____ = _____



7 boats take away 3 = _____

5 What number is one more than?



6 The number after 16. _____

The number before 20. _____

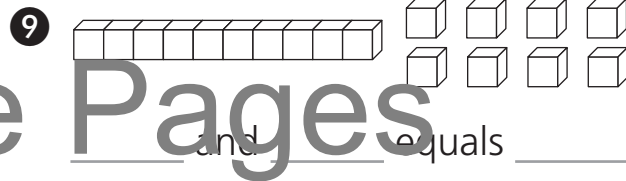
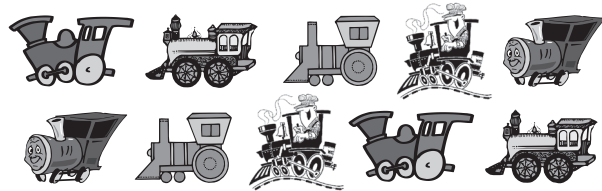
7 Write 3 different sums.

_____ + _____ = 7

_____ + _____ = 7

_____ + _____ = 7

8 10 take away 5 equals _____.

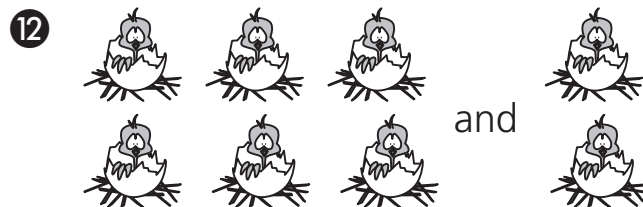


10 This clock shows

_____ o'clock.



11 Name something longer than your arm.



_____ + _____ = _____

4:2



+



=

1 What day is it today? _____

2 Write the number that comes before:



	7
--	---

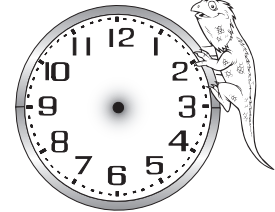
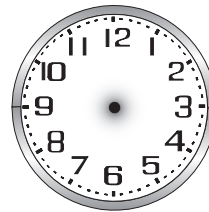
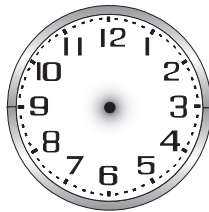
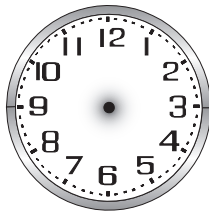
	10
--	----

	17
--	----

	20
--	----



3 Fill in the analog times on these clock faces.



12:00

4:00

9:00

2:00

4:3



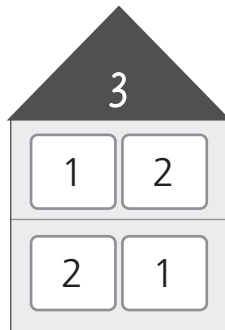
+



=

Sample Pages

1 Add each row in these number bond houses.



= _____

= _____



= _____

= _____

= _____



= _____

= _____

= _____

= _____





- 1 The number after 17. _____
The number after 14. _____

- 2 What is the time?



_____ o'clock



_____ o'clock

- 3 Fill in the missing numbers.

14, _____, 16, _____, 18

- 4 Write three different sums.

_____ + _____ = 9

_____ + _____ = 9

_____ + _____ = 9

- 5 Write the numbers in order, from smallest to biggest.

a

4,	8,	2,	6
----	----	----	---

_____, _____, _____, _____

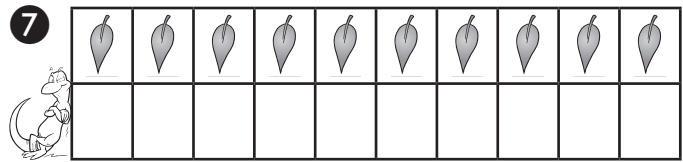
b

7,	6,	8,	5
----	----	----	---

_____, _____, _____, _____

- 6 Count back by ones.

17, 16, _____, _____, _____



10 and 2 is _____.

10 and 3 is _____.

10 and 5 is _____.

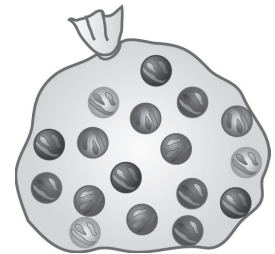
- 8 Write the missing numbers.

	13				8	
--	----	--	--	--	---	--

- 9 Estimate, then count the number of marbles.

Guess = _____

Count = _____



- 10 Draw a triangle to the left of this square.



Sample Pages

5:2



boats

1 Write the missing numbers.

		3				7		9	10
11					16			19	20

2 Write these numbers in order, starting with the smallest.

12, 10, 13, 11 _____, _____, _____, _____



3 Complete each tower so the two numbers add to make 10.

9	6	5	3	1	8	2	4

Sample Pages

5:3



1 Add each row in these number bond houses.

6

1	5	=	_____
2	4	=	_____
3	3	=	_____
4	2	=	_____
5	1	=	_____

7

1	6	=	_____
2	5	=	_____
3	4	=	_____
4	3	=	_____
5	2	=	_____
6	1	=	_____

8

1	7	=	_____
2	6	=	_____
3	5	=	_____
4	4	=	_____
5	3	=	_____
6	2	=	_____
7	1	=	_____



6:1



5 + = 6

1 What is the time?



___ o'clock



___ o'clock

2 Count back by ones.

12, 11, 10, _____, _____,

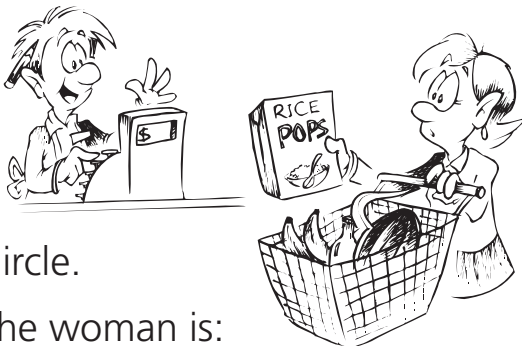
_____, _____,

Sample Pages

3 Complete each tower so the two numbers add to 10.

6	9	4	5

4



Circle.

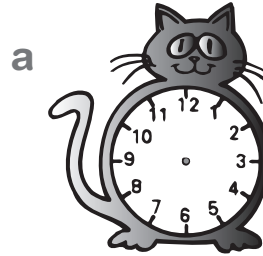
The woman is:

to the **right** / **left** of the man,

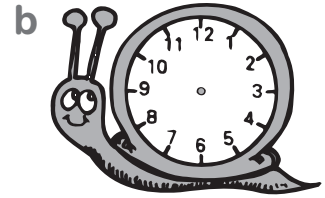
behind / **in front of** the trolley.

5 How many minutes in an hour? _____

6 Show these times.



half past 8



half past 2

7 Complete each label.



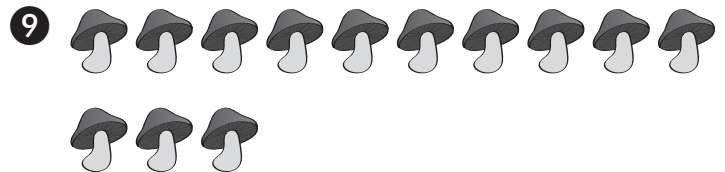
half past



half past

8 6:00 _____ o'clock

11:00 _____ o'clock



10 + _____ = _____

10 and _____ makes _____.

6:2



4 +

= 6



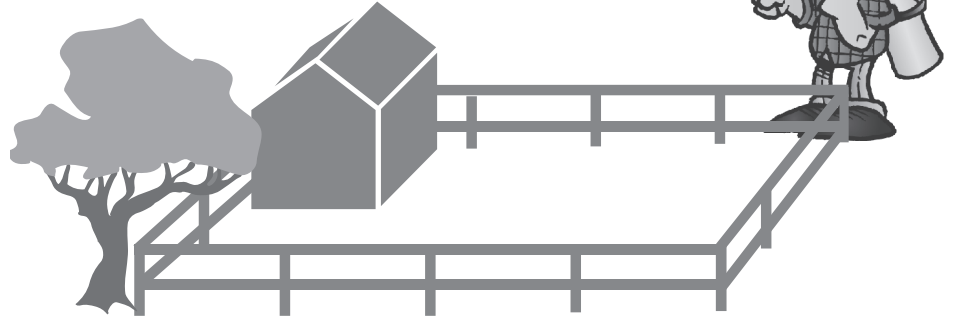
1 Draw one cow **inside** the paddock.

Draw two birds

above the tree.

Draw a dog

next to the tree.



2 $0 + 5 = \underline{\quad}$ $7 + 3 = \underline{\quad}$ $6 + 3 = \underline{\quad}$ $4 + 3 = \underline{\quad}$

$6 + 2 = \underline{\quad}$ $5 + 5 = \underline{\quad}$ $3 + 2 = \underline{\quad}$ $2 + 8 = \underline{\quad}$

3 Write these numbers in order, starting with the smallest.

19, 17, 15, 3, 11, **Sample Pages**, _____, _____, _____, _____



6:3



3 +

= 6



Draw to show: 1 $1 + 9 = \underline{\quad}$



2 $2 + 8 = \underline{\quad}$



3 $3 + 7 = \underline{\quad}$



4 $4 + 6 = \underline{\quad}$

