Mathletics

Series G Teacher

Patterns and Algebra

Series G – Patterns and Algebra

Contents

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Series G – Patterns and Algebra

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1a 9 18 [27] 36 45 [54] ; + 9

b 10 [19] [28] 37 46 [55] ; + 9

c 125 100 [75] 50 25 [0] ; – 25

d 49 42 [35] 28 21 [14] ; – 7

e 7 13 [19] 25 31 [37] ; + 6

f 3 [10] 17 24 31 [38] ; + 7

2 Both + 9. Just different starting numbers.

3a

→ + 1, ↓ + 10

16	17	18	19
26	27	28	29
36	37	38	39
46	47	48	49

b

→ + 5, ↓ + 9

10	15	20	25
19	24	29	34
28	33	38	43
37	42	47	52

c

→ + 9, ↓ + 8

10	19	28	37
18	27	36	45
26	35	44	53
34	43	52	61

4a 10, 17, 24, 31

b 120, 115, 110, 105

c 88, 108, 128, 148

5a 3, 3.5, 4, 4.5

b 24.5, 24, 23.5, 23

c 32.5, 35, 37.5, 40

6a 2, 1; 2, 1; 2, 1; × 2 + 1

b 3, 3; 3, 3; 3, 3; × 3 – 3

7a

78	100	122	144	166	188	211	222	233

The rule is + 22

b

500	466	432	398	364	330	298	266	230

The rule is – 34

Pages 3–4

1a × 5 + 1, × 5 + 1, × 5 + 1, × 5 + 1, × 5 + 1, × 5 + 1, × 5 + 1; 101

b × 2 + 3, × 2 + 3, × 2 + 3, × 2 + 3, × 2 + 3, × 2 + 3, × 2 + 3; 43

c × 9 – 1; × 9 – 1; × 9 – 1; × 9 – 1; × 9 – 1; × 9 – 1; × 9 – 1; 179

2 × 3 + 5, × 3 + 5, × 3 + 5, × 3 + 5, × 3 + 5, × 3 + 5, × 3 + 5;
8, 11, 14, 17, 20, 65

3a false

b true

c true

d true

4 15, 23, 31, 39, 47, 55, 63, 71, 79, 87

5a × 9 – 6, × 9 – 6, × 9 – 6, × 9 – 6, × 9 – 6, × 9 – 6, × 9 – 6, × 9 – 6, × 9 – 6;
3, 12, 21, 30, 39, 48, 57, 66, 75, 84

b 444

Pages 5–6

1a 19, 22, 25, 28, 31, 151;
3

b 26, 30, 34, 38, 42, 202;
4, 2

c 13, 15, 17, 19, 21, 101;
2, 1

d 20, 23, 26, 29, 32, 152;
3, 2

2a Number of stars: 4, 5, 6, 7, 8, 9, 10, 15
Number of pentagons: 3, 4, 5, 6, 7, 8, 9, 14

b 10

c 14

3 Number of crosses: 4, 5, 6, 7, 8, 9, 10
Number of rectangles: 6, 8, 10, 12, 14, 16, 18

a 22

b 9th

c Number of crosses
(2 + 16) ÷ 2 = 9

Page 7

1a × 7 + 3

b ÷ 5 – 1

2a 17, 25, 41, 57, 73, 33, 49

b 41, 11, 16, 31, 51, 96, 36

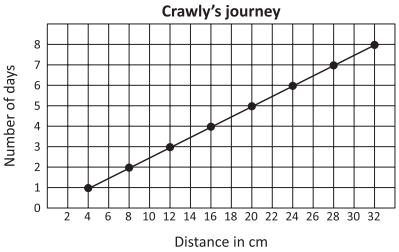
Pages 8–10

1a 100, 120, 140, 160;
240 litres

b 5;
25, 30, 35, 40;
150 songs

c 50;
250, 300, 350, 400;
16 hours

2



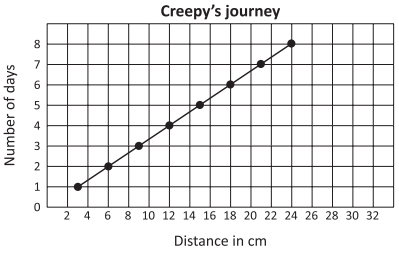
Number of days × 4 cm

4 cm, 8 cm, 12 cm, 16 cm, 20 cm, 24 cm, 28 cm, 32 cm

3a 3 cm, 6 cm, 9 cm, 12 cm, 15 cm, 18 cm, 21 cm, 24 cm

b Number of days × 3 cm or 5 – 2 cm

c



Crawly covers more distance over the same amount of time.

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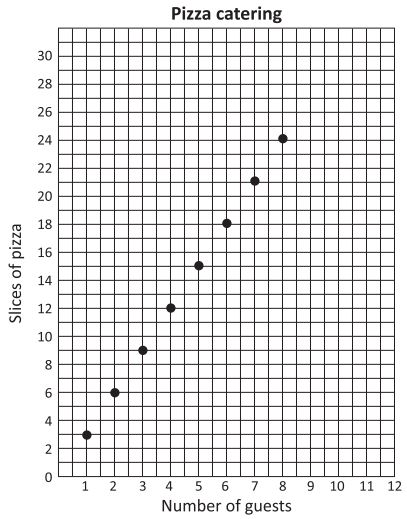
Pages 8–10

4a 6, 9, 12, 15, 18, 21, 24

b Number of guests × 3 slices

c



d 11 × 3 = 33 slices

e Used the rule.

f Continue the plotted points.

g 10 × 3 = 30 slices
3 pizzas = 3 × 12 = 36 slices
6 leftover slices

Page 11

What to do

Answers will vary.

What to do next

Answers will vary.

Pages 12–13

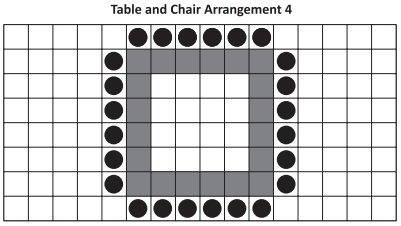
What to do

a 20, 24, 28, 32, 36, 40, 44

b Number of tables = Table arrangement × 4 + 4

c Number of chairs = Table arrangement × 4 + 8

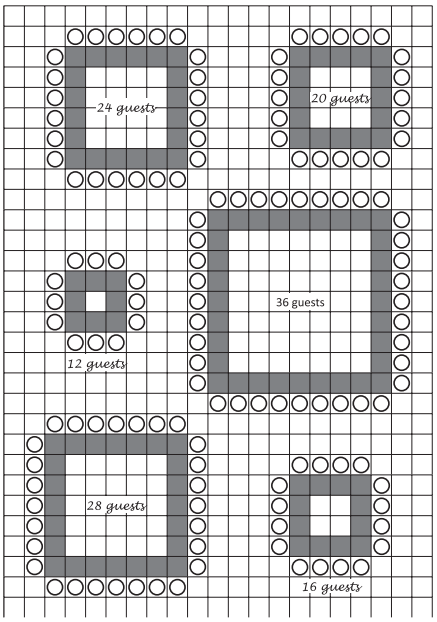
d



What to do next

Answers will vary.

Sample answer:



Number of guests: 136

Page 14

What to do

13, 21;

8, 13, 21, 34, 55, 89, 144

What to do next

233, 377, 610, 987, 1,597, 2,584, 4,181, 6,765, 10,946, 17,711, 28,657, 46,368

Page 15

Getting ready

1 + 2 + 3 + 4 + 5;

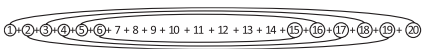
1 + 2 + 3 + 4 + 5 + 6;

1 + 2 + 3 + 4 + 5 + 6 + 7;

36; 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8

What to do

11; 5; 55



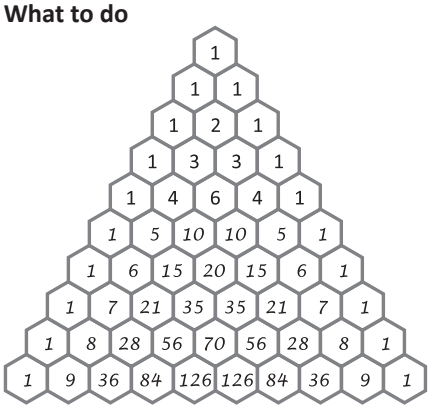
21; 10; 10, 21; 210

What to do next

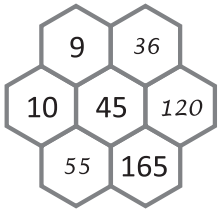
465;
1 + 30, 31;
15 × 31 = 465 So the 30th triangular number is 465.

Pages 16–17

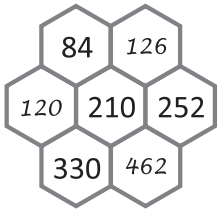
What to do



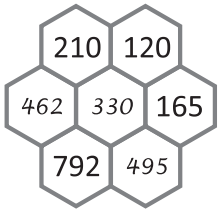
a



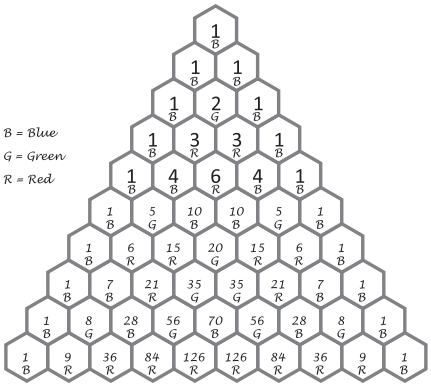
b



c



What to do next



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Pages 16–17

What to do next

- Diagonals on the left and right edges are ones.
- Next row of diagonals is counting numbers in order.
- Next row of diagonals is triangular numbers in order.

Pages 18–23

1a Clue 1 ☆ − 15 = 45

Clue 2 ☆ × △ = 120

☆ − 15 = 45

~~☆ − 15~~ = 45 + 15

☆ = 60

☆ × △ = 120

60 × △ = 120

△ = 120 ÷ 60

△ = 2

b Clue 1 ☆ × 9 = 81

Clue 2 △ − ☆ = 96

☆ × 9 = 81

~~☆ × 9~~ = 81 ÷ 9

☆ = 9

△ − ☆ = 96

△ − 9 = 96

△ = 96 + 9

△ = 105

2a Clue 1 ☆ × 8 = 64

Clue 2 △ − ☆ = 75

☆ × 8 = 64

~~☆ × 8~~ = 64 ÷ 8

☆ = 8

△ − 8 = 75

△ = 75 + 8

△ = 83

b Clue 1 ☆ × 7 = 49

Clue 2 ☆ + △ = 100

☆ × 7 = 49

☆ = 49 ÷ 7

☆ = 7

7 + △ = 100

△ = 100 − 7

△ = 93

3a Clue 1 6 × ☆ + 12 = 84

Clue 2 ☆ × △ = 96

Steps for finding ☆

6 × ☆ = 84 − 12

6 × ☆ = 72

☆ × 6 = 72

☆ = 72 ÷ 6

☆ = 12

Now you can find △

☆ × △ = 96

12 × △ = 96

△ × 12 = 96

△ = 96 ÷ 12

△ = 8

b Clue 1 9 × ☆ − 42 = 21

Clue 2 ☆ + △ = 100

Steps for finding ☆

9 × ☆ − 42 = 21

☆ × 9 = 21 + 42

☆ × 9 = 63

☆ = 63 ÷ 9

☆ = 7

Now you can find △

☆ + △ = 100

7 + △ = 100

△ = 100 − 7

△ = 93

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Pages 18–23

4a ☆ = 12

○ = 8

△ = 6

Clue 1

$2 \times ☆ = 3 \times ○$

$2 \times 12 = 3 \times ○$

$24 = 3 \times ○$

$3 \times ○ = 24$

$○ = 24 \div 3$

$○ = 8$

Clue 2

$3 \times ○ = 4 \times △$

$3 \times 8 = 4 \times △$

$24 = 4 \times △$

$4 \times △ = 24$

$△ = 24 \div 4$

$△ = 6$

Clue 3

$6 \times ☆ = 72$

$☆ = 72 \div 6$

$☆ = 12$

b ☆ = 9

○ = 15

△ = 20

Clue 1

$5 \times ☆ = 3 \times ○$

$5 \times ☆ = 3 \times 15$

$5 \times ☆ = 45$

$☆ = 45 \div 5$

$☆ = 9$

Clue 2

$4 \times ○ = 60$

$○ = 60 \div 4$

$○ = 15$

Clue 3

$45 \div ☆ = △ \div 4$

$45 \div 9 = △ \div 4$

$△ \div 4 = 5$

$△ = 5 \times 4$

$△ = 20$

5 ○ = 25

△ = 5

☆ = 20

○ + ○ = 50 So, ○ = 25

△ + △ + 15 = ○

We know ○ is 25, so:

△ + △ + 15 = 25

Use the balance strategy △ + △ = 25 − 15

△ + △ = 10

So, △ = 5

Clue 3 ☆ = △ + 15

☆ = 20

6a Find the value of these 2 symbols: ○ = 100

You must look closely at each clue. ☆ = 50

There are hints along the way.

Clue 1 tells us that: ☆ + ☆ = ○

Looking at Clue 2, this means that: ○ + ○ = 200

So, ○ = 100

We know the value of ○, so we can put this into Clue 3:

Clue 3 ☆ = 100 − 50

So, ☆ = 50

b Find the value of these 3 symbols: ○ = 50

You must look closely at each clue. △ = 10

☆ = 40

Clue 1

$☆ + △ + ○ = 100$

$○ + ○ = 100$

$○ = 50$

Clue 2

$☆ + △ = ○$

$☆ + 10 = 50$

$☆ = 50 - 10$

$☆ = 40$

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6

Clue 3

○ = △ + 40

50 = △ + 40

△ + 40 = 50

△ = 50 − 40

△ = 10

Page 24

What to do

Observe students.

What to do next

£9; £6; £5

Page 25

What to do

Observe students.

What to do next

Chomp stix		Pep up chews		Hokey pokies
○	=	○ ○	=	○○ ○○

$7 \times ○ = 84$

$○ = 12$

12 chomp stix, 24 pep up chews and 48 hokey pokies

$12 + 24 + 48 = 84$

Page 26

1a $y + 6 - 6 = 68 - 6$

$y = 62$

b $y - 18 + 18 = 42 + 18$

$y = 60$

c $y \times 8 \div 8 = 72 \div 8$

$y = 9$

2 E $y - 5 = 29$

$y - 5 + 5 = 29 + 5$

$y = 34$

A $a + 7 = 15$

$a + 7 - 7 = 15 - 7$

$a = 8$

W $m + 5 = 19$

$m + 5 - 5 = 19 - 5$

$m = 14$

T $y + 8 = 25$

$y + 8 - 8 = 25 - 8$

$y = 17$

L $8 + x = 24$

$8 + x - 8 = 24 - 8$

$x = 16$

8	17	5	14	34	16
A	T	O	W	E	L

Pages 27–29

1a $7 + x = 26$

$x = 26 - 7$

$x = 19$

b $x + 15 = 48$

$x = 48 - 15$

$x = 33$

c $x \times 2 = 64$

$x = 64 \div 2$

$x = 32$

d $x - 19 = 42$

$x = 42 + 19$

$x = 61$

2a $x - 15 = 35 + 15$

$x = 50$

$50 \times y = 250$

$50 \times y = 250 \div 50$

$y = 5$

$x = 50 \quad y = 5$

b $x \times 9 = 72 \div 9$

$x = 8$

$8 \times y = 48$

$8 \times y = 48 \div 8$

$y = 6$

$x = 8 \quad y = 6$

c $x \div 7 = 8 \times 7$

$x = 56$

$56 + y = 60$

$56 + y = 60 - 56$

$y = 4$

$x = 56 \quad y = 4$

3b $y \times 5 = 40 \div 5$

$y = 8$

$y = 8$ cm

4b $(y + 2) \times \boxed{8} = \boxed{40}$

$(y + 2) \times \boxed{8} = 40 \div \boxed{8}$

$y + 2 = \boxed{5} - \boxed{2}$

$y = \boxed{3}$ cm

c $(y + 5) \times 5 = 40 \div 5$

$y + 5 = 8 - 5$

$y = 3$ cm

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5a $(y + \boxed{2}) \div \boxed{3} \times \boxed{5} = 10$

$(y + \boxed{2}) \div \boxed{3} \times \boxed{5} = 10 \div 5$

$y + \boxed{2} \div \boxed{3} = \boxed{2} \times \boxed{3}$

$y + \boxed{2} = \boxed{6} - \boxed{2}$

$y = \boxed{4}$

b $(y + 5) \div 4 \times 5 = 10$

$(y + 5) \div 4 \times 5 = 10 \div 5$

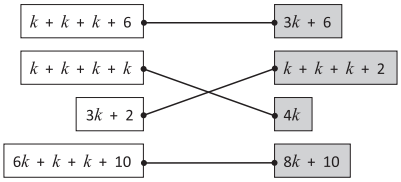
$(y + 5) \div 4 = 2 \times 4$

$y + 5 = 8 - 5$

$y = 3$

Pages 30–31

1

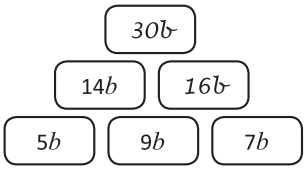


2b $9x$

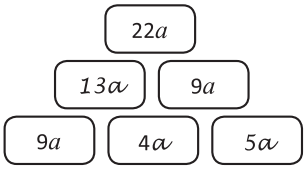
c $7b$

d $12y$

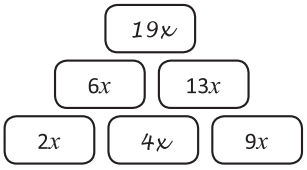
3a



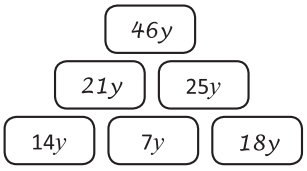
b



c



d



4b $9b - 5b = 24$

$\boxed{4b} = 24$

$\boxed{4b} \div \boxed{4} = 24 \div \boxed{4}$

$b = \boxed{6}$

c $6c - 2c = 36$

$\boxed{4c} = 36$

$\boxed{4c} \div \boxed{4} = 36 \div \boxed{4}$

$c = \boxed{9}$

5 H $16r - 4r = 48$

$12r = 48$

$12r \div 12 = 48 \div 12$

$r = 4$

R $9p - 2p = 35$

$7p = 35$

$7p \div 7 = 35 \div 7$

$p = 5$

A $8i + 5i = 39$

$13i = 39$

$13i \div 13 = 39 \div 13$

$i = 3$

T $10f - 3f = 42$

$7f = 42$

$7f \div 7 = 42 \div 7$

$f = 6$

B $7m + 2m = 63$

$9m = 63$

$9m \div 9 = 63 \div 9$

$m = 7$

E $7x - x = 54$

$6x = 54$

$6x \div 6 = 54 \div 6$

$x = 9$

7	5	9	3	6	4
B	R	E	A	T	H

Page 32

What to do

$24 - 20 = 4$ (Lim);

$x + 4 = 13 - 4$

$x = 9$ (Maya);

$4 + x = 15 - 4$

$x = 11$ (Josh)

What to do next

9 candles;

4 candles;

11 candles

Page 33

$m + m = £12$ $\quad m = \boxed{£6}$

$\boxed{£6} + s = £9$ $\quad s = \boxed{£3}$

$c + a = \boxed{£12}$

$c - a = \boxed{£1}$

$c + a + c - a = £12 + £1$

$c + c = £13$

$c = £6.50$

$a = £5.50$

Pages 34–35

1a 61

b 36

c 95

d 2

2a 68

b 65

c 62

d 9

3a 28

b 36

c 20

d 27

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Pages 34–35

4a ✓

b ✗ 89

c ✗ 76

5a ÷, +

b ÷, +

c ÷, ×

d ÷, −

6a (5 × £8) + (2 × £3) = £46

b (12 × 2) − 7 + 5 = 22

c (30 − 12) ÷ 3 = 6

7 Answers will vary.

Pages 36–37

1a (17 + 3) + 8 = 28

b 43 + (18 + 2) = 63

c 62 + (5 + 15) = 82

d (57 + 3) + 16 = 76

2a 7 × (25 × 4) = 700

b (6 × 8) × 2 = 96

c (50 × 4) × 3 = 600

d 2 × (9 × 8) = 144

3a 325 + 61 + 75 = 461

(325 + 75) + 61 = 461

b 24 + 12 + 276 = 312

(276 + 24) + 12 = 312

4b (△ + 36) + 14 = 100

△ + (36 + 14) = 100

△ + 50 = 100 − 50

△ = 50

c 40 + (160 + △) = 300

(40 + 160) + △ = 300

200 + △ = 300 − 200

△ = 100

d 8 × (△ × 9) = 144

(8 × 9) × △ = 144

72 × △ = 144 ÷ 72

△ = 2

5a

325	**75**	42
61	25	82
12	80	70
		250

b

50	150	42
30	120	75
12	180	25
		300

c

15	85	50
85	70	40
120	80	100
		400

6a 8 + 17 + 12

= (8 + 12) + 17

= 20 + 17

= 37 pages

6b 6H £85 + £38 + £15

= (£85 + £15) + £38

= £100 + £38

= £138

6F £75 + £29 + £25

= (£75 + £25) + £29

= £100 + £29

= £129

c 5 × 13 × 2

= (5 × 2) × 13

= 10 × 13

= 130 cans

Pages 38–39

1a 64 × 5 = 320

(60 + 4) × 5

(60 × 5) + (4 × 5)

300 + 20 = 320

b 73 × 5 = 365

(70 + 3) × 5

(70 × 5) + (3 × 5)

350 + 15 = 365

c 56 × 5 = 280

(50 + 6) × 5

(50 × 5) + (6 × 5)

250 + 30 = 280

d 84 × 6 = 504

(80 + 4) × 6

(80 × 6) + (4 × 6)

480 + 24 = 504

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Pages 38–39

2 Yellow = Y
Red = R
Blue = B
Orange = O
Green = G

1	(30 + 8) × 6 Y	(20 × 2) + (7 × 2) R	40 + 14 = 54 A R
2	(20 + 7) × 2 R	(30 × 6) + (8 × 6) Y	180 + 48 = 228 N Y
3	(10 + 9) × 3 B	(10 × 3) + (9 × 3) B	30 + 27 = 57 I B
4	(40 + 4) × 4 O	(70 × 3) + (2 × 3) G	210 + 6 = 216 S G
5	(70 + 2) × 3 G	(40 × 4) + (4 × 4) O	160 + 16 = 176 L O

N	A	I	L	S
1	2	3	4	5

3a 84 ÷ 4 = 21

(80 + 4) ÷ 4

(80 ÷ 4) + (4 ÷ 4)

20 + 1 = 21

b 108 ÷ 4 = 27

(100 + 8) ÷ 4

(100 ÷ 4) + (8 ÷ 4)

25 + 2 = 27

4a $12 \times \triangle = 180$

$12 \times \triangle = 180 \div 12$

$\triangle = 15$

b $(6 \times \triangle) + (5 \times \triangle) = 66$

$(6 + 5) \times \triangle = 66$

$11 \times \triangle = 66$

$11 \times \triangle = 66 \div 11$

$\triangle = 6$ points

Jenna 6 × 6 = 36 points

Mel 5 × 6 = 30 points

Pages 40–41

What to do

Observe students.

Patterns and functions – part 1 Name _____

1 **Figure out the missing numbers in each pattern and write the rule:**

a 45 ☐ ☐ 21 13 ☐

Rule _____

b 49 42 ☐ 28 21 ☐

Rule _____

2 **Complete these decimal number sequences according to the recursive rule:**

a Start at 12 and subtract 0.5 ☐ → ☐ → ☐ → ☐ → ☐

b Start at 20 and add 1.5 ☐ → ☐ → ☐ → ☐ → ☐

3 **Use the table to complete the number sequence.**

6 9 12 15 18

Position of number	1	2	3	4	5	6	7	8	20
Rule									
Number sequence									

Circle true or false for each of the following:

a The number in the 6th position is 27 true / false

b The number in the 20th position is 63 true / false

c 32 is in this sequence true / false

d The number in the 100th position is 303 true / false

Skills	Not yet	Kind of	Got it
• Completes recursive number pattern and writes the rule			
• Creates a number pattern according to a rule			
• Completes and analyses a function number pattern with more than one operation			

Patterns and functions – part 2 Name _____

1 **Complete the table for each sequence of shapes.**

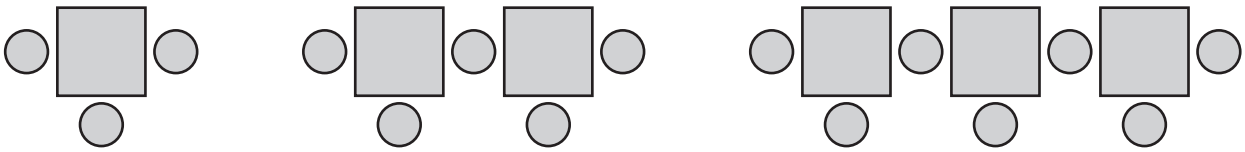
a

Shape 1 Shape 2 Shape 3 Shape 4

Shape number	1	2	3	4	5	20
Number of matchsticks	6	10	14			
Function rule	Number of matchsticks = Shape number × _____ + _____					

b

Shape 1 Shape 2 Shape 3



Shape number	1	2	3	4	5	6	7	8	9	10	15
Number of squares	1	2	3								
Number of circles	3	5	7								
Rule for circles	Number of circles = Number of squares _____										
Rule for squares	Number of squares = Number of circles _____										

Skills	Not yet	Kind of	Got it
• Completes the table to describe a growing pattern			
• Completes the rule to describe a growing pattern for each shape			

Patterns and functions – part 3 Name _____

1 **Complete the function tables.**

a

Rule: × 8 + 1								
IN	8	2	10	5	9	6	7	11
OUT								

b

Rule: × _____ + 5								
IN	3	6	2	11	20	9	4	5
OUT	23	41	17	71	125			

2 **Complete the table and answer the questions about these real life functions.**

a A car is traveling at a speed of 80 km/hour.

Rule: Number of hours × _____ = Number of km travelled (or total km travelled)								
Hours	1	2	3	4	5	6	7	8
Km travelled	80	160	240	320				
How long would it take to travel 480 km?								

b A pool fills at a rate of 5 litres every minute.

Rule: Number of minutes × _____ = Number of litres (or total litres)								
Minutes	5	10	15	20	25	30	35	40
Litres	25	50	75	100				
How many litres after one hour?								

Skills	Not yet	Kind of	Got it
• Works with input and output relationships and rules			
• Can write a rule to describe input and output relationships			

Algebraic thinking

Name _____

1 **Find out the value of both symbols:** ○ △

Clue 1 6 × ○ = 36

Clue 2 △ – ○ = 14

2 **Find out the value of both symbols:** ○ △

a **Clue 1** 5 × ○ + 7 = 52

Clue 2 ○ × △ = 72

Steps for finding ○

5 × ○ = 52 – □

5 × ○ = □

○ × 5 = □

○ = □ ÷ □

○ = □

Now you can find △

b **Clue 1** 8 × ○ – 12 = 44

Clue 2 ○ + △ = 30

Steps for finding ○

Now you can find △

Skills	Not yet	Kind of	Got it
• Finds the value of an unknown represented by a symbol by using the balance strategy			
• Substitutes the value of one symbol to solve both symbols			
• Sets out steps correctly			

Solving equations

Name _____

1 **Using the balance strategy, solve each equation and then match the letters to solve this riddle:**

What belongs to you but others use it more than you do? Your …

M $x + 5 = 25$

A $y - 6 = 46$

E $m + 9 = 36$

N $y + 8 = 32$

24	52	20	27

2 **Write an equation to solve each mystery number question. Use m for the mystery number.**

a A mystery number doubled is 84.

b A mystery number increased by 21 is 94.

Skills	Not yet	Kind of	Got it
• Finds the value of an unknown represented by a pronumeral by using the balance strategy			
• Writes an equation using pronumerals to solve an unknown			
• Sets out steps correctly			

Properties of arithmetic

Name _____

1 **Show what you know about the order of operations.**

a 3 + (4 × 4) − 3 − 3 = ☐

b 20 − (25 ÷ 5) × 2 = ☐

c 20 − (36 ÷ 6) + 5 = ☐

d 7 − 2 + (7 × 9) + 8 = ☐

e 30 ÷ (3 × 5) + 4 = ☐

f 36 ÷ (3 × 3) + 5 = ☐

2 **Add brackets to make these equations true.**

a 12 − 6 + 4 × 6 = 8 + 7 + 5 × 3

b 9 + 9 × 9 = 20 + 30 × 2 + 10

c 30 × 2 − 8 + 2 = 7 + 6 × 5 + 13

3 **Check the following sums based on what you know about the order of operations. Correct any that are wrong.**

a 40 − (25 ÷ 5) + 6 = 41

b 100 − (5 × 6) + (15 − 5) = 60

c (60 − 8) × 2 + (16 ÷ 4) − 32 = 140

Skills	Not yet	Kind of	Got it
• Understands and applies rules for order of operations			

Series G – Patterns and Algebra – Student Progress Record

Name_____ Class _____ Date _____

What went well: _____

_____

_____

_____

What I need to improve: _____

_____

_____

_____

Series G – Patterns and Algebra – Student Progress Record

Name_____ Class _____ Date _____

What went well: _____

_____

_____

_____

What I need to improve: _____

_____

_____

_____

Series G – Patterns and Algebra

ASSESSMENT ANSWERS

Page 9

1a 45, 37, 29, 21, 13, 5

Rule: – 8

b 49, 42, 35, 28, 21, 14

Rule: 7

2a 12 → 11.5 → 11 → 10.5 → 10

b 20 → 21.5 → 23 → 24.5 → 26

3 × 3 + 3, × 3 + 3, × 3 + 3, × 3 + 3,
× 3 + 3, × 3 + 3, × 3 + 3, × 3 + 3,
× 3 + 3;
6, 9, 12, 15, 18, 21, 24, 27, 63

a false

b true

c false

d true

Page 10

1a 18, 22, 82;
4, 2

b 4, ,5, 6, 7, 8, 9, 10, 15;
× 2 + 1;
– 1 ÷ 2

Page 11

1a 65, 17, 81, 41, 73, 49, 57, 89

b 6;
59, 29, 35

2a 80;
400, 480, 560, 640
6 hours

b 5;
125, 150, 175, 200
300 l

Page 12

1 $6 \times \bigcirc = 36$

$\bigcirc = 6 \div 36$

$\bigcirc = 6$

$\triangle - \bigcirc = 14$

$\triangle - 6 = 14$

$\triangle = 6 + 14$

$\triangle = 20$

2a $5 \times \bigcirc = 52 - 7$

$5 \times \bigcirc = 45$

$\bigcirc \times 5 = 45$

$\bigcirc = 45 \div 5$

$\bigcirc = 9$

$9 \times \triangle = 72$

$\triangle = 72 \div 9$

$\triangle = 8$

b $8 \times \bigcirc = 44 + 12$

$8 \times \bigcirc = 56$

$\bigcirc \times 8 = 56$

$\bigcirc = 56 \div 8$

$\bigcirc = 7$

$7 + \triangle = 30$

$\triangle = 30 - 7$

$\triangle = 23$

Page 13

1 M $x + 5 = 25$

$x = 25 - 5$

$x = 20$

A $y - 6 = 46$

$y = 46 + 6$

$y = 52$

E $m + 9 = 36$

$m = 36 - 9$

$m = 27$

N $y + 8 = 32$

$y = 32 - 8$

$y = 24$

24	52	20	27
N	A	M	E

2a $m \times 2 = 84$

$m = 84 \div 2$

$m = 42$

b $m + 21 = 94$

$m = 94 - 21$

$m = 73$

Page 14

1a 13

b 10

c 19

d 76

e 6

f 9

2a $12 - 6 + (4 \times 6) = 8 + 7 + (5 \times 3)$

b $9 + (9 \times 9) = 20 + (30 \times 2) + 10$

c $(30 \times 2) - (8 + 2) = 7 + (6 \times 5) + 13$

3a ✓

b ✗ 80

c ✗ 76

Series G – Patterns and Algebra

Topic	Reference	Strand	Substrand	Objective
Patterns and Functions	6A3	Algebra	-	Generate and describe linear number sequences.
Algebraic Thinking	6A1	Algebra	-	Express missing number problems algebraically.
Algebraic Thinking	6A4	Algebra	-	Find pairs of numbers that satisfy number sentences involving two unknowns.
Solving Equations	6A2	Algebra	-	Use simple formulae.
Properties of Arithmetic	6C9	Number	Calculation	Use their knowledge of the order of operations to carry out calculations involving the four operations.