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This Practice Workbook is yours! Use it to see what you know and think about what you might need to work on.

Getting Started

Everything you learn builds on something you have experienced or learned before.

Take Your Time

- Don't rush. Not all math tasks take the same amount of time to complete.

What Might This Look Like?

- Use tools and materials to help you complete the tasks.
- Try "seeing the problem in your mind" to help you reason your way to a solution.

Try Your Best!

- Read over the tasks and think about questions you might have that would help you better understand them.
- Reflect on what you already know and use this information to help you complete the tasks.

Reflect On and Share Your Learning

- Share your thinking and findings—talk about strategies with your friends and family.
- Look back in the Practice Workbook to get ideas to help you solve new problems!

How Is the Practice Workbook Organized?

Unit 3 Fluency with Addition and Subtraction

What I Know

The sum of two numbers is about 700. What could the numbers be? Show your thinking.

The difference between two numbers is about 700. What could the numbers be? Show your thinking.

Checking In

Estimating Sums and Differences to 10 000

1 Estimate. Show your strategy each time. Do not calculate the exact answer.

a) $384 + 223$

b) $2567 + 1329$

c) $488 - 243$

d) $2929 - 1522$

CONNECTIONS

In question 1, how do you use place value to help you estimate?

Unit 3 Fluency with Addition and Subtraction

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What I Know — Review the things you already know.

Checking In — Build on your understanding and make connections to the world around you. Use the space provided to clearly record your thinking so others can understand you.

Connections — Think of how working on this math task relates to other things you know.

Bringing It Together

10 GAME: Roll to Win!

Take turns to roll a number cube to move around the game board. Answer the question you land on. Cover the answer. If the answer has already been covered, your partner takes a turn. Three in a row wins the game!

For example: If the question was $250 - 100$, I would calculate the answer to be 150. Then cover 150 on the game board.

START	$345 + 238$	$1801 - 828$	$901 + 198$	$8889 - 2319$	$1802 + 1148$
$622 - 348$	150	2200	132	800	$1081 - 741$
$74 + 126$	800	4530	588	500	$837 - 238$
$328 + 175$	280	180	100	754	$181 + 48$
$608 - 224$	100	280	275	332	$221 - 88$
$353 - 2142$	$652 + 132$	$167 + 148$	$788 - 210$	$210 - 128$	$75 + 75$

Try a different game! This time, take turns to choose a number on the game board. Write an addition or subtraction sentence that contains your number. If your number sentence is correct, cover the number.

What I Learned

Give an example of when you would estimate a sum or difference. Then give an example of when you would need an exact answer.

Unit 3 Fluency with Addition and Subtraction

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Bringing It Together — Work with others to discuss your thinking and strategies and show them what you know.

What I Learned — Answer the question by reflecting on what you know about important math learning.

Connecting and Reflecting: Patterns and Relations

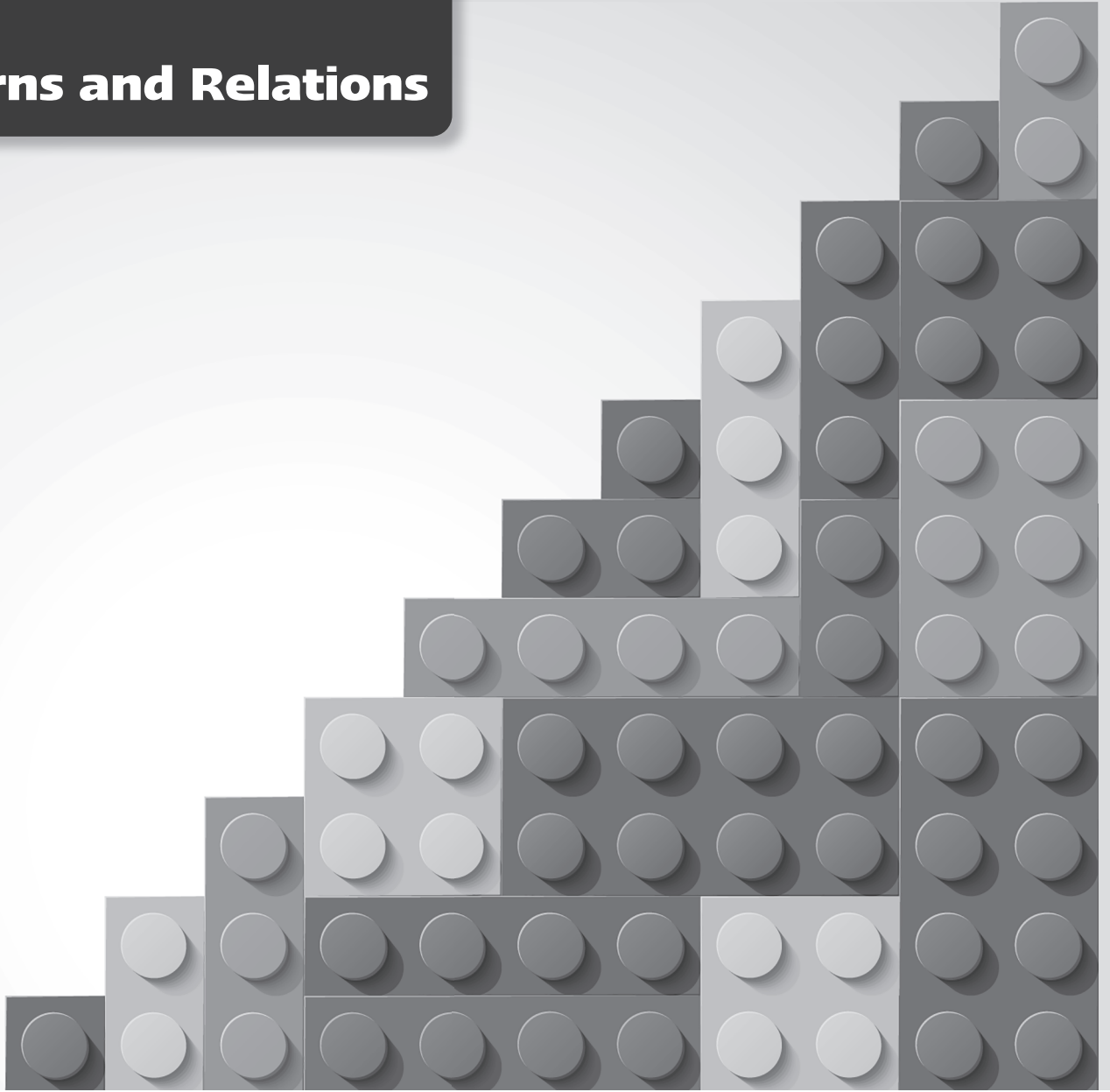
Choose an item that you have a lot of (for example, building blocks). Stack as many items as you can. Use what you know about patterns, number relationships, place value, and operations to describe your stack.

Unit 3 Fluency with Addition and Subtraction

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Connecting and Reflecting — Use what you have learned to complete the task and to help you make sense of the world around you.

Patterns and Relations



What math do you see in this picture?

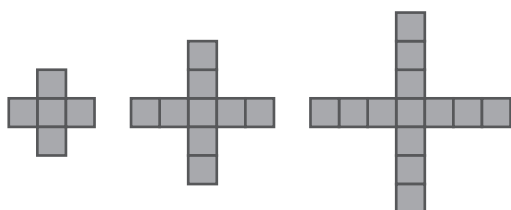
What I Know

Use numbers or drawings to make the first 4 terms of a pattern.
How do you know it is a pattern?
What kind of pattern is it? Explain.

Checking In

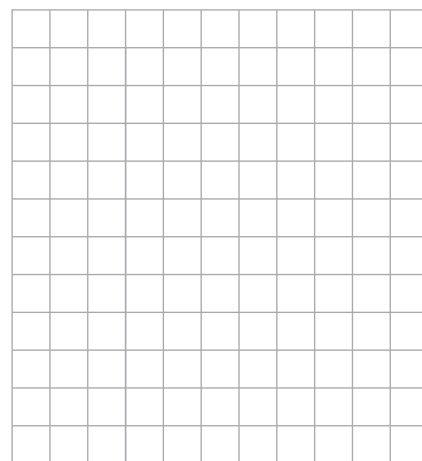
Representing Patterns

- 1 a) Represent this pattern in a table and on a graph.



Term 1 Term 2 Term 3

Term Number	Number of Squares



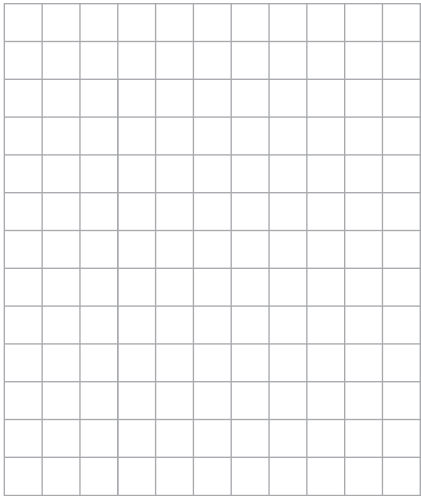
- b) Is it an increasing, decreasing, or repeating pattern?
How can you tell by looking at the table? At the graph?

- c) What is the pattern rule?
- d) How many squares would be in Term 7? Show your thinking.

2 a) Represent this pattern in a table and on a graph.



Core Number	Number of Es in the Pattern Core



- b) Is it an increasing, decreasing, or repeating pattern?
How can you tell by looking at the table? At the graph?
- c) What is the pattern core?
- d) What will the 41st E look like? Show how you know. Draw it.

3 a) Identify and correct the error(s) for the increasing pattern shown in the table.
Explain your thinking.

Number of Cars	Number of Wheels
1	4
2	8
3	12
4	18
5	20
6	22

b) Which other numbers belong to the shaded pattern below? Show how you know.

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

4 Complete the table.

Term Number	1	2	3	4	5
Number of Squares	21	16	11		



You could build a pattern with tiles first, then record your pattern on the grid.



Shade grid squares to represent the pattern.

Check with a friend. How are your patterns alike? How are they different?



5 Aaron is trying out for the cross-country team. They must run 50 km over one week.

Aaron uses this pattern rule to plan their runs: Start at 1 km and add 2 km each day.

Will Aaron meet their goal? Explain.

Day	Number of Kilometres
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
Sunday	

Investigating Number Relationships

- 6** Shade the numbers on the diagonals of the large square.

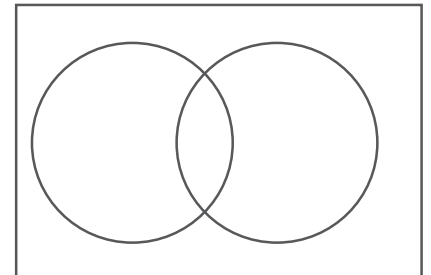
a) Add the pairs of shaded numbers in each column. List the sums.

b) Write the pattern rule for the sums.

c) Find and shade a new pattern on the multiplication chart. Write the pattern rule.

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

- 7** In a class of 25 Grade 4 students, 15 play the piano and 7 play the violin. Students may play both instruments. What is the greatest number of students who don't play either instrument? Use the Venn diagram to show your thinking



- 8** Use the Carroll diagram to sort these numbers: 5, 12, 16, 19, 20, 25, 27, 30, 35, 40, 42, 57, 98, 100, 125. Add a number of your choice to each cell.

	2-Digit Number	Not a 2-Digit Number
Odd		
Not Odd		

Investigating Other Patterns

- 9** Identify the pattern rule, then write the next 2 terms.

a) 2, 8, 32,,

b) 729, 243, 81, 27,,

c) 5, 8, 13, 21,,

- 10** a) Describe the patterns you see in this number string.

$$39.2 = 3 \text{ tens} + 9 \text{ ones} + 2 \text{ tenths}$$

$$39.2 = 3 \text{ tens} + 8 \text{ ones} + 12 \text{ tenths}$$

$$39.2 = 3 \text{ tens} + 7 \text{ ones} + 22 \text{ tenths}$$

- b) Continue the patterns to write 39.2 in as many ways as you can.



CONNECTIONS

How do you use operations with numbers to find the pattern rule?



Look for increasing and decreasing patterns, arithmetic and geometric sequences, and even Fibonacci sequences.



- 11** Identify each sequence as arithmetic, geometric, or neither. Explain how you know.

a) 3, 6, 12, 24, ...

b) 1, 6, 11, 16, ...

c) 1, 3, 4, 7, 8, ...

d) 10, 12, 16, 24, ...

e) 1, 5, 25, 125, ...

Bringing It Together

12 GAME: Shading Patterns

Each of you uses a different coloured pencil.

Take turns shading the first 4 terms of a number pattern.

Your pattern cannot use a number that is already shaded.

When one player shades a pattern, the other player identifies the type of pattern and the rule.

Continue to take turns until one of you cannot shade a pattern.

The other player wins.

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
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

What I Learned

A pattern can be shown in many different ways. Which way do you find most helpful when you identify the pattern rule? Explain.