

Mathletics

Series



Teacher



$$5 \times 3 = 15 \quad 3 \times 5 = 15$$

$$5 \times 3 = 15 \quad 5 \times 3 = 15$$

$$5 \times 3 = 15 \quad 5 \times 3 = 15$$

Multiplication and Division

$$5 \times 3 = 15 \quad 5 \times 3 = 15$$

$$5 \times 3 = 15 \quad 3 \times 5 = 15$$

$$5 \times 3 = 15 \quad 3 \times 5 = 15$$



Series D – Multiplication and Division

Contents

Student book answers _____	1
Assessment _____	6
Student progress record _____	12
Assessment answers _____	13
Objectives _____	14

Series Author:

Nicola Herringer

Series D – Multiplication and Division

Pages 2–3

1a

b

c

2a 6, 12

b 8, 16

c 3, 6

d 5, 10

e 4, 8

f 9, 18

3a 3, 6

b 10, 20

c 5, 10

d 2, 4

4a 4, 8

b 9, 18

c 7, 14

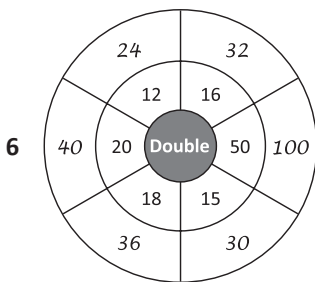
d 3, 6

5a 12

b 18

c 16

d 14



Pages 4–5

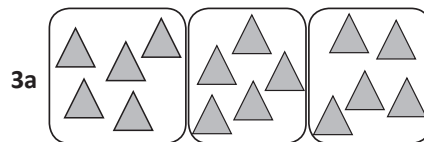
1a $5 + 5 + 5 + 5 = 20$; 4, 5, 20

b $5 + 5 + 5 + 5 + 5 + 5 = 30$; 6, 5, 30

c $5 + 5 + 5 + 5 + 5 = 25$; 5, 5, 25

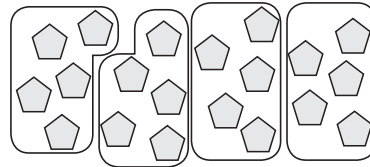
2a 2, 5, 10;
 $2 \times 5 = 10$

b 6, 5, 30;
 $6 \times 5 = 30$



3a 3 groups of 5 is equal to 15

$$3 \times 5 = 15$$



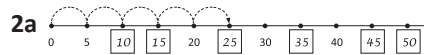
b 4 groups of 5 is equal to 20

$$4 \times 5 = 20$$

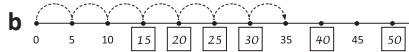
Pages 7–8

1a 30, 35, 40, 45, 50, 55, 60, 65, 70, 75

b 55, 60, 65, 70, 75, 80, 85, 90, 95, 100



This is the same as $5 \times 5 = 25$



This is the same as $7 \times 5 = 35$

3b $8 \times 5p = 40p$

c $5 \times 5p = 25p$

4 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60

5a 10

b 40

c 45

d 50

e 15

f 30

g 35

h 25

i 5

j 20

6a 7

b 4

c 10

6d 3

e 8

f 2

g 6

h 9

Page 10

1 10; 20; 30; 40; 50; 60; 70; 80; 90; 100

2a 6, 60

b 4, 40

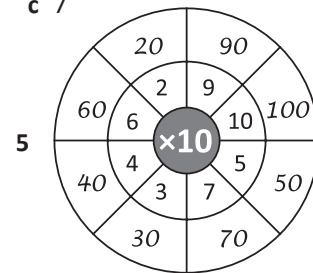
c 8, 80

3 10; 20; 30; 40; 50; 60; 70; 80; 90; 100, 110, 120

4a 5

b 8

c 7



Page 11

1a $7 \times 10 = 70$

Hundreds	Tens	Ones
		3
	3	0

$$3 \times 10 = 30$$

Hundreds	Tens	Ones
	1	5
1	5	0

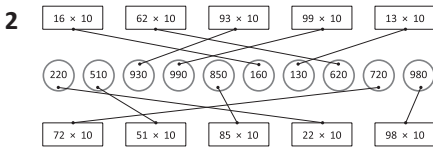
$$15 \times 10 = 150$$

Hundreds	Tens	Ones
	2	2
2	2	0

$$22 \times 10 = 220$$

Series D – Multiplication and Division

Page 11



Page 12

1a 8; 8, 8

b 6; 6, 6

c 5; 5, 5

d 4; 4, 4

2a 0

b 6

c 0

d 2

e 0

f 20

3

×	9	10	6	1	5	12	4	7	3	11	8	2
0	0	0	0	0	0	0	0	0	0	0	0	0
1	9	10	6	1	5	12	4	7	3	11	8	2

Pages 14–15

1a 3, 12

b 4, 16

c 5, 20

d 6, 24

e 7, 28

f 9, 36

2a 4, 16

b 3, 12

c 7, 28

d 9, 36

e 2, 8

3a

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

b The counting pattern of 4s is in the 2s counting pattern.

4a 6, 3

b 4, 8, 2, 8; 4, 2

4c 4

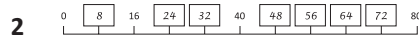
d 5

Page 17

1a 2; 16

b 4; 32

c 7; 56



3

	10	3	7	8	1	11	4	0	9	2	12	6	5
×2	20	6	14	16	2	22	8	0	18	4	24	12	10
×4	40	12	28	32	4	44	16	0	36	8	48	24	20
×8	80	24	56	64	8	88	32	0	72	16	96	48	40

4a £32

b 56 km

c 8 packets

Pages 19–20

1 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36

2a 9

b 36

c 21

d 30

e 6

f 12

g 15

h 18

i 27

j 3

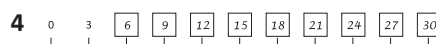
k 24

l 33

3a $6 \times 3 = 18$ $4 \times 3 = 12$

b $3 \times 3 = 9$ $10 \times 3 = 30$

c $9 \times 3 = 27$ $5 \times 3 = 15$



5b $2 \times 3 = 6$; $3 \times 2 = 6$

c $5 \times 3 = 15$; $3 \times 5 = 15$

d $6 \times 3 = 18$; $3 \times 6 = 18$

e $7 \times 3 = 21$; $3 \times 7 = 21$

f $9 \times 3 = 27$; $3 \times 9 = 27$

Page 21

1a 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

b 12, 16, 20, 24, 28, 32; 36; 40, 44, 48

c 24, 32, 40, 48, 56, 64, 74, 80, 88, 96

d 9, 12, 15, 18, 21, 24, 27, 30, 33, 36

2a Students should cross out 12.

b Students should cross out 22.

c Students should cross out 25.

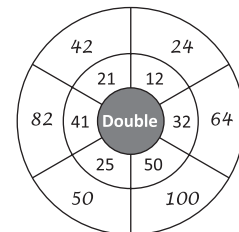
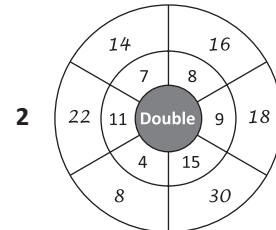
3a 12

b 20

c 16

Pages 22–23

1 Answers will vary.



3a Double 36

$$= 30 \times 2 + 6 \times 2$$

$$= 60 + 12$$

$$= 72$$

b Double 23

$$= 20 \times 2 + 3 \times 2$$

$$= 40 + 6$$

$$= 46$$

c Double 19

$$= 10 \times 2 + 9 \times 2$$

$$= 20 + 18$$

$$= 38$$

d Double 41

$$= 40 \times 2 + 1 \times 2$$

$$= 80 + 2$$

$$= 82$$

Series D – Multiplication and Division

Pages 22–23

4a

$4 \times 7 = 28$	
Double 7 once	14
Double 7 twice	28

b

$4 \times 15 = 60$	
Double 15 once	30
Double 15 twice	60

c

$4 \times 21 = 84$	
Double 21 once	42
Double 21 twice	84

d

$4 \times 12 = 48$	
Double 12 once	24
Double 12 twice	48

e

$4 \times 11 = 44$	
Double 11 once	22
Double 11 twice	44

f

$4 \times 14 = 56$	
Double 14 once	28
Double 14 twice	56

5 Answers will vary.

Pages 24–25

1a $10 \times 7 = 70$ $2 \times 7 = 14$

$70 + 14 = 84$

So, $7 \times 12 = 84$

b $10 \times 9 = 90$ $2 \times 9 = 18$

$90 + 18 = 108$

So, $9 \times 12 = 108$

2a $10 \times 3 = 30$ $2 \times 3 = 6$

$30 + 6 = 36$

So, $12 \times 3 = 36$

b $10 \times 6 = 60$ $2 \times 6 = 12$

$60 + 12 = 72$

So, $12 \times 6 = 72$

c $10 \times 8 = 80$ $2 \times 8 = 16$

$80 + 16 = 96$

So, $12 \times 8 = 96$

3 13 is $10 + 3$

a 104

b 117

c 91

d 65

Pages 26–27

1a 6; 60

b 15; 150

c 14; 140

d 16; 160

2a 150, 145

b 60, 57

c 80, 78

3b $29 \times 4 \rightarrow 4 \times 30 = 120 - 4$

So, $4 \times 29 = 116$

c $19 \times 6 \rightarrow 6 \times 20 = 120 - 6$

So, $6 \times 19 = 114$

d $59 \times 5 \rightarrow 5 \times 60 = 300 - 5$

So, $5 \times 59 = 295$

4 Answers will vary.

Page 28

1a 8

b 7

c 2

d 3

e 2

f 5

2a 21 km

b 72

c 76

d 21

Page 29

1a 4

b 3

c 3

Page 30

1a 3

b 4

c 6

d 6

2 35

Page 31

1a $10 \div 5 = 2$

b $18 \div 3 = 6$

c $24 \div 4 = 6$

2a $15 \div 3 = 5$

b $20 \div 5 = 4$

c $48 \div 8 = 6$

Pages 32–33

1a 3; 3


b 6; 6

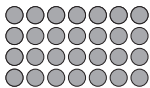
c 4; 4

Series D – Multiplication and Division

Pages 32–33

2a  $3 \times 7 = 21$
 $21 \div 7 = 3$

b  $2 \times 10 = 20$
 $20 \div 10 = 2$

c  $4 \times 7 = 28$
 $28 \div 7 = 4$

3 Observe students.

Page 34

- 1a** 4
b 3
c 24
d 35
e 18
f 4

- 2a** $36 \div 4 = 9$
b $12 \div 2 = 6$
c $24 \div 8 = 3$
d $27 \div 3 = 9$
e $55 \div 5 = 11$

Pages 35–36

1a

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

b

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

1c 5s pattern ends in 5 or 10; 10s pattern ends in 0.

2a 75, 80, 90

b 32, 42, 52

c 90, 85, 75, 65

d 82, 72, 52, 42, 32

3 40

4a

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

b

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

5a 33; 30; 21; 18; 15

b 16; 28; 32

c 48; 42; 40; 36

d 37; 47; 67; 97

6a 36

b 48

Page 37

1a 40

b 7

2a $\div 3$

b $\times 4$

3a 8

b 48

4a, b Answers will vary.

Page 38

1 6; 9; 12; 15; 60

2a 4; 6; 8; 40

b 8; 12; 16; 80

c 6; 9; 12; 60

Page 39

1a 6; 9; 4, 12

b 30

c 10; 15

d 50

Page 40

1a 8; 12; 16; 20; 40

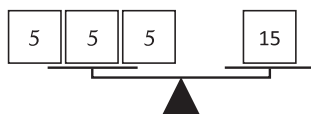
b 10; 15; 20; 25; 50




Pages 41–42

1a $10 + 10 = 20$
 $2 \times 10 = 20$

b $16 + 16 = 32$
 $2 \times 16 = 32$

2a 
 $5 + 5 + 5 = 15$
 $3 \times 5 = 15$

b 
 $7 + 7 + 7 = 21$
 $3 \times 7 = 21$

3 $3 + 3 + 3 = 9$
 $3 \times 3 = 9$

Series D – Multiplication and Division

Pages 41–42

$$4 \quad \boxed{5} + \boxed{5} + \boxed{5} = \boxed{15}$$

$$\boxed{3} \times \boxed{5} = \boxed{15}$$

$$5 \quad \begin{array}{cccc} \text{●} & \text{●} & \text{●} & \text{●} \\ \text{●} & \text{●} & \text{●} & \text{●} \end{array}$$

$$\begin{array}{cccccc} \text{●} & \text{●} & \text{●} & \text{●} & \text{●} & \text{●} \\ \text{●} & \text{●} & \text{●} & \text{●} & \text{●} & \text{●} \end{array}$$

$$\boxed{4} \times \boxed{4} = \boxed{16}$$

$$\boxed{6} \times \boxed{4} = \boxed{24}$$

Page 43

What to do

Observe students.

Page 44

What to do

16; 31; 21; 48; 9; 24

Pages 45–46

What to do

Observe students

Page 47

What to do

Observe students.

Page 48

What to do

Harry	Tortista
6	8
9	12
12	16
15	20
18	24
21	28
24	32
27	36
30	
33	
36	

They tie. Both run 12 km in 36 minutes.

Page 49

What to do

Observe students.

What to do next

Observe students.

1 Complete the times tables facts:

a $5 \times 5 =$

b $2 \times 10 =$

c $6 \times 5 =$

d $10 \times 10 =$

e $9 \times 5 =$

f $6 \times 10 =$

g $2 \times 5 =$

h $9 \times 10 =$

i $8 \times 5 =$

j $3 \times 10 =$

2 Complete this grid:

\times	8	3	6	10	1	9	4	7	5	2
10										

3 Connect the answers to the questions.

330

720

290

560

480

56×10

29×10

72×10

33×10

48×10

Skills	Not yet	Kind of	Got it
• Recalls times table facts $\times 5$, $\times 10$			
• Multiplies numbers by 0 and 1			
• Multiplies any number by 10			

1 Complete the times tables facts:

a $8 \times 4 =$

b $9 \times 4 =$

c $2 \times 2 =$

d $6 \times 4 =$

e $4 \times 4 =$

f $4 \times 2 =$

g $3 \times 2 =$

h $5 \times 2 =$

2 Complete this times table grid:

	3	8	2	5	9	10	6
$\times 3$							
$\times 4$							
$\times 8$							

3 Complete the list of multiples for 5:

5	5	10								
----------	---	----	--	--	--	--	--	--	--	--

Skills	Not yet	Kind of	Got it
• Recalls times table facts $\times 2$			
• Recalls times table facts $\times 4$			
• Recalls times table facts $\times 8$			
• Recalls times table facts $\times 3$			
• Lists a set of multiples			

1 Use the double-double strategy to multiply by 4:

a

$15 \times 4 =$ <input style="width: 60px;" type="text"/>
Double 15 once <input style="width: 60px;" type="text"/>
Double 15 twice <input style="width: 60px;" type="text"/>

b

$13 \times 4 =$ <input style="width: 60px;" type="text"/>
Double 13 once <input style="width: 60px;" type="text"/>
Double 13 twice <input style="width: 60px;" type="text"/>

2 Use the split strategy to multiply by 13:

a What is 13×5 ?

<input style="width: 30px;" type="text"/> \times <input style="width: 30px;" type="text"/> = <input style="width: 60px;" type="text"/>	<input style="width: 30px;" type="text"/> \times <input style="width: 30px;" type="text"/> = <input style="width: 60px;" type="text"/>
<input style="width: 30px;" type="text"/> + <input style="width: 30px;" type="text"/> = <input style="width: 60px;" type="text"/>	
So, $13 \times 5 =$ <input style="width: 60px;" type="text"/>	

b What is 13×8 ?

<input style="width: 30px;" type="text"/> \times <input style="width: 30px;" type="text"/> = <input style="width: 60px;" type="text"/>	<input style="width: 30px;" type="text"/> \times <input style="width: 30px;" type="text"/> = <input style="width: 60px;" type="text"/>
<input style="width: 30px;" type="text"/> + <input style="width: 30px;" type="text"/> = <input style="width: 60px;" type="text"/>	
So, $13 \times 8 =$ <input style="width: 60px;" type="text"/>	

3 Use the compensation strategy. First multiply by the closest multiple of ten and then build down.

a $3 \times 29 \longrightarrow 3 \times$ = - So, $3 \times 29 =$

b $4 \times 39 \longrightarrow 4 \times$ = - So, $4 \times 39 =$

Skills	Not yet	Kind of	Got it
• Uses double-double strategy to multiply by 4			
• Uses the split strategy			
• Uses the compensation strategy			

1 Solve each of these division problems:

a Share 18 lollies between 3 bowls. How many lollies are in each bowl? $\square \div \square = \square$

b Share 20 apples between 4 baskets. How many are in each basket? $\square \div \square = \square$

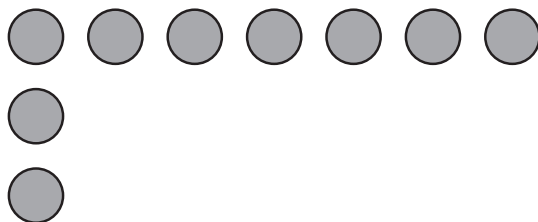
c Out of a pile of 30 coloured pencils, 10 go into each pot. How many pots are needed? $\square \div \square = \square$

d My 5 friends have 35 sweets between them. If they share them fairly, how many will they have each? $\square \div \square = \square$

e I have drawn some octagons on a piece of paper. I've drawn 56 sides together. How many octagons is this? $\square \div \square = \square$

f I skip 10 times in one minute. How many seconds does each skip take? $\square \div \square = \square$

2 Complete the array and then write a matching multiplication and division fact.



$\square \times \square = \square$

$\square \div \square = \square$

Skills	Not yet	Kind of	Got it
• Recalls and uses division facts from $\div 2, \div 5, \div 10$			
• Recalls and uses division facts from $\div 3, \div 4, \div 8$			
• Links multiplication and division facts			

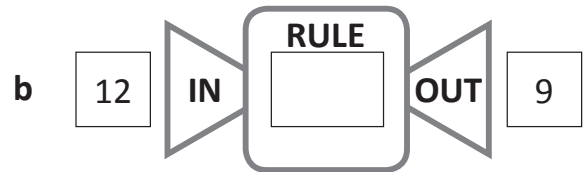
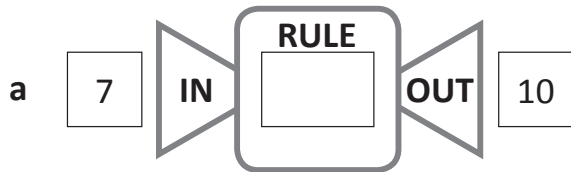
1 Complete this table and answer the questions:

Number of packets	1	2	3	4	5	20
Number of sweets	10			40	50	

a How many sweets in 20 packets?

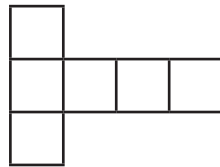
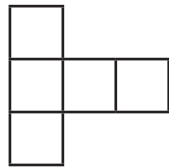
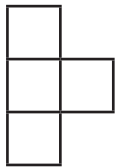
b How did you work this out?

2 Write the rule on these function machines:



3 Look carefully at this growing pattern.

a Draw what comes next:

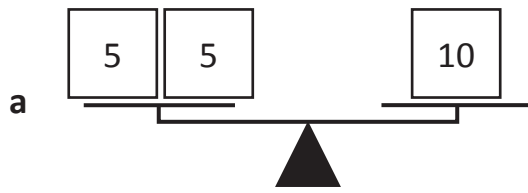


b How many squares will be needed for the 10th shape?

c How do you know?

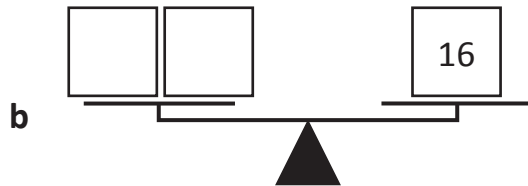
Skills	Not yet	Kind of	Got it
• Completes a shape or number pattern by following a function rule			
• Can write a rule to describe input and output relationships			

1 Complete the number sentences.



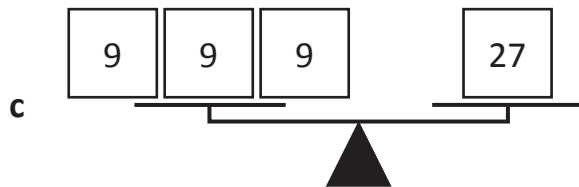
$$\boxed{} + \boxed{} = \boxed{10}$$

$$\boxed{2} \times \boxed{} = \boxed{10}$$



$$\boxed{} + \boxed{} = \boxed{16}$$

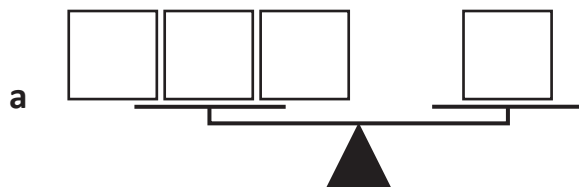
$$\boxed{2} \times \boxed{} = \boxed{16}$$



$$\boxed{} + \boxed{} + \boxed{} = \boxed{}$$

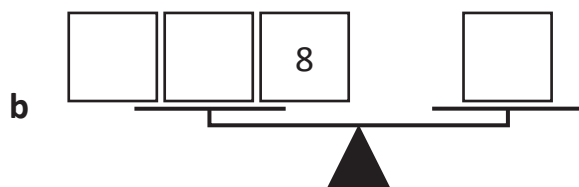
$$\boxed{} \times \boxed{} = \boxed{27}$$

2 Complete the balance scale and write the corresponding number sentences.



$$\boxed{} + \boxed{} + \boxed{} = \boxed{36}$$

$$\boxed{3} \times \boxed{} = \boxed{}$$



$$\boxed{} + \boxed{} + \boxed{} = \boxed{}$$

$$\boxed{3} \times \boxed{} = \boxed{}$$

Skills	Not yet	Kind of	Got it
• Can complete a balance model			
• Can write corresponding addition and multiplication number sentences			

Series D – Multiplication and Division – Student Progress Record

Name _____ Class _____ Date _____

What went well: _____

What I need to improve: _____



Series D – Multiplication and Division – Student Progress Record

Name _____ Class _____ Date _____

What went well: _____

What I need to improve: _____

Series D – Multiplication and Division

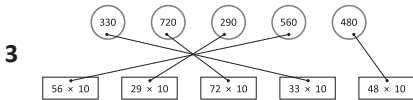
ASSESSMENT ANSWERS

Page 6

- 1a 25
b 20
c 30
d 100
e 45
f 60
g 10
h 90
i 40
j 30

2

×	8	3	6	10	1	9	4	7	5	2
10	80	30	60	100	10	90	40	70	50	20

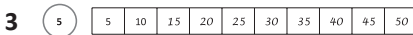


Page 7

- 1a 32
b 36
c 4
d 24
e 16
f 8
g 6
h 10

2

	3	8	2	5	9	10	6
× 3	9	24	6	15	27	30	18
× 4	12	32	8	20	36	40	24
× 8	24	64	16	40	72	80	48



Page 8

- 1a 60; 30; 60
b 52; 26; 52

2a $10 \times 5 = 50$

$50 + 15 = 65$

So, $13 \times 5 = 65$

$3 \times 5 = 15$

b $10 \times 8 = 80$

$80 + 24 = 104$

So, $13 \times 8 = 104$

$3 \times 8 = 24$

3a $3 \times 29 \rightarrow 3 \times 30 = 90 - 3$

So, $3 \times 29 = 87$

b $4 \times 39 \rightarrow 4 \times 40 = 160 - 4$

So, $4 \times 39 = 156$

Page 9

1a $18 \div 3 = 6$

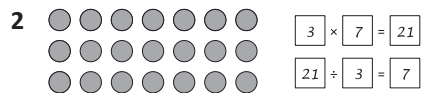
b $20 \div 4 = 5$

c $30 \div 10 = 3$

d $35 \div 5 = 7$

e $56 \div 8 = 7$

f $60 \div 10 = 6$



Page 10

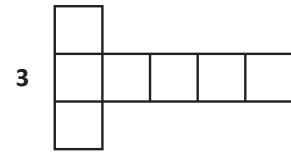
- 1 10; 30; 200

a 200

b Multiply the number of packets by 10.

2a RULE: + 3

b RULE: - 3



a 13

b This pattern grows by 1 each time.

Page 11

1a $5 + 5 = 10$

$2 \times 5 = 10$

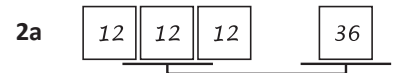


$8 + 8 = 16$

$2 \times 8 = 16$

c $9 + 9 + 9 = 27$

$3 \times 9 = 27$



$12 + 12 + 12 = 36$

$3 \times 12 = 36$



$8 + 8 + 8 = 24$

$3 \times 8 = 24$

Series D – Multiplication and Division

Topic	Reference	Strand	Substrand	Objective
Multiplication Facts	3C6	Number	Calculation	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
Mental Multiplication Strategies	3C7	Number	Calculation	Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods.
Division	3C7	Number	Calculation	Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods.
Patterns and Functions	3C8	Number	Calculation	Solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.
Equations and Equivalence	3C8	Number	Calculation	Solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.
Games and Investigations	3C8	Number	Calculation	Solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.