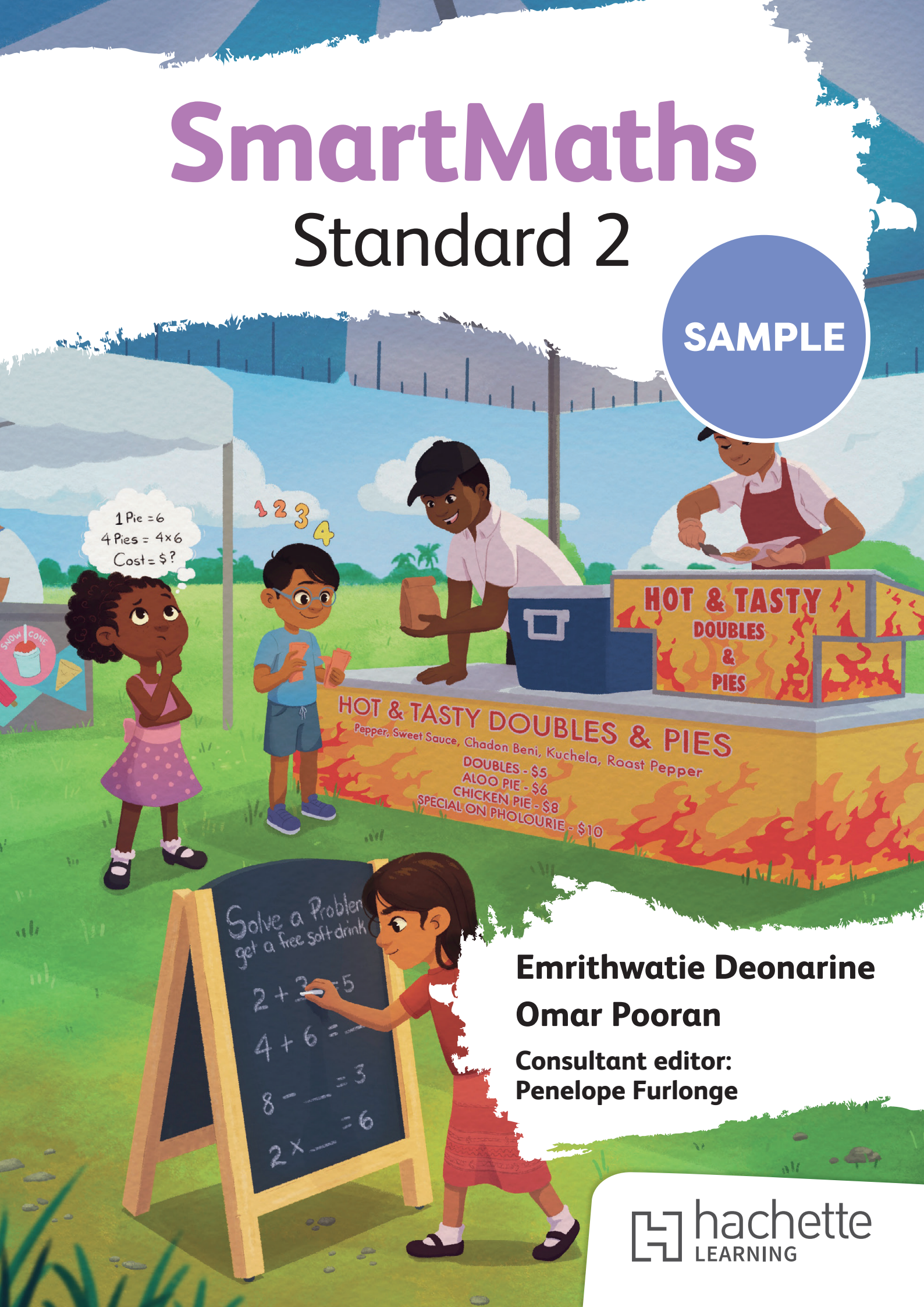


SmartMaths

Standard 2

SAMPLE



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Stage	Pupil's book	Boost eBook
SmartMaths Infant 1	9781036012052	9781036017552
SmartMaths Infant 2	9781036012069	9781036017569
SmartMaths Standard 1	9781036012076	9781036017576
SmartMaths Standard 2	9781036012083	9781036017583
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SmartMaths Boost Teacher's Guide		9781036013417

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How to use this book

This Student's Book meets the content, skills, dispositions, outcomes and elaborations specified for Standard 2 in the primary curriculum for Trinidad and Tobago. It aims to make sure that, at the end of Standard 2, each student will be well prepared for the transition to Standard 3.

The mathematics curriculum is divided into four broad strands: Number, Geometry, Measurement and Statistics. Chapters are colour-coded to show which strand they belong to. The content for each strand appears in the same order in which it appears in the curriculum.

More information on curriculum coverage can be found in the 'Curriculum mapping' document on our website.


SECTION 3
Chapter 15 Mass and weight

In this chapter, you will:


- find out the mass / weight of objects using non-standard and standard units
- explain the need for a standard unit of measure for mass / weight
- approximate mass / weight to the nearest kilogram
- explore conservation of mass / weight of objects
- compare and order objects according to mass / weight.

Starting point

1 Circle the **heavier** object.



2 How can you find the **weight** of the cabbages in the basket?



Key maths idea


Measure mass

Mass refers to how heavy or light an object is. A feather is light, but a book is heavy. Did you know that we can find out how heavy or light an object is by weighing the object?

Let us find out the mass of the avocado.

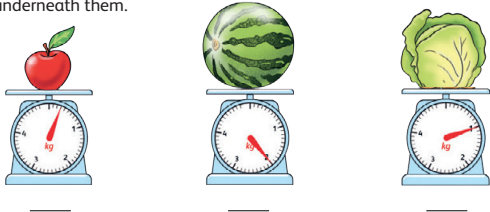
The avocado weighs about 2 small bottles of water.

When the scale is **balanced**, we know the **weight** of the avocado.



Key words
mass
balanced
weight

1 Look at each set of objects and put them in **ascending** order of weight by writing 1, 2 and 3 underneath them.



— — —

At the start of each chapter, you will find an **Objectives** box that lists key content and skills.

The **Starting point** activity stimulates discussion and curiosity.

Eye-catching photographs and illustrations stimulate students' interest.

Key maths idea boxes explain concepts and provide examples.

Key words boxes highlight the key vocabulary that students will need to know.

Numbered questions provide practice tasks for students.

As students work through the chapters, they will find a range of features, including:

- **Mental maths:** This feature includes short questions for students to work out mentally (in their heads).
- **Problem solving:** This feature gives students a chance to apply their mathematical skills to problem-solving scenarios using the strategies they have learnt.
- **Hints:** This feature supplies additional background information, reminders or links to concepts that have appeared elsewhere.

Problem solving ?

Use a number sentence

300 kilograms of fish were sold over the weekend. On Saturday, 160 kilograms were sold. How many kilograms of fish were sold on Sunday?

Steps:

- 1 **Read:** We know how much fish was sold over the weekend. We also know how much was sold on Saturday.
- 2 **Plan:** Write a subtraction sentence or work backward.
- 3 **Solve:** Subtract the amount from Saturday from the total for the two days.
 $300 \text{ kg} - 160 \text{ kg} = 140 \text{ kg}$
- 4 **Check:** Use the inverse operation to check or work backward:
 $160 \text{ kg} + 140 \text{ kg} = 300 \text{ kg}$

Each chapter ends with a **Review** page, which comprises:

- **Key terms and concepts:** vocabulary questions that check students understand the main terms and concepts presented in the chapter.
- **Quick check:** short questions that revise the mathematics covered through the chapter.
- **Challenge and investigate:** long questions or activities that can extend beyond the main curriculum for students who need additional challenge or stretch.

Review: Mass and weight

Review: Mass and weight

Key terms and concepts

- 1 **a** An example of a scale used for measuring mass is the _____.
- b** The _____ is the standard unit used for measuring mass.
- c** An example of a non-standard unit used for measuring mass is a _____.
- d** We can place objects in _____ and _____ order according to their weight.
- e** The _____ of an object does not change even if its shape changes.

Quick check

- 1 Circle the objects that are non-standard units used for measuring weight.



- 2 A measuring _____ can be used to find the weight of some items.

- 3 Which scale shows that the object is heavier than 1 kg? _____



Scale A



Scale B

- 4 Which standard unit (1 kg, $\frac{1}{2}$ kg or $\frac{1}{4}$ kg) is the most suitable for measuring:

- a** a lemon? _____ **b** a pineapple? _____

Challenge and investigate

Mass relay race

- 1 Your teacher will divide the class into teams. Take turns running to weigh items and recording their masses.
 - a** Organise them in **ascending** order.
 - b** Combine the masses you have recorded to find the total.
 - c** Share your findings with the class, naming the heaviest and lightest items.

Go to our website:

www.hachettelearning.com/mathematics/smartmaths-standard-2
for free access to the following:

- Additional content
- Answers
- Glossary
- Curriculum mapping

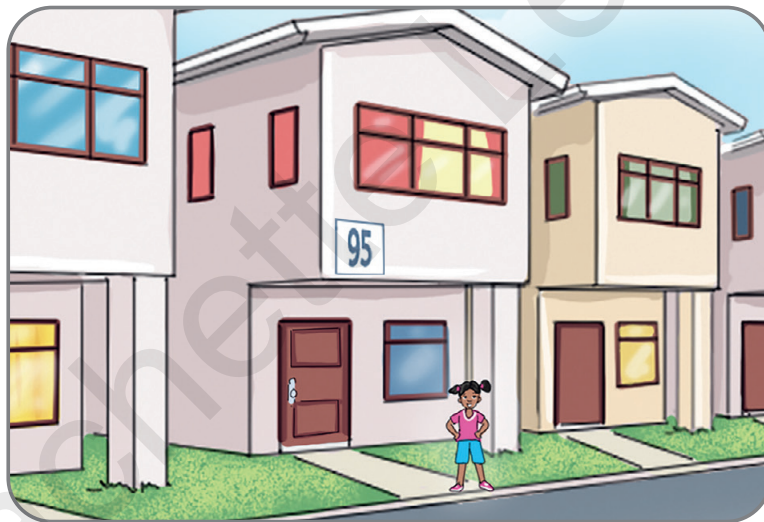
Chapter 1 Number concepts

In this chapter, you will:

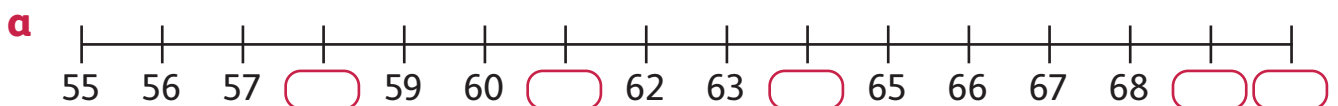
- count within 1000 in ascending and descending order
- skip count in ascending and descending order within a specified amount
- count objects in a set up to 1000
- connect numerals to quantities up to 1000.

Starting point

- 1 Look at the picture. It shows Mona's house number. Her house is in the middle of a street.
- a Write the number name of the number.



- b If someone visits a house five houses **after** Mona's house, what is that house's number?
- c Jabari visits the house that is ten houses **before** Mona's house. What is that house's number?
- 2 Fill in the missing numbers.



b 23, 24, _____

c _____, 14, 15

d _____, 70, _____

Counting to 1000

Key maths idea



To master counting from 0 to 1000, you must be able to recognise patterns in numbers and use them when counting.

Each multiple of ten (10, 20, 30, 40 and so on) comes immediately after a number that ends with the digit 9.

9, 10 39, 40 359, 360 819, 820

Each multiple of hundred (100, 200, 300, 400 and so on) comes immediately after a number that ends with the digits 99.

99, 100 199, 200 299, 300 999, 1000

Can you see any other patterns in the number chart?

101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200

1 Fill in the missing numbers.

a 49, _____

b 189, _____

c 299, _____

d 499, _____

e

208	209					214			
218			221					226	
				232					



g 575, 576, _____

h 458, _____, _____, _____

- 2** Jaden starts at 565 and counts forward 12 numbers on a number chart. What number does he stop at?

Counting forward and backward

Key maths idea

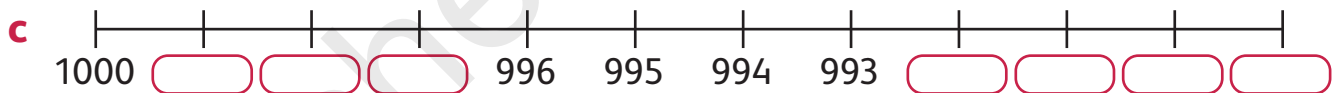
Use number charts to count forward from 101 to 200 and then backward from 200 to 101. Look at the patterns.

- 251, 252, 253, 254, 255
- 180, 179, 178, 177, 176
- 220, 218, 216, 214, 212
- 140, 137, 134, 131, 128

- 1** Fill in the missing numbers.

a

433	432				428	427	426		
423					418	417	416		414
				409	408				



- 2** Chin begins at 958 and counts backward 15 numbers using number charts. What number does he stop at?

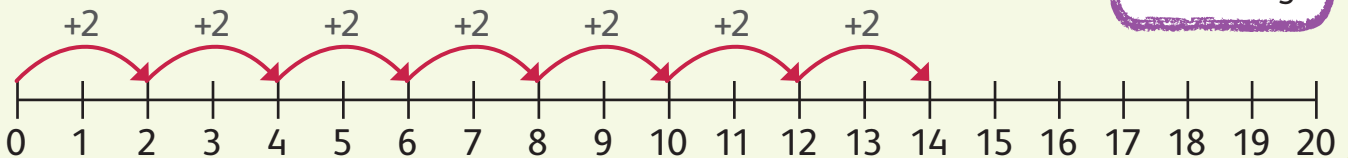
Skip counting

Key maths idea

Skip counting is when you count forward or backward by a number other than 1.

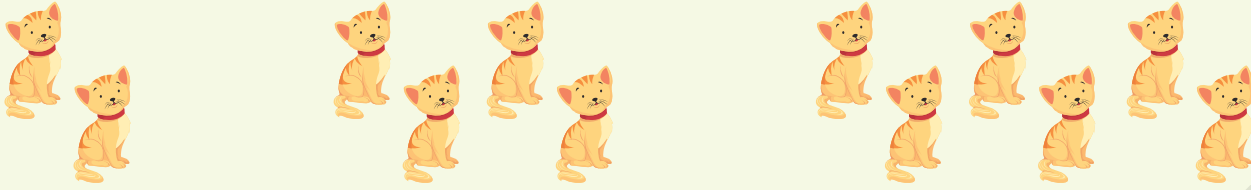
Skip counting forward is also known as skip counting in **ascending** order (smallest to largest).

Key words
skip count
ascending



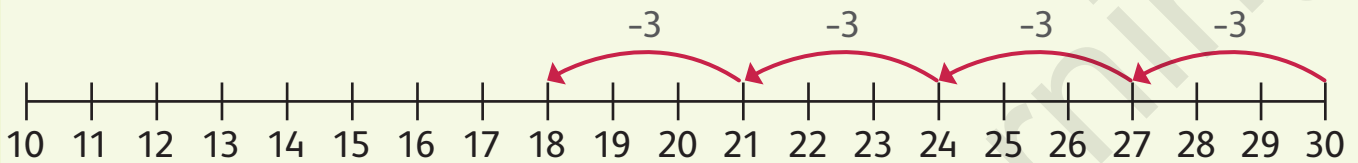
**(continued)**

To skip count in 2s in **ascending** order, we count: 2, 4, 6, 8, 10, 12, 14, ...

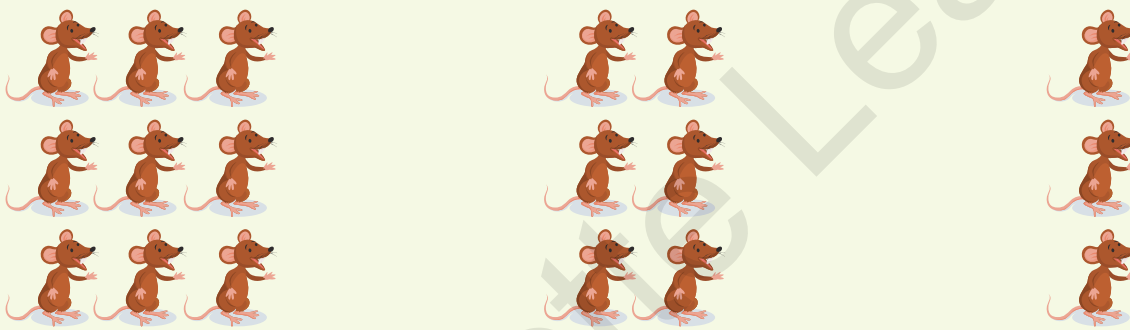


Skip counting backward is also known as skip counting in **descending** order (largest to smallest).

Key word
descending



To skip count in 3s in **descending** order, we count: 30, 27, 24, 21, 18, ...



1 Use the number chart to fill in the missing numbers on the next page.

101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200

a Skip count in **ascending** order in 5s:

105, _____, _____, _____, _____, _____, _____, _____, _____, _____

b Skip count in **ascending** order in 10s:

110, _____, _____, _____, _____, _____, _____, _____, _____, _____

2 Use the number chart to fill in the missing numbers.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

a Skip count in **descending** order in 2s: 30, _____, _____, _____, _____, _____, _____, _____, _____, _____

b Skip count in **descending** order in 3s:

36, _____, _____, _____, _____, _____, _____, _____, _____, _____

3 Fill in the missing numbers.



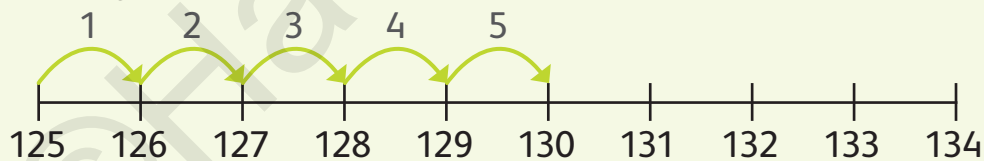
Mental maths

Key maths idea



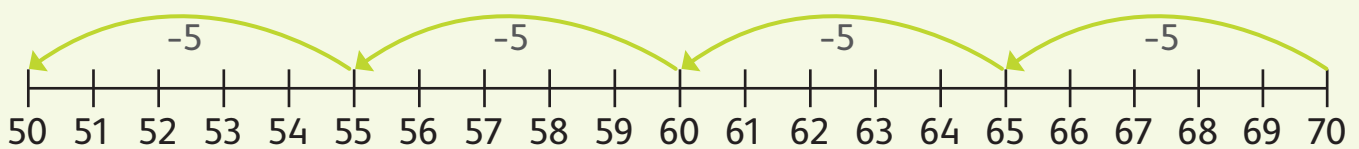
Counting on and backward; skip counting

Starting on 125, count **forward** 5 numbers. What is the last number we count?



The last number we count is 130.

Starting on 70, skip count **backward** in 5s four times. What is the last number we count?



The last number we count is 50.

- 1 Nikkita is counting. She starts at 372 and counts ten numbers **backward**. What is the last number she counts?
- 2 Start at 580 and count **forward** five numbers. Then, count **backward** two numbers. What is the last number you count?



Skip counting in 100s to 1000

Key maths idea

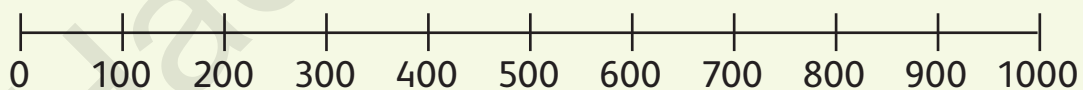


Counting in 100s helps us when we are dealing with \$100 in money and when we are measuring in centimetres and metres.

Look at the number chart. Do you notice any patterns?

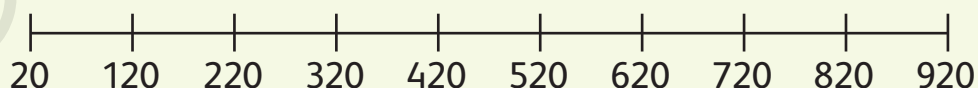
10	20	30	40	50	60	70	80	90	100
110	120	130	140	150	160	170	180	190	200
210	220	230	240	250	260	270	280	290	300
310	320	330	340	350	360	370	380	390	400
410	420	430	440	450	460	470	480	490	500
510	520	530	540	550	560	570	580	590	600
610	620	630	640	650	660	670	680	690	700
710	720	730	740	750	760	770	780	790	800
810	820	830	840	850	860	870	880	890	900
910	920	930	940	950	960	970	980	990	1000

This number line shows counting in 100s. Practise counting forward and backward in 100s.



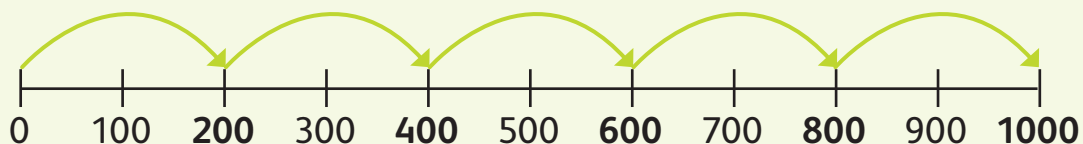
What patterns do you see?

Look at the number chart again. Can you see that we can count in 100s starting at 20?

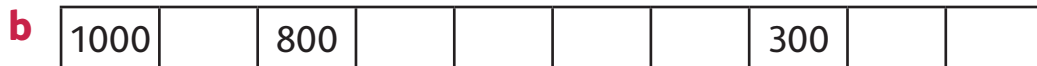


Skip counting in 200s

The number line shows skip counting in **ascending** order in 200s. What patterns do you see?



1 Fill in the missing numbers



d 100, _____, 300, _____, _____, _____, 700, 800, _____, 1000

e 50, 150, _____, 350, _____, 550, _____, 750, _____, _____

f 900, _____, 700, _____, _____, 400, _____, _____, _____



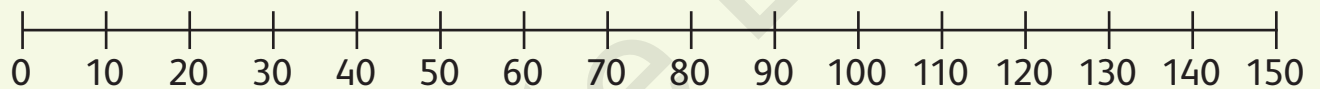
2 A park has 100 trees. 100 new trees are planted every year. How many trees will there be after four years?

Skip counting in 10s, 25s and 50s

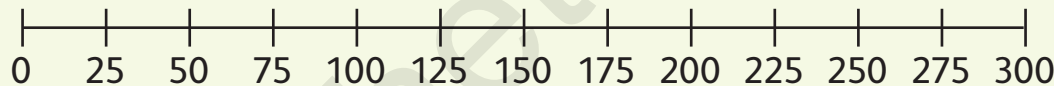
Key maths idea



The number line shows skip counting in ascending order in **10s**. What patterns do you see?



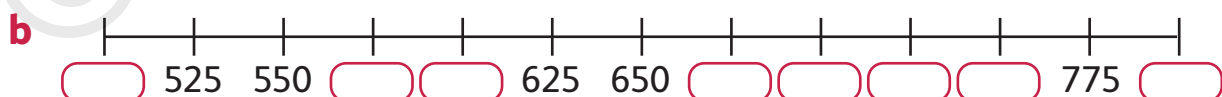
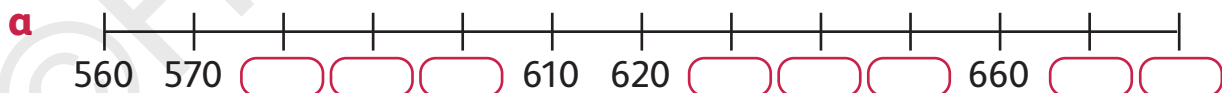
The number line shows skip counting in ascending order in **25s**. What patterns do you see?



The number line shows skip counting in ascending order in **50s**. What patterns do you see?



1 Fill in the missing numbers.



2 Gary earns \$25 each time he cuts a lawn. If he cuts two lawns this week, how much money will he earn?

Skip counting from any number

Key maths idea



We can skip count from any number.



Skip counting in ascending order in 2s from 17: 17, 19, 21, 23, 25, 27...

Skip counting in descending order in 2s from 25: 25, 23, 21, 19, 17, 15...

Skip counting in ascending order in 3s from 11: 11, 14, 17, 20, 23, 26...

Skip counting in descending order in 10s from 323: 323, 313, 303, 293, 283, 273...

When counting in **ascending** order by a number, we add that number to the previous number to get the next number.

Skip counting in ascending order in 5s from 7: 7, 12 (7 + 5), 17 (12 + 5)...

When counting in **descending** order by a number, we subtract that number from the previous number to get the next number.

Skip counting in descending order in 10s from 104: 104, 94 (104 - 10), 84 (94 - 10)...

1 Fill in the missing numbers.

a Skip count in **descending** order in 5s from 68.

68, _____, _____, _____, _____, _____

b Skip count in **descending** order in 10s from 705.

705, _____, _____, _____, _____, _____

c Skip count in **ascending** order in 100s from 164.

164, _____, _____, _____, _____, _____

d Skip count in **ascending** order in 2s from 13.

13, _____, _____, _____, _____, _____

e Skip count in **descending** order in 3s.

110							89		
-----	--	--	--	--	--	--	----	--	--

f Skip count in **ascending** order in 3s.

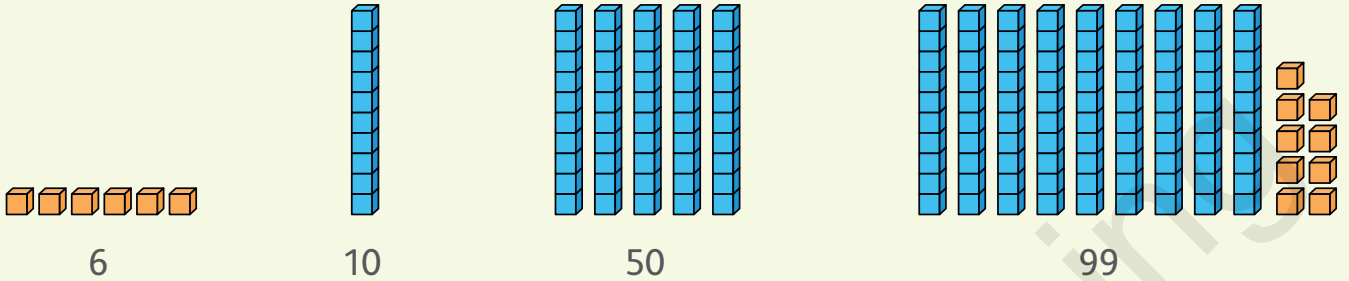


Counting numbers of objects in a set

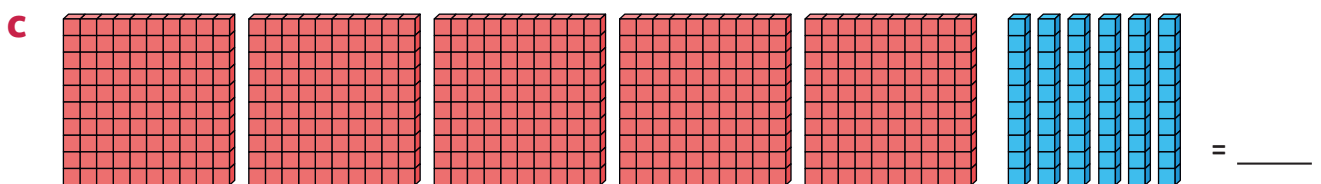
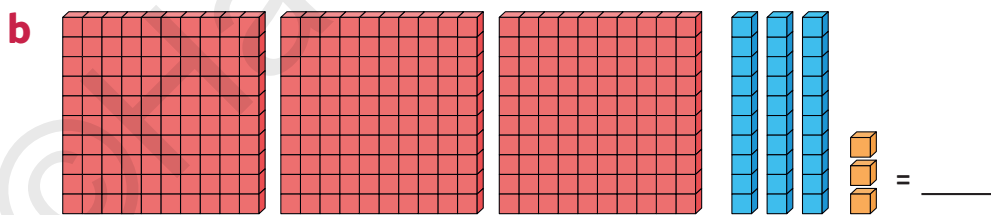
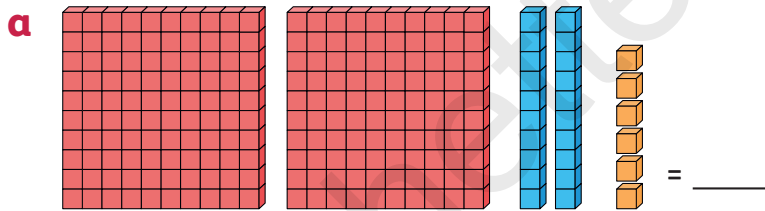
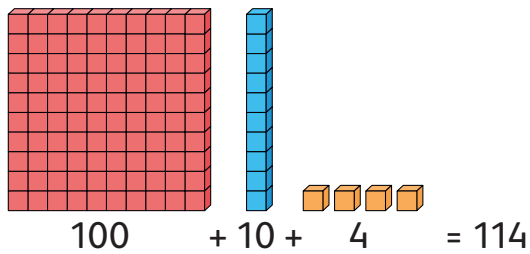
Key maths idea



We can count objects in a set once and write it as the number of objects.



1 Write the numbers that the pictures represent, for example:



Conservation of 50

Key maths idea



We can see the number 50 in lots of places.



Key words
benchmark
estimate



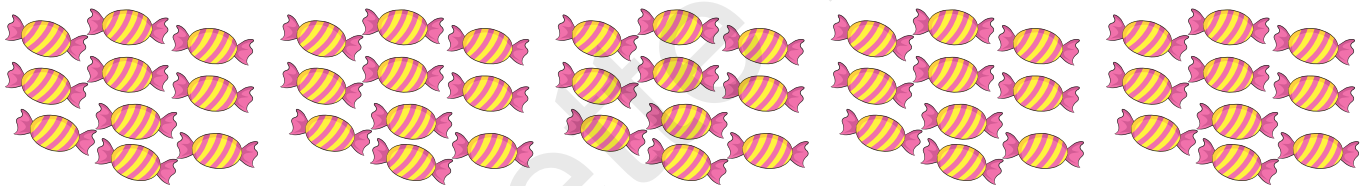
50 is a **benchmark** number.

Benchmark numbers are numbers that we use to compare or estimate other numbers or amounts.

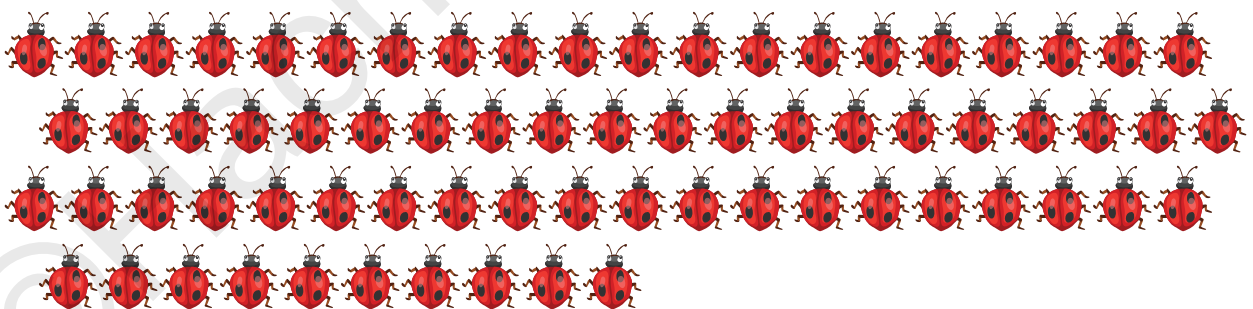
To **estimate** is to make a reasonable guess about the amount of something.

Search for half of 100 and you will find 50.
5 sets of 10 and 10 sets of 5 make fabulous fifty.

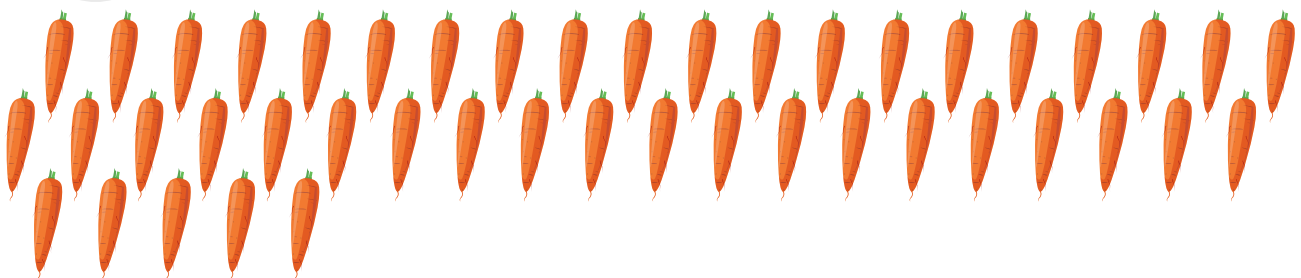
1 Use these 50 sweets to help you estimate whether the quantities are **more than** or **less than** 50. Circle your answer. Then check whether your answer is correct.



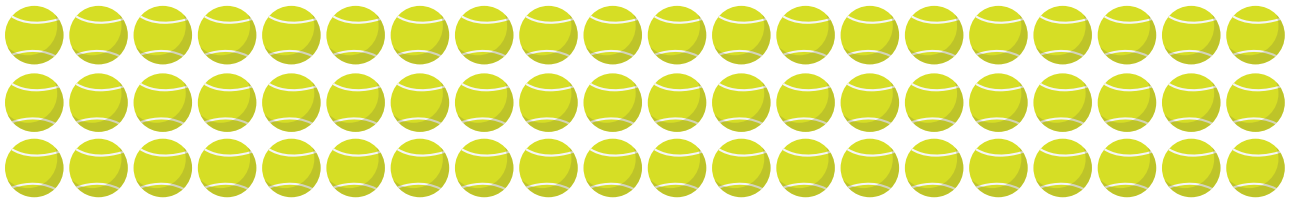
a More than 50 / Less than 50



b More than 50 / Less than 50



c More than 50 / Less than 50



Problem solving



Make an organised list

Lisa is planting tomato seedlings in her garden. She plants five seedlings in each row. How many seedlings will she plant if she completes six rows?

Steps:

- 1 **Read:** What do we know? Five seedlings in a row; six rows planted. Find how many there are in six rows.
- 2 **Plan:** Add five to the previous row.
- 3 **Solve:** Use an organised list.
- 4 **Check:** Verify the calculation: $5 + 5 + 5 + 5 + 5 + 5 = 30$

Method:

- 1st row = 5 seedlings
- 2nd row = 10 seedlings
- 3rd row = 15 seedlings
- 4th row = 20 seedlings
- 5th row = 25 seedlings
- 6th row = 30 seedlings

- 2 Tyrone plans to save \$10 every week. How much money will he save in five weeks?

Week 1 = \$10

Week 2 = _____

Week 3 = _____

Week 4 = _____

Week 5 = _____



- 3 Keshon is playing a game where he has to jump backward three spaces each go. He starts at space number 21.

What space number will Keshon land on after he jumps backward four times?

Jump 1 = 18 ($21 - 3$) Jump 2 = _____

Jump 3 = _____ Jump 4 = _____

Sequencing

Key maths idea



Number sequencing is arranging numbers in a specific order, such as counting forward or backward, or skip counting in ascending or descending order. It also involves numbers before, after and between other numbers.

To count forward in 1s, we count:

0, 1, 2, 3, 4, 5, 6...

To count backward in 1s, we count:

12, 11, 10, 9, 8, 7...

To skip count in ascending order in 2s, we count:

2, 4, 6, 8, 10, 12...

To skip count in descending order in 2s, we count:

14, 12, 10, 8, 6...

The number after 120 is:

120, **121**

The number before 830 is:

829, 830

The number between 499 and 501 is:

499, **500**, 501

1 Count **forward** in 1s starting with 245:

____, _____, _____, _____, _____, _____, _____

2 Skip count in **ascending** order in 5s starting with 195:

____, _____, _____, _____, _____, _____

3 Find the pattern and fill in the missing numbers.

a 149, _____, _____, 152, 153, _____

b 410, 409, _____, _____, 406, _____

c 600, 500, _____, _____, _____, 100

Bills and coins

Key maths idea



We can tell the amount of money we have by counting the bills and coins.



1 Count the bills and coins and write the value of the money.



2 Billy and Nigel each bought gifts. These are the bills they used for their purchases. Who spent **less** money?



Billy:



Nigel:



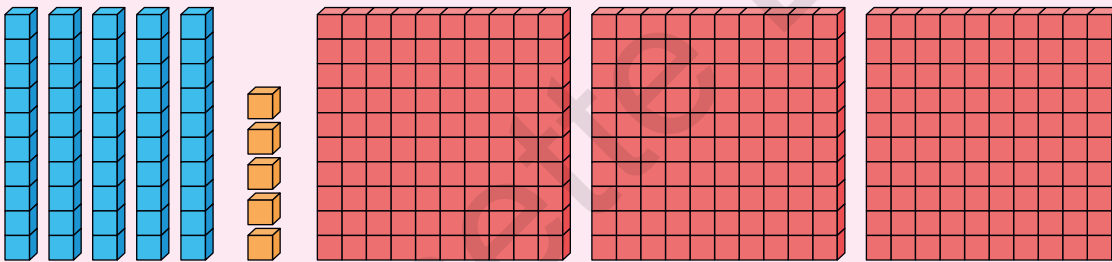
Review: Number concepts

Key terms and concepts

- 1 Fill in the blanks.
 - a _____ is when we count forward or backward by a number other than 1.
 - b We use _____ numbers to compare or estimate other numbers or quantities.
 - c To _____ is to make a reasonable guess about the quantity of something.
 - d Number _____ is arranging numbers in a specific order.

Quick check

- 1 Fill in the missing numbers.
 - a 105, 106, _____, 108, _____
 - b 50, _____, 48, _____, _____, 45
 - c 50, _____, 100, _____, 150, 175, 200
 - d 450, _____, _____, 447, _____, 445
- 2 What number does the picture show? Circle the answer: **553 / 355 / 535**



Challenge and investigate

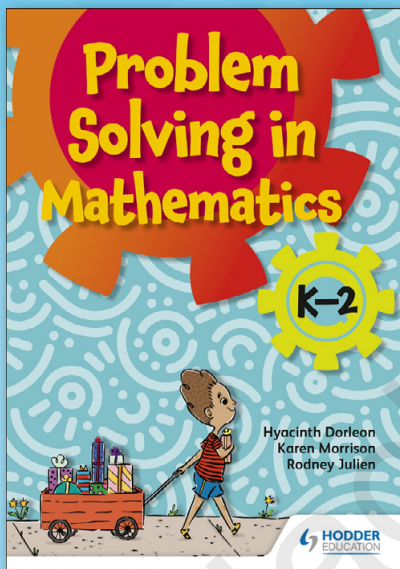
- 1 Keisha reads 25 pages of her book each day. She starts on Monday.
 - a How many pages will she read by the end of Wednesday?
 - b On what day will she have read 100 pages?
- 2 Tom saves \$10 every five days. How much money will he save in twenty days?



Problem Solving in Mathematics



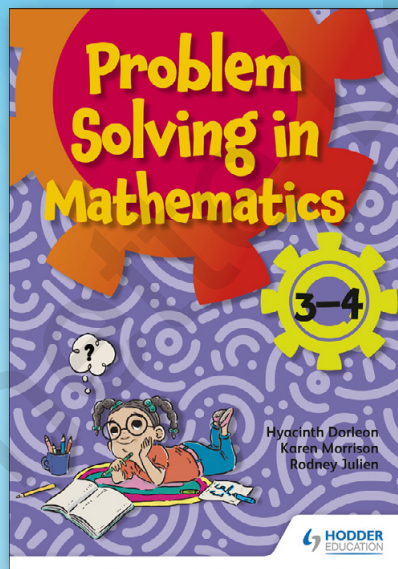
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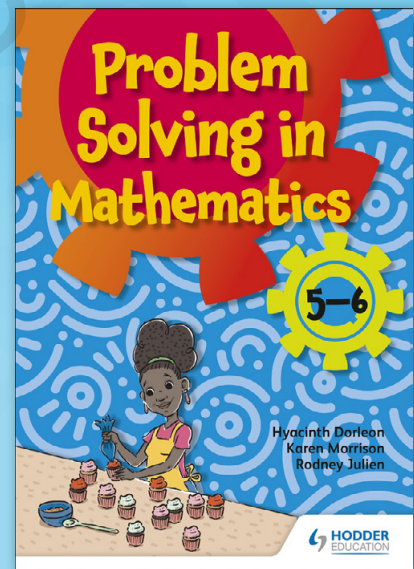
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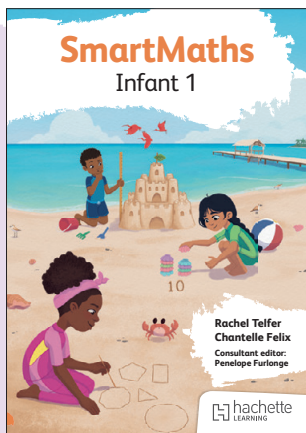
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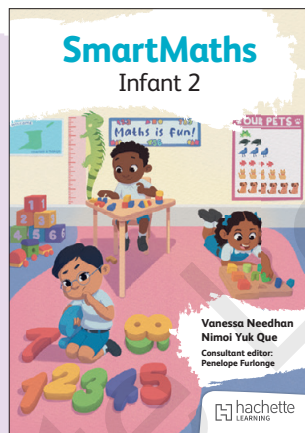


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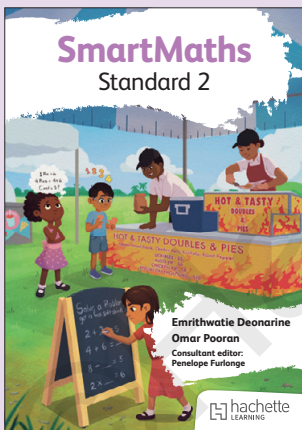
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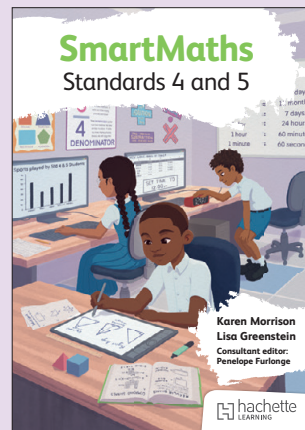
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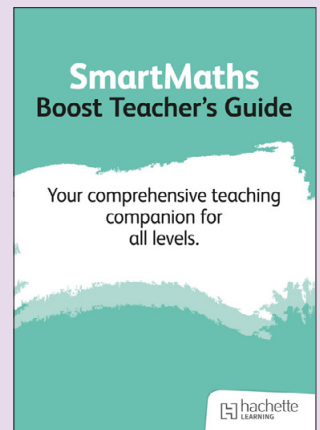
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