New wave

Number and Algebra

This book belongs to:

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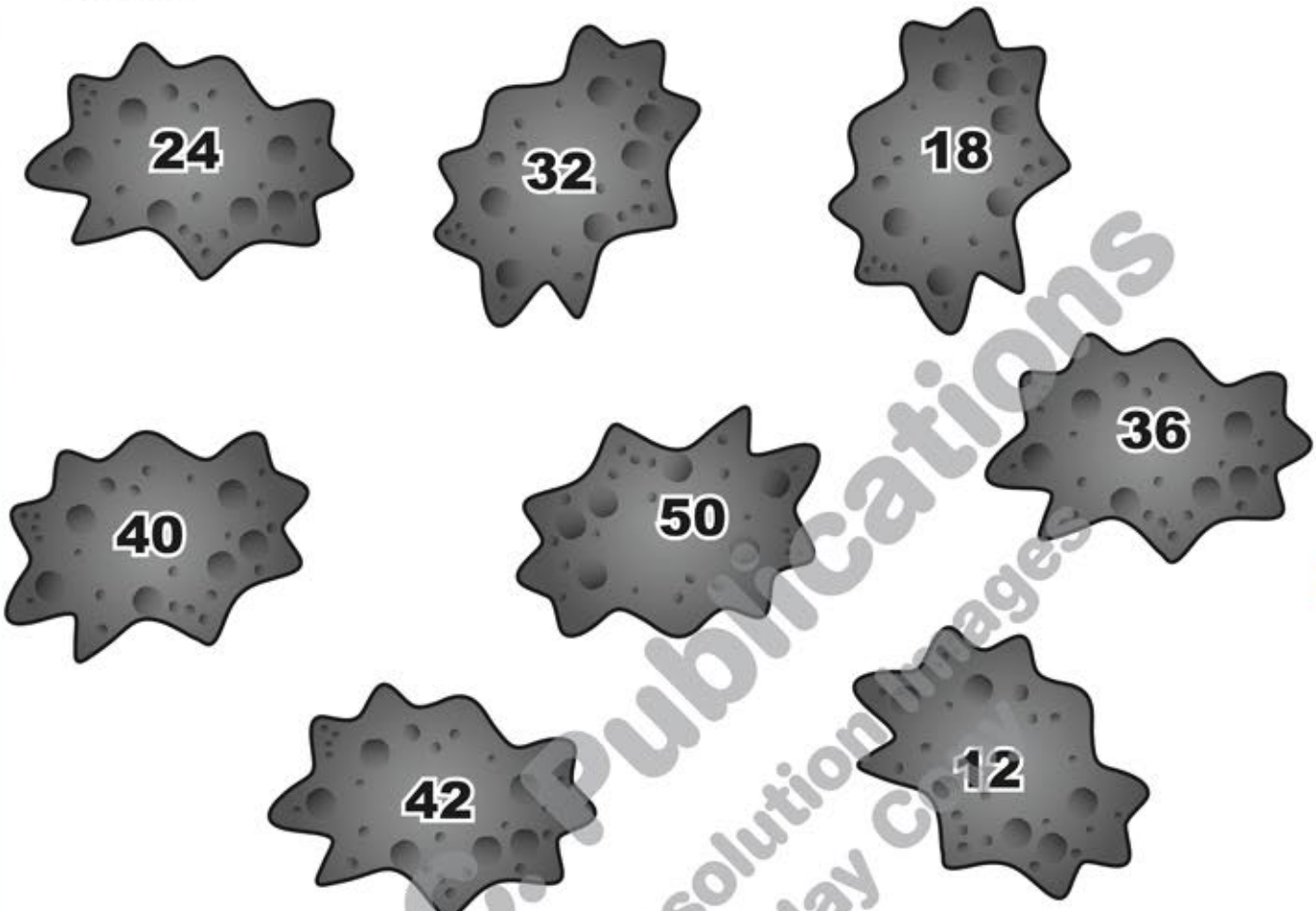
FOREWORD

The Australian Curriculum – Mathematics is organised around three content strands. Number and Algebra is the first strand. This strand is then arranged under four content areas – Number and place value, Fractions and decimals, Money and financial mathematics, and Patterns and algebra. Each content area is organised around a series of content descriptions and the pages of this book reflect these 12 descriptions. Many of the content descriptions are linked to each other and natural relationships between aspects of number will appear. Not all content descriptions are equally represented.

CONTENTS

COMPLETE THE FACTOR ASTEROIDS

1. Around the 'spikes' of each asteroid, record the factors for each nominated number.



2. Use divisibility rules to test the following statements. Mark a tick in the box if it is true and a cross if it is false.

	6	7	8	9
The number 1467 is a multiple of				
The number 9382 is a multiple of				
The number 1005 is a multiple of				
The number 3856 is a multiple of				
The number 2296 is a multiple of				
The number 9385 is a multiple of				
The number 7705 is a multiple of				
The number 1904 is a multiple of				
The number 4408 is a multiple of				
The number 3199 is a multiple of				

Content description: Identify and describe factors and multiples of whole numbers and use them to solve problems (ACMNA098) AC

THE LAWS OF DIVIDING – TRY 6

The law says, 'a number is divisible by 6 if the last digit is an even number and the sum of all the digits is divisible by 3'. Follow the example below to test out the law.

676 6 + 7+ 6 = 19 19 ÷ 3 = 6 and 1 remainder Therefore 676 is not divisible by 6	**958**	**1032**
559	**663**	**1105**
498	**376**	**580**
564	**869**	**642**
676	**834**	**426**

Content description: Identify and describe factors and multiples of whole numbers and use them to solve problems (ACMNA098) AC

THE LAWS OF DIVIDING – THIS TIME TRY 7

The law says, 'a number is divisible by 7 if the last digit when doubled and subtracted from the remaining digits gives a difference that is divisible by 7'. Follow the example below to test out the law.

959 9 x 2 = 18 95 – 18 = 77 77 ÷ 7 = 11 Therefore 959 is divisible by 7	**557**	**208**
572	**613**	**476**
445	**413**	**711**
398	**644**	**233**
406	**884**	**915**

Content description: Identify and describe factors and multiples of whole numbers and use them to solve problems (ACMNA098) AC

THE LAWS OF DIVIDING – TRY 8

The law says, 'a number is divisible by 8 if the sum of the last three digits is divisible by 8'. Follow the example below to test out the law.

583 5 + 8 + 3 = 16 16 ÷ 8 = 2 Therefore 583 is divisible by 8	**958**	**1032**
556	**663**	**1107**
3498	**1376**	**8580**
2565	**3844**	**7646**
379	**834**	**426**

Content description: Identify and describe factors and multiples of whole numbers and use them to solve problems (ACMNA098) AC

THE LAWS OF DIVIDING – TRY IT WITH 9

The law says 'a number is divisible by 9 if the sum of all the digits is divisible by nine'. Follow the example below to test out the law.

676 6 + 7+ 6 = 19 19 ÷ 9 = 2 and 1 remainder Therefore 676 is not divisible by 9	**958**	**1032**
559	**663**	**1105**
498	**376**	**580**
564	**869**	**642**
676	**834**	**426**

Content description: Identify and describe factors and multiples of whole numbers and use them to solve problems (ACMNA098) AC

THE MYSTERY OF MULTIPLES

Pattern	Missing number is ...	Counting by multiples of ...
45, 40, 35, _____, 25		
24, 32, 40, _____, 56		
21, 28, 35, _____, 49		
45, 54, _____, 72, 81		
18, 24, 30, _____, 42		
32, 36, 40, 44, _____		
90, 85, 80, _____, 70		
33, 44, _____, 66		
36, 27, 18, _____		
88, 80, 72, _____		
54, 60, 66, 72, _____, 84		
84, 77, 70, _____		
60, 64, 68, _____, 76		
140, 135, 130, _____, 120		
156, 152, _____, 144		
132, 138, 144, _____, 156		
104, 112, 120, _____,		
91, 98, 105, _____, 119		
126, 135, 144, 153, _____, 171		

Who am I?

I am a multiple of **6** and appear as the third after **54**. I am _____

I am a multiple of **7** and appear as the fourth after **28**. I am _____

I am a multiple of **5** and appear as the fifth after **45**. I am _____

I am a multiple of **8** and appear as the third after **32**. I am _____

I am a multiple of **9** and appear as the fifth after **27**. I am _____

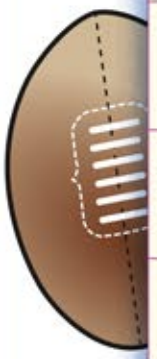
I am a multiple of **3** and appear as the seventh after **21**. I am _____

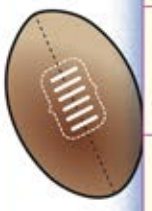
Content description: Identify and describe factors and multiples of whole numbers and use them to solve problems (ACMNA098) AC

HANDBALL TARGET

1. In a school Aussie Rules handball tournament 10 players were allowed 2 rounds where they handballed 5 balls each time at the scoring target. Below are the round 1 and 2 scores. Your job is to write down possible combinations that equal that score.

Name	Round 1 and 2	Possible scorecards
Aaron	41	
	40	
Benjamin	37	
	46	
Claire	34	
	38	
Dana	30	
	35	
Edwina	43	
	40	
Freddie	38	
	41	
Helen	44	
	40	
Indya	45	
	41	
Jaxon	36	
	37	
Kyle	49	
	38	





Content description: Identify and describe factors and multiples of whole numbers and use them to solve problems (ACMNA098) AC

ROUND 'EM UP AND ROUND 'EM OFF

Follow the instructions below and round off to the nearest ten or hundred.

Be very careful!

Number	Rounded off to the nearest ten	Number	Rounded off to the nearest ten
746		774	
789		268	
178		91	
727		672	
641		687	
779		277	
107		272	
122		891	
581		774	
678		659	
896		996	
1233		6573	
6677		7104	

Number	Rounded off to the nearest hundred	Number	Rounded off to the nearest hundred
567		7714	
6634		2655	
7802		9223	
5693		6872	
5822		4457	
5801		1277	
4456		2712	
2978		8491	
1109		7748	
1288		6590	
3451		8755	
4458		6903	
1129		4464	

Content description: Use estimation and rounding to check the reasonableness of answers to calculations (ACMNA099)

PETE THE PLUMBER ROUNDS OFF

Follow the instructions below and round off Pete's jobs to the nearest ten dollars and nearest hundred dollars. The first one has been done.

Jobs done	Actual cost	Rounded to nearest $10	Rounded to nearest $100
Jan #1	$1234	$1230	$1200
Jan #2	$1566		
Jan #3	$2238		
Jan #4	$1849		
Jan #5	$2902		
Jan #6	$1229		
Jan #7	$1185		
Total			
Feb #1	$2295		
Feb #2	$2817		
Feb #3	$2093		
Feb #4	$2473		
Feb #5	$2109		
Feb #6	$2248		
Feb #7	$2871		
Total			
Mar #1	$2119		
Mar #2	$2321		
Mar #3	$3067		
Mar #4	$3107		
Mar #5	$3902		
Mar #6	$3188		
Mar #7	$3029		
Total			

How useful is the rounding off method for Pete in these three months?

Content description: Use estimation and rounding to check the reasonableness of answers to calculations (ACMNA099)

