



Unit 1 – Numbers to 100

I Numbers to 20

→ pages 6–8

- 4 9 11 16 17
- Children should cross out 0, 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 and circle 18 and 19.
- 9
 - 16
 - 12
 - 8
- 19
 - 14
 - 13
 - 11
 - 6
 - 8
- 3, 10, 11
 - 6, 16, 20
 - 6, 9, 14, 19

Reflect

9, 10, 11, 12, 13, 14

2 Count in 10s

→ pages 9–11

- 10, 20
 - 10, 20, 30
 - 10, 20, 30, **40**
 - 10, 20, 30, **40, 50**
 - 10, 20, 30, **40, 50, 60**
- 0 10 20 30 **40 50 60 70 80 90**
- Children should shade the following numbers:
10, 20, 30, 40, 50, 60, 70, 80, 90, 100.
- 20
 - 40
- Children should circle 6 rods.
 - Children should circle 7 rods.

Reflect

Children should count 10, 20, 30, 40, 50, 60, 70, 80, 90, 100.

3 Count in 10s and 1s

→ pages 12–14

- 53 cans
- 45 cubes
- 86 dots
- Yes Kat is correct.
- 52 birds
 - 40 fingers
 - 55 cakes
- 34
 - 66
- Arrangements will vary.

Reflect

The correct count is the one that ends in 56.

4 Recognise 10s and 1s

→ pages 15–17

- 30, 31, 32, 33, 34, 35
 - 30, 40, 50, 51, 52, 53
- 15
 - 80

3.

- 61
 - 38
- You need 60 cubes to make the tower.

Reflect

Pictures will vary.



5 Build a number from 10s and 1s

→ pages 18–20

- Children should draw 3 rods.
 - Children should draw 4 rods.
 - Children should draw 5 rods.
 - Children should draw 7 rods.
- Children should draw 2 rods.
 - Children should draw 2 rods and 2 cubes.
 - Children should draw 2 rods and 9 cubes.
 - Children should draw 4 rods.
 - Children should draw 4 rods and 2 cubes.
 - Children should draw 4 rods and 9 cubes.

3.

35		3 tens and 3 ones
53		5 tens and 3 ones
33		3 tens and 3 ones
30		3 tens

- 45 is 4 tens and 5 ones.
 - 62 is 6 tens and 2 ones.
- Answers will vary, but will all have 4 rods in the illustration.
 - Answers will vary but will all have 4 cubes in the illustration.

Reflect

All of the numbers contain a 3. Two of the numbers have 3 tens. They all have different 1s digits.

6 Use a place value grid

→ pages 21–23

- 25 36 34
- Children should draw:
 - 1 rod and 7 cubes;
 - 3 rods and 7 cubes;
 - 5 rods and 7 cubes.
- 31
 - 62

4.

Tens	Ones
4	6

Tens	Ones
5	8

Tens	Ones
4	3

Tens	Ones
5	9

5.

Tens	Ones
1	3

Tens	Ones
3	1

Tens	Ones
5	3

Tens	Ones
1	5

Tens	Ones
5	1

Tens	Ones
3	5

6. Mia could be thinking of 54 or 65.

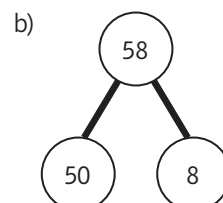
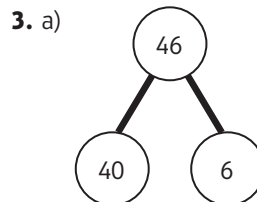
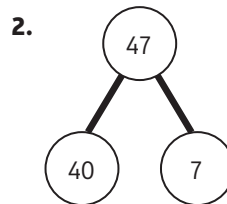
Reflect

The 8 in 85, 80 and 82 stands for 8 tens. The 8 in 8 stands for 8 ones.

7 Partition numbers to 100

→ pages 24–26

- 4
 - 30 and 2





4. a) 36
b) 71
c) 42
d) 12

5. a) 25
b) 90

6. Children should put a cross by the first part whole model. The bottom left circle should contain 20. The second and fourth part-whole models should have a tick. The third should have a cross. The bottom left circle should say 20 instead of 4 and the right circle should read 4 not 2.

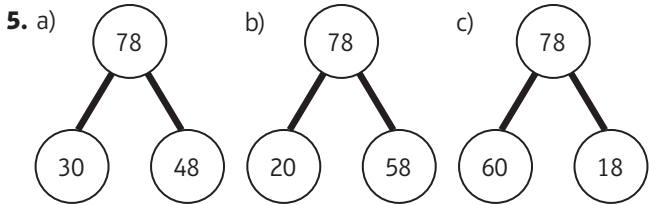
Reflect

Answers and drawings will vary.

8 Partition numbers flexibly within 100

→ pages 27–29

1. a) 6
b) 16
c) 26
2. a) 3
b) 13
c) 30 and 23
3. 8, 18, 28
4. 29, 18, 54



Reflect

Answers will vary depending on how children partition 64.

9 Write numbers to 100 in expanded form

→ pages 30–31

1. a) $30 + 7 = 37$
b) $20 + 9 = 29$
2. Children should draw a line between $40 + 6$ and 46, between $30 + 5$ and 35, between $60 + 1$ and 61, and between $50 + 3$ and 53.

3. a) $17 = 10 + 7$ d) $20 + 5 = 25$
b) $38 = 30 + 8$ e) $30 + 8 = 38$
c) $71 = 70 + 1$ f) $60 + 2 = 62$

4. a) $24 = 20 + 4$
 $34 = 30 + 4$
 $44 = 40 + 4$
- b) $73 = 70 + 3$
 $75 = 70 + 5$
 $79 = 70 + 9$

5. $39 = 30 + 9$
 $57 = 50 + 7$
 $10 + 3 = 13$

6. No, Eddie isn't correct. $7 + 30 = 37$.

7. $53 = 50 + 3$
 $53 = 40 + 13$
 $53 = 30 + 23$
 $53 = 20 + 33$

Reflect

Answers will vary depending on how children partition 43.

10 10s on a number line to 100

→ pages 33–35

1. 10 50 80
- 2.
3. 0 10 20 30 40 50 60 70 80 90 100
4. a)

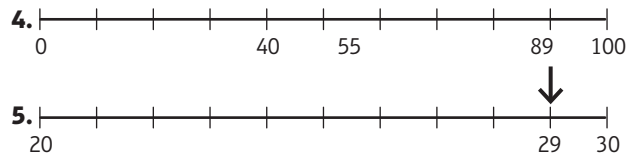
b) Children should draw four 10s rods in the first empty box, seven 10s rods in the middle box and ten 10s rods in the right-hand box.

5. a) b)



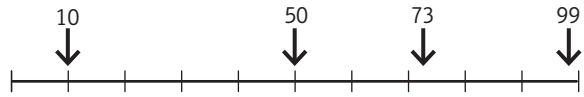
Reflect

Check children’s number lines to ensure they are marked appropriately from 0 to 100, with each 10 marked and labelled.



6. 20 50 80

Reflect

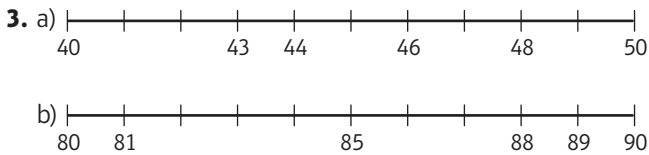


50 easiest as it’s exactly half-way. 73 most difficult.

11 10s and 1s on a number line to 100

→ pages 36–38

- 26
- Children fill in 21, 22, 23, 24, 25, 26, 27, 28 and 29.
 - Children fill in 61, 62, 63, 64, 65, 66, 67, 68 and 69.
 - Children fill in 91, 92, 93, 94, 95, 96, 97, 98, 99.



4.

Tens	Ones
9	1

Tens	Ones
9	5

Tens	Ones
9	8

- 5 15 25 35 45 55 65 75 85 95
 - 9 19 29 39 49 59 69 79 89 99

Reflect

Children draw a number line and indicate 52, 55, 58 and 59 on it.

12 Estimate numbers on a number line

→ pages 39–41

- 10 70
 - 25 95
 - 73 79
- No. The arrow is pointing to around 52 or 53.
- 38 72

13 Compare numbers (1)

→ pages 42–44

- Ben
 - Kat
- Jacob has **fewer** cubes than Fred.
- 33 is less than 52
 - 21 is more than 7
 - 50 is more than 43
- 70 is more than 40.
 - 45 is less than 60.
- Anya

Reflect

Children talk to each other about the meanings of fewer, less, more and greater.

14 Compare numbers (2)

→ pages 45–47

- Children should circle 65.
 - Children should circle 54.
 - Children should circle 76.
- Children should circle 21.
 - Children should circle 64.
 - Children should circle 4.
- $40 < 70$
 - $32 < 35$
 - $48 < 84$
 - $19 < 90$
 - $50 > 35$
 - $26 = 26$
 - $70 < 75$
 - $75 > 70$
- 3 tens is **equal to** 30.
 - 5 tens is **greater than** 4 tens and 8 ones.
 - 90 is **less than** 98.
 - 2 tens and 3 ones is **less than** 27.



5. a) Several possible answers, e.g. 1, 2, 3 or 4
b) Several possible answers, e.g. 6, 7, 8, 9
c) 9
6. Beth's number is 53.

Reflect

Children's explanation should refer to 87 having more tens than 78.

15 Order numbers

→ pages 48–50

1. a) 21
b) 51
c) 14
2. a) 80
b) 77
c) 73
3. a) $30 < 50 < 90$
b) $28 < 48 < 68$
c) $21 < 24 < 28$
d) $9 < 55 < 58$
4. a) $90 > 50 > 30$
b) $68 > 48 > 28$
c) $28 > 24 > 21$
d) $58 > 55 > 9$
5. a) Any number between 76 and 84.
b) Multiple possible answers.
c) Multiple possible answers.
d) Multiple possible answers.
6. Several possible answers, e.g. $42 < 50 < 53$ or $24 < 35 < 50$.

Reflect

Children should explain that they look at the 10s digits first and then, if they are the same, they look at the 1s digits.

16 Count in 2s, 5s and 10s

→ pages 51–53

1. a) 8, 10, 12, 14
b) 15, 20, 25, 30
c) 30, 40, 50, 60, 70
2. a) 8, 10, 12, 14, 16, 18, 20
b) 50, 60, 70, 80, 90, 100
c) 25, 30, 35, 40
d) 64, 66, 68
e) **75, 70**, 65, 60, **55, 50**

3. 75 straws
4. Children should circle 25 and 45.
5. They won't say any numbers the same as Leo is counting down from 50 and Eva is counting up.

Reflect

Answers will vary.

17 Count in 3s

→ pages 54–56

1. 9 ladybirds
2. 3, 6, 9, 12, 15, 18 cubes
3. 12, 15, 18, 21, 24, 27, 30
4. a) 9
b) 12
5. Children should shade 3, 6, 9, 12, 15, 18, 21, 24, 27 and 30.
6. a) **9, 12, 15**
b) **24, 27, 30**
c) **27, 30, 33**
d) 18, **21, 24**

Reflect

Jodie will say 3, 9, 12, 15, 30.

My journal

→ page 57

Diagram C shows a different number.

Power play

→ page 58

Starting at 10 and counting in 5s, you will land on the 100 in the middle of the bottom row.

If you count in 2s, you will land on the 100 in the bottom right-hand corner.



Unit 2 – Addition and subtraction (I)

I Fact families

→ pages 59–61

- $2 + 5 = 7$
 $5 + 2 = 7$
 $7 - 2 = 5$
 $7 - 5 = 2$
- $7 + 8 = 15$
 $8 + 7 = 15$
 $15 - 8 = 7$
 $15 - 7 = 8$
 - $9 + 4 = 13$
 $4 + 9 = 13$
 $13 - 4 = 9$
 $13 - 9 = 4$
- $3 + 7 = 10$
 - $10 - 3 = 7$
 - $10 - 7 = 3$
 - $10 - 7 = 3$
- A part-whole model with 11 in the top circle, 5 in the bottom left and 6 in the bottom right.
 - | | |
|--------------|--------------|
| $5 + 6 = 11$ | $11 - 6 = 5$ |
| $6 + 5 = 11$ | $11 - 5 = 6$ |
| $11 = 6 + 5$ | $6 = 11 - 5$ |
| $11 = 5 + 6$ | $5 = 11 - 6$ |
- $6 + 6 = 12$
 $12 = 6 + 6$
 $12 - 6 = 6$
 $6 = 12 - 6$
 - Because it's a double, there are only 4 facts as opposed to 8.

Reflect

- $9 + 8 = 17$
 $8 + 9 = 17$
 $17 = 8 + 9$
 $17 = 9 + 8$
 $17 - 9 = 8$
 $17 - 8 = 9$
 $8 = 17 - 9$
 $9 = 17 - 8$

2 Learn number bonds

→ pages 62–64

- $5 + 0 = 5$
 - $4 + 0 = 4$
 - $8 + 0 = 8$
 - $0 + 1 = 1$
 - $0 + 10 = 10$
 - $0 + 2 = 2$

- $2 + 1 = 3$
 - $7 + 1 = 8$
 - $9 + 1 = 10$
 - $1 + 5 = 6$
 - $1 + 6 = 7$
 - $5 - 1 = 4$
 - $10 - 1 = 9$
 - $2 - 1 = 1$

- $5 + 5 = 10$
 - $4 + 6 = 10$
 - $8 + 2 = 10$
 - $10 - 7 = 3$
 - $10 - 6 = 4$
 - $10 - 5 = 5$

- $4 + 4 = 8$
 - $5 + 4 = 9$
 - $3 + 3 = 6$
 - $3 + 4 = 7$

- Completed part-whole models with 10 in the first two wholes and 9 in the third whole.
 - $5 + 1 = 6$
 $4 + 2 = 6$
 $3 + 3 = 6$
 $6 - 1 = 5$
 $6 - 2 = 4$
 $6 - 3 = 3$

Reflect

Children's responses will vary depending on their level of confidence with number bonds.

3 Add and subtract two multiples of 10

→ pages 65–67

- $2 + 7 = 9$
 $7 = 9 - 2$
 - A completed part-whole model with 90 in the top circle, 20 in the bottom left and **70** in the bottom right.
 $20 + 70 = 90$
 $70 = 90 - 20$
- A completed part-whole model with **90** in the top circle, 20 in the bottom left and 70 in the bottom right.
 - A completed bar model with **80** in the top bar, 10 in the bottom left and 70 in the bottom right.
- $3 + 6 = 9$
 $30 + 60 = 90$
 $9 - 3 = 6$
 $90 - 30 = 60$
 - $9 = 4 + 5$
 $50 + 40 = 90$
 $90 - 50 = 40$
 - $40 + 10 = 50$
 $50 - 40 = 10$
 $50 - 10 = 40$



4. a) Completed part-whole models with 8 in the first whole, 9 in the second whole and 6 in the last whole.
 b) $20 + 40 = 60$
 $30 + 30 = 60$
 $10 + 50 = 60$
 $60 - 50 = 10$
 double $30 = 60$

Reflect

- $5 + 3 = 8$
 $30 + 50 = 80$
 $50 + 30 = 80$
 $8 - 5 = 3$
 $8 - 3 = 5$
 $80 - 50 = 30$
 $80 - 30 = 50$

4 Complements to 100 (tens)

→ pages 68–70

1. a) $90 + 10 = 100$
 b) $30 + 70 = 100$
 c) $80 + 20 = 100$
 d) $50 + 50 = 100$
2. a) A completed part-whole model with 100 in the top circle, 40 in the bottom left and 60 in the bottom right.
 b) A completed part-whole model with 100 in the top circle, 0 in the bottom left and 100 in the bottom right.
 c) A completed part-whole model with 100 in the top circle, 20 in the bottom left and 80 in the bottom right.
 d) A completed part-whole model with 100 in the top circle, 50 in the bottom left and 50 in the bottom right.
3. a) ✗
 b) ✓
 c) ✓
 d) ✗
4. 90 and 10; 50 and 50; 100 and 0; 20 and 80; 60 and 40; 70 and 30.
5. 60

Reflect

Children should begin to think about how number bonds to 10 correspond to number bonds to 100. For example, if you know $2 + 2 = 4$, you also know $20 + 20 = 40$.

5 Add and subtract 1s

→ pages 71–73

1. a) $23 + 4 = 27$
 b) $31 + 5 = 36$
 c) $45 + 2 = 47$
2. a) $34 + 3 = 37$ $51 + 7 = 58$
 b) $85 + 1 = 86$ $2 + 74 = 76$
3. a) $35 - 2 = 33$
 b) $26 - 4 = 22$
 c) $48 - 7 = 41$
 d) $37 - 2 = 35$
 e) $19 - 6 = 13$
 f) $29 - 9 = 20$
4. $23 + 4$ and $24 + 3$; $32 + 4$ and $4 + 32$; and $43 + 2$ and $42 + 3$.
5. a) $1 + 4 = 5$
 b) $21 + 4 = 25$
 c) $41 + 4 = 45$
 d) $51 + 4 = 55$
 e) $4 + 81 = 85$
 f) $18 - 5 = 13$
 g) $28 - 5 = 23$
 h) $48 - 5 = 43$
 i) $58 - 5 = 53$
 j) $78 - 5 = 73$
6. $17 + 1 = 18$
 $47 = 41 + 6$
 $31 = 39 - 8$
 $25 + 4 = 29$
 $45 - 5 = 40$
 $37 - 5 = 32$

Reflect

To solve $35 - 2 = 33$, you need to know $5 - 2 = 3$.
 To solve $35 + 2 = 37$, you need to know $5 + 2 = 7$.

6 Add by making 10

→ pages 74–76

1. $8 + 2 + 3 = 13$
 $8 + 5 = 13$
2. $7 + 3 + 4 = 14$
 $7 + 7 = 14$
3. $8 + 2 + 2 = 12$
 $8 + 4 = 12$
4. $8 + 2 + 4 = 14$
 $8 + 6 = 14$



5. $9 + 1 + 4 = 14$
 $9 + 5 = 14$.
 14 shells in total.
6. Greatest $9 + 8 = 17$
 Smallest $5 + 7 = 12$

Reflect

$5 + 5 + 2 = 12$
 $5 + 7 = 12$

7 Add using a number line

→ pages 77–79

1. a) $8 + 3 = 11$
 b) $8 + 6 = 14$
 c) $7 + 5 = 12$
 d) $9 + 4 = 13$
2. a) $5 + 9 = 14$
 b) $3 + 9 = 12$
 c) $9 + 9 = 18$
 d) $13 = 7 + 6$
3. Children should circle 6 + 6.
4. Kay is doing $7 + 4 = 11$.

Reflect

Answers will vary, but children should discuss adding 1 to 9 to make 10 and then adding 4 to make 14.

8 Add three 1-digit numbers

→ pages 80–82

1. a) $2 + 4 + 2 = 8$
 b) $1 + 6 + 3 = 10$
 c) $9 + 2 + 2 = 13$
 d) $8 + 2 + 3 = 13$
2. $7 + 6 + 4 = 17$
 There are **17** flowers.
3. a) A completed part-whole model with 12 in the top circle.
 b) A completed part-whole model with 12 in the top circle.
 c) A completed part-whole model with 2 in the middle bottom circle.
 d) A completed part-whole with 2 in the middle bottom circle.
4. Answers will vary, e.g. $6 + 3 + 3$; $5 + 5 + 2$; $8 + 2 + 2$; $10 + 1 + 1$.
5. a) $2 + 8 + 4 = 14$
 b) $14 = 6 + 2 + 6$
 c) $14 = 8 + 3 + 3$

Reflect

Answers will vary depending on the cards children choose.

9 Add to the next 10

→ pages 83–85

1. a) $9 + 1 = 10$
 b) $19 + 1 = 20$
 c) $29 + 1 = 30$
2. a) $6 + 4 = 10$
 $26 + 4 = 30$
 b) $8 + 2 = 10$
 $58 + 2 = 60$
3. a) $17 + 3 = 20$
 b) $51 + 9 = 60$
 c) $84 + 6 = 90$
4. a) $27 + 3 = 30$
 b) $23 + 7 = 30$
 c) $31 + 9 = 40$
 d) $39 + 1 = 40$
5. a) $18 + 2 = 20$
 b) $38 + 2 = 40$
 c) $58 + 2 = 60$
 d) $5 + 5 = 10$
 e) $25 + 5 = 30$
 f) $45 + 5 = 50$
6. a) A completed part-whole model with 40 in the middle bottom circle.
 A completed part-whole model with 41 in the middle bottom circle.
 b) A completed bar model with 80 in the middle bottom bar.
 A completed bar model with 81 in the middle bottom bar.

Reflect

Answers will vary.

10 Add across a ten

→ pages 86–88

1. There are 43 stars in total.
 $38 + 5 = 38 + 2 + 3 = 43$
2. a) $18 + 6 = 18 + 2 + 4 = 24$
 b) $16 + 6 = 16 + 4 + 2 = 22$
3. Children should draw another jump on the number line of 3 from 30 to 33.
4. a) $18 + 5 = 23$
 b) $43 + 8 = 51$



5. a) $84 + 7 = 84 + 6 + 1 = 91$
 b) $8 + 46 = 46 + 4 + 4 = 54$
6. Mary could partition 8 into 5 and 3. She could add 5 to 35 to make the next 10 (40) and then add a further 3.

Reflect

Children should refer to partitioning 8 into 6 and 2 and making 10 by adding the 6 first and then the 2.

II Subtract across a 10

→ pages 89–91

1. $13 - 3 - 2 = 8$
 $13 - 5 = 8$
2. a) $12 - 6 = 6$
 $12 - 2 - 4 = 6$
 b) $12 - 2 - 6 = 4$
3. a) $15 - 5 - 4 = 6$
 b) $11 - 6 = 5$
4. $14 - 6 = 14 - 4 - 2 = 8$
5. $15 - 5 - 2 = 8$
6. a) $14 - 9 = 5$
 b) $15 - 9 = 6$
 c) $12 - 8 = 4$
 d) $14 - 8 = 6$
 e) $17 - 8 = 9$

Reflect

$13 - 3 - 3 = 7$
 $13 - 6 = 7$

I2 Subtract from a 10

→ pages 92–94

1. a) $10 - 5 = 5$
 b) $20 - 5 = 15$
 c) $30 - 5 = 25$
2. a) $10 - 1 = 9$
 b) $10 - 2 = 8$
 c) $10 - 3 = 7$
 d) $10 - 4 = 6$
 e) $50 - 1 = 49$
 f) $30 - 3 = 27$
 g) $90 - 4 = 86$
 h) $70 - 1 = 69$
 i) $40 - 2 = 38$
 j) $80 - 3 = 77$
3. a) $10 - 6 = 4$
 b) $60 - 6 = 54$

4. a) $40 - 8 = 32$
 b) $40 - 2 = 38$
 c) $100 - 4 = 96$
 d) $100 - 9 = 91$
5. a) $30 - 7 = 23$
 b) $40 - 7 = 33$
 c) $60 - 7 = 53$
 d) $90 - 7 = 83$
 e) $30 - 9 = 21$
 f) $50 - 9 = 41$
 g) $70 - 9 = 61$
 h) $90 - 9 = 81$

6. $50 + 7$ and $60 - 3$; $50 + 4$ and $60 - 6$; $50 + 3$ and $60 - 7$;
 $60 + 4$ and $70 - 6$; $60 + 6$ and $70 - 4$; $60 + 2$ and $70 - 8$

Reflect

Row 1: 10 8 6 4 2 0

Row 2: 20 18 16 14 12 10

Row 3: 40 38 36 34 32 30

Row 4: 60 58 56 54 52 50

Row 5: 80 78 76 74 72 70

Row 6: 100 98 96 94 92 90

The 1s digit follows a pattern.

I3 Subtract a 1-digit number from a 2-digit number – across 10

→ pages 95–97

1. $42 - 2 - 4 = 36$
2. $33 - 3 - 2 = 28$
3. $24 - 4 - 4 = 16$
4. a) $36 - 9 = 36 - 6 - 3 = 27$
 b) $63 - 9 = 63 - 3 - 6 = 54$
 c) $71 - 6 = 71 - 1 - 5 = 65$
5. a) $65 - 8 = 57$
 b) $43 - 8 = 35$
6. a) $52 - 5 = 47$
 b) $62 - 5 = 57$
 c) $72 - 5 = 67$

Reflect

Hanna could partition 9 into 7 and 2 and subtract the 7 first and then the 2.



My journal

→ page 98

$$36 + 2 = 38$$

$$36 + 9 = 36 + 4 + 5 = 45$$

$$36 - 2 = 34$$

$$36 - 9 = 36 - 6 - 3 = 27$$

Power puzzle

→ page 99

Star = 5

Diamond = 95

Square = 72

Triangle = 67

$$63 + 5 = 68$$

$$5 + 95 = 100$$

$$22 + 50 = 72$$

$$72 - 5 = 67$$

Star, Triangle, Square, Diamond



Unit 3 – Addition and subtraction (2)

10 more, 10 less

→ pages 100–102

- a) 10 more than 24 is **34**.
b) 10 more than 35 is **45**.
- Max has **63** in total.
- a) 44, 54, 64, **74, 84**, 94
b) 7, 17, 27, **37, 47, 57, 67**, 77
c) 78, 68, 58, **48, 38, 28**, 18

10 less	Number	10 more
20	30	40
62	72	82
23	33	43
34	44	54

- a) 10 more than 25 is **35**.
b) **83** is 10 more than 73.
c) 10 less than 89 is **79**.
- 10 more than Hassan's number is **48**.
10 less than Hassan's number is **28**.

Reflect

Answers will vary depending on the numbers children choose.

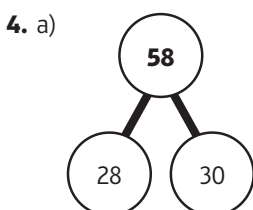
10 more than the numbers on the track: 58, 59, 60, 61, 62, 63

10 less than the numbers on the track: 38, 39, 40, 41, 42, 43

2 Add and subtract 10s

→ pages 103–105

- a) $28 + 30 = 58$
b) $42 + 20 = 62$
- a) $51 + 30 = 81$
b) $32 + 20 = 52$
c) $22 + 40 = 62$
d) $35 + 20 = 55$
- a) $53 - 20 = 33$
b) $94 - 50 = 44$
c) $76 - 30 = 46$



b)

84	
34	50

- a) $82 - 30 = 52$
b) $23 + 40 = 63$

6. a)

68	
50	18
38	30

b)

74	
4	70
20	54

Reflect

Answers will vary, e.g. $86 - 10 = 76$ or $96 - 20 = 76$ and $46 - 10 = 36$ or $66 - 30 = 36$.

3 Add two 2-digit numbers – add 10s and add 1s

→ pages 106–108

- a) **Five** 10s
b) **Six** 1s
c) $32 + 24 = 56$
- $17 + 42 = 59$
- $31 + 45 = 76$
- a) $25 + 23 = 48$
b) $53 + 12 = 65$
c) $72 + 11 = 83$
d) $43 + 43 = 86$
- a) There are **3** tens.
b) There are **12** ones.
c) $28 + 14 = 42$
- a) $35 + 27 = 62$
b) $28 + 36 = 64$
c) $49 + 17 = 66$

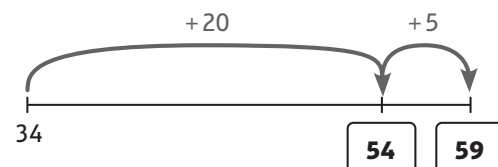
Reflect

$32 + 42 = 74$. Children should discuss adding the 10s digits first and then the 1s digits.

4 Add two 2-digit numbers – add more 10s then more 1s

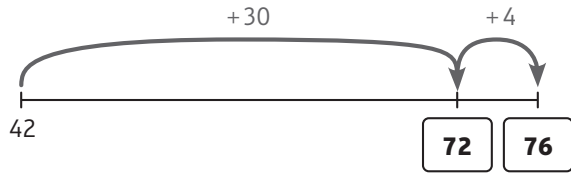
→ pages 109–111

- a) $34 + 25 = 59$

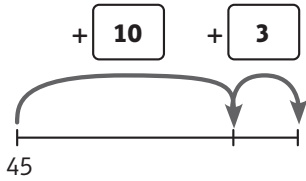




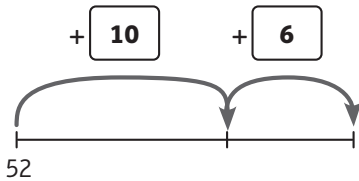
b) $42 + 34 = 76$



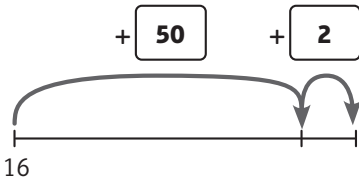
2. a) $45 + 13 = 58$



b) $52 + 16 = 68$

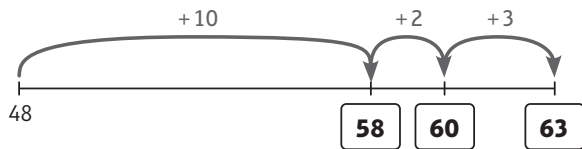


c) $16 + 52 = 68$



In b) and c), the same numbers are used but the opposite starting point and a different number of jumps are used each time.

3. $48 + 15 = 63$



- 4. a) $26 + 18 = 44$
- b) $35 + 27 = 62$
- c) $45 + 5 = 50$
- d) $18 + 28 = 46$

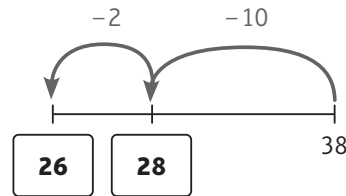
Reflect

$17 + 67 = 84$. Children should discuss adding the 10s digits first and then the 1s digits using a number line with multiple jumps.

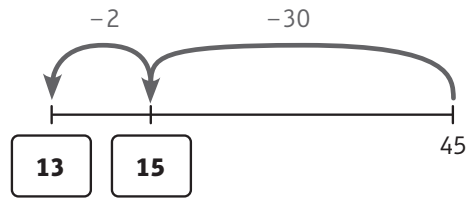
5 Subtract a 2-digit number from a 2-digit number – not across 10

→ pages 112–114

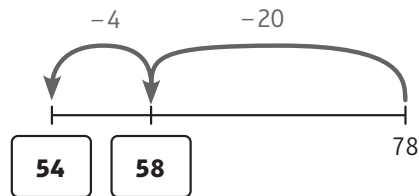
1. a) $38 - 12 = 26$



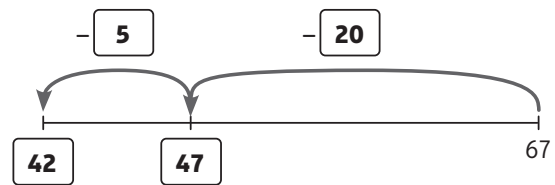
b) $45 - 32 = 13$



c) $78 - 24 = 54$



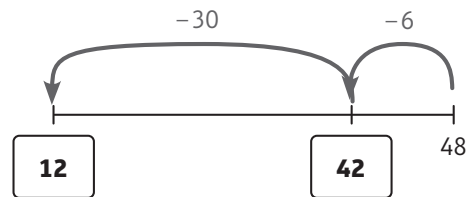
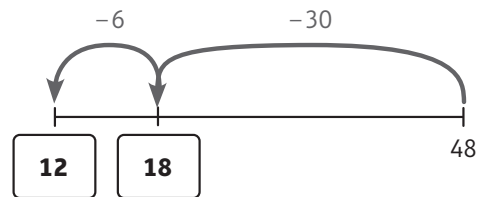
2. a) $67 - 25 = 42$



b) $78 - 25 = 53$

c) $58 - 32 = 26$

3. $48 - 36 = 12$



4. $54 - 23 = 31$

Reflect

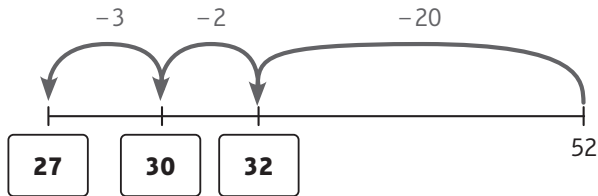
$74 - 23 = 51$. Children should discuss using a number line with multiple jumps.



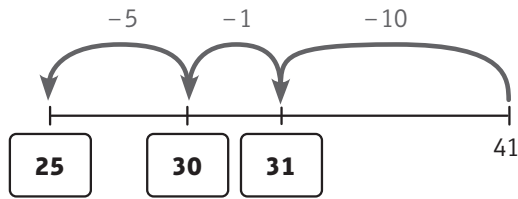
6 Subtract a 2-digit number from a 2-digit number – across 10

→ pages 115–117

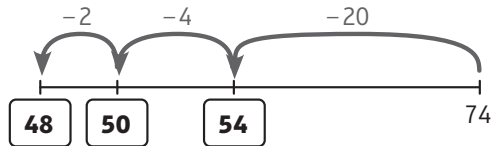
1. a) $52 - 25 = 27$



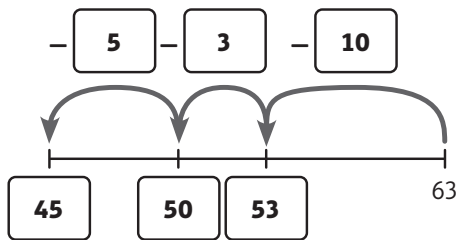
b) $41 - 16 = 25$



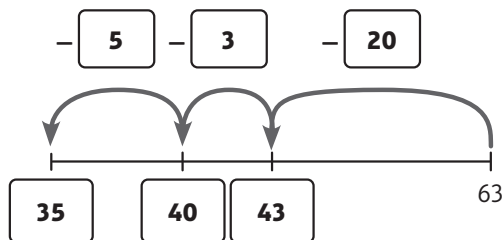
c) $74 - 26 = 48$



2. a) $63 - 18 = 45$



b) $63 - 28 = 35$



3. a) $45 - 28 = 17$

b) $71 - 15 = 56$

4. a) $48 - 36 = 12$

b) $48 - 12 = 36$

Reflect

$43 + 15 = 58$

$45 + 18 = 63$

$45 - 12 = 33$

$45 - 17 = 28$

Children should discuss adding or subtracting the 10s digit first and then the 1s digit using a number line and multiple jumps.

7 How many more? How many fewer?

→ pages 118–120

1. a) 7 is **4** more than 3.

b) 6 is **2** less than 8.

2. a) 20 is **6** more than 14.

14 is **6** less than 20.

b) 19 is **9** more than 10.

10 is **9** less than 19.

3. a) $35 - 25 = 10$. The difference between 35 and 25 is **10**.

b) $100 - 10 = 90$. The difference between 10 and 100 is **90**.

4. a) 7 is 2 less than **9**.

b) **8** is 5 more than 3.

c) The difference between 9 and 6 is **3**.

d) 8 is **0** more than 8.

5. a) 4

b) 9

c) 2

d) 59

Reflect

Children's answers will vary depending on their starting numbers.

8 Subtraction – find the difference

→ pages 121–123

1. a) The difference between 24 and 20 is **4**.

b) $24 - 20 = 4$

2. a) $10 - 4 = 6$

b) $12 - 2 = 10$

c) $20 - 3 = 17$

3. a) 3

b) 6

c) 9

d) $51 - 48 = 3$

$93 - 87 = 6$

$65 - 56 = 9$



4. Mo has 3 more points.
5. Answers will vary, e.g. 18 and 8, $18 - 8 = 10$.

Reflect

Answers will vary.

9 Compare number sentences

→ pages 124–126

1. a) $11 + 1 = 10 + 2$
 b) $6 + 6 = 7 + 5$
 c) $6 + 7 = 7 + 6$
 d) $10 + 6 = 8 + 8$
2. a) $4 + 5 < 4 + 6$
 b) $6 + 3 = 5 + 4$
 c) $7 - 2 > 7 - 4$
3. a) $8 + 8 > 7 + 7$
 b) $16 + 3 > 16 - 1$
 c) $9 - 5 > 9 - 8$
 d) $10 + 2 = 9 + 3$
4. a) Various answers possible, e.g. $3 + 7 > 3 + 5$
 b) Various answers possible, e.g. $6 - 2 < 6 - 1$
 c) Various answers possible, e.g. $5 + 14 > 3 + 14$
 d) $12 + 6 = 6 + 12$
5. $7 + 6 < 6 + 8$ $14 - 8 > 14 - 10$
 $7 + 6 < 6 + 9$ $14 - 9 > 14 - 10$

Reflect

Various answers possible, e.g. $2 + 3 < 4 + 5$, $5 + 3 = 2 + 6$

10 Missing number problems

→ pages 127–129

1. a) $5 + 4 = 9$
 b) $6 + 4 = 10$
 c) $2 + 18 = 20$
 d) $30 + 20 = 50$
 e) $60 + 10 = 70$
 f) $60 + 30 = 90$
2. a) $25 + 5 = 30$
 b) $36 + 3 = 39$
 c) $2 + 18 = 20$
 d) $21 + 50 = 71$
3. a) $10 - 5 = 5$
 b) $8 - 2 = 6$
 c) $20 - 3 = 17$
 d) $30 - 20 = 10$
 e) $70 - 30 = 40$
 f) $100 - 80 = 20$

4. a) $25 - 5 = 20$
 b) $89 - 7 = 82$
5. a) $35 - 5 = 30$
 b) $80 - 5 = 75$
6. Triangle = 85
 Heart = 33
 $85 - 33 = 52$

Reflect

All three are missing a part.

11 Mixed addition and subtraction

→ pages 130–132

1. a) 60
 b) 37
 c) 9
 d) 36
2. Jan sells **88** cards in total.
3. There are **46** children.
4. The missing number is **2**.
5. 29

Reflect

Questions will vary, but the third number is 8, e.g. $17 + 8 = 25$ or $25 - 17 = 8$.

12 Two-step problems

→ pages 133–135

1. Katie's mum has **23** flowers.
2. There are **22** cars altogether.
3. Sam scored **27** goals more than Jan.
4. The total of their ages is **66**.
5. There are **44** more people on the second bus than on the first.

Reflect

Children's personal response will vary.



My journal

→ page 136

The part-whole model is the odd one out as it totals 75.
The other two total 65.

Power puzzle

→ page 137

Answers will vary. For example:

Pile 1: 9, 6

Pile 2: 8, 3, 4

Pile 3: 7, 5, 2, 1

Yes, you can solve it with equal piles. For example:

Pile 1: 1, 5, 9

Pile 2: 3, 4, 8

Pile 3: 2, 6, 7

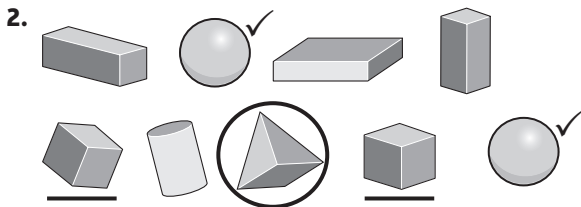


Unit 4 – Properties of shapes

I Recognise 2D and 3D shapes

→ pages 138–140

- a) Check children colour in the 3 triangles.
b) Check children colour in the 3 squares.



- There are **10** cuboids, **1** pyramid and **6** spheres.
- Sara will draw a **circle**.
Mo will draw a **triangle**.

Reflect

- Children could name different 2D and 3D shapes.
- 2D shapes: square, rectangle, circle, triangle, semi-circle.
 - 3D shapes: cube, cuboid, sphere, pyramid.

2 Count sides on 2D shapes

→ pages 141–143

Shape	Name	Number of sides
	triangle	3
	pentagon	5
	square	4
	rectangle	4
	hexagon	6

- Shape D has **3** sides
Shape A has **4** sides
Shape E has more than six sides.
Shape C has 5 sides
Shape B has an even number of sides.
- A: **5** sides
B: **3** sides
C: **4** sides
- a) 15
b) Check to see if children draw 3 quadrilaterals.

Reflect

The second shape is the odd one out as it has six sides and all the rest have five.

3 Count vertices on 2D shapes

→ pages 144–146

- 3 vertices: Both triangles.
4 vertices: The square, rectangle and kite.
5 vertices: Both pentagons and the arrow.

2.

Shape	Number of vertices
	4
	3
	5
	6

- A **pentagon** has 5 vertices and 5 sides.
A shape with 4 vertices could be a **rectangle** or a **square**.
A **triangle** has fewer vertices than a square.
- Answers will vary but might include that one of the dots the triangle touches is not a vertex and that a triangle has 3 vertices.
- A hexagon has **6** sides and **6** vertices.
- a) Check to ensure children draw two 4-sided shapes.
b) Check to ensure children draw two 5-sided shapes.

Reflect

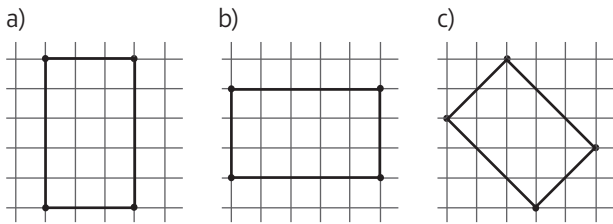
Both are 6-sided shapes.
A is a regular hexagon, B has sides of different length.

4 Draw 2D shapes

→ pages 147–149

- a) triangle
b) square
c) triangle
d) triangle
e) square
f) rectangle

2. Check to ensure children draw rectangles each time.



3. Check to ensure children draw the three triangles.
4. Answers will vary but ensure children draw squares.

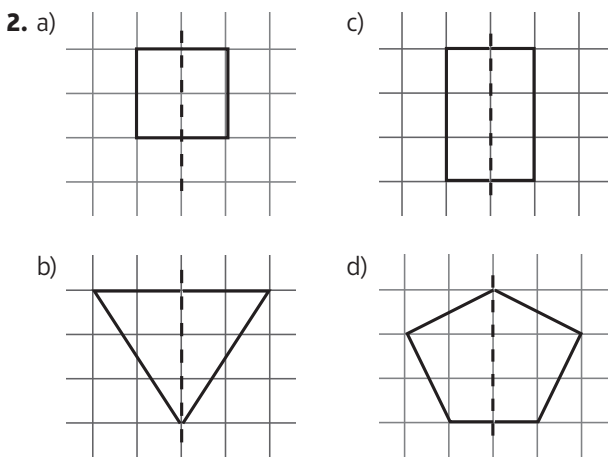
Reflect

Answers will vary but might mention 3 vertices and 3 sides. Check to see if children's instructions result in a drawn triangle.

5 Lines of symmetry on shapes

→ pages 150–152

1. Children draw a line of symmetry on each drawing.



3. The first folded shape is the square, the second folded shape is the triangle, the third folded shape is the rectangle and the fourth folded shape is the circle.
4. Tick, tick, cross, cross, tick
5. Answers will vary depending on the shapes the children have chosen.

Reflect

Answers will vary. For example: square, rectangle, kite.

6 Sort 2D shapes

→ pages 153–155

1. From left to right. Top row: polygon, not polygon, polygon, not polygon. Bottom row: polygon, not polygon.
2. E, B, A, C, D.
3. First group of shapes: 5 vertices.
Second group of shapes: fewer than 5 vertices.
Third group: curved sides.
4. Answers will vary.
A shape with 3 vertices: triangle.
A shape with 4 vertices: square, rectangle, kite.
5. Different answers are possible.
 - Top left group: children should draw any triangle.
 - Top right group: children should draw any quadrilateral (or polygon).
 - Bottom left group: children should draw shapes with 1 line of symmetry.
 - Bottom right group: children should draw pentagons.

Reflect

Children could sort the shapes into two equal groups using different criteria. For example:

- Polygons with an odd number of sides (triangle and two pentagons) and polygons with an even number of sides (square, hexagon and rectangle).
- Shapes with less than 5 sides (triangle, square, rectangle) and shapes with more than 5 sides (two pentagons and a hexagon).

7 Make patterns with 2D shapes

→ pages 156–158

1. Children should draw loops round the following groups of shapes:
 - a) triangle, pyramid, pentagon (done for them)
 - b) triangle, pentagon
 - c) pentagon, triangle, pyramid
 - d) pentagon, triangle, pentagon, pyramid
2. Children should circle the following set of shapes:
 - a) Second set (square, triangle, triangle)
 - b) Second set (circle ... circle)
3.

a) 7: rhombus	8: circle
b) 7: rhombus	8: circle
c) 7: triangle pointing downwards	8: triangle pointing upwards
d) circle	

4. Children should continue the pattern as follows:

Top sequence:



Bottom sequence:



5. Children should draw the following shapes into the grids:

- a) Third row, second shape: small, shaded square.
Fourth row, first shape: small, unshaded pentagon.
Fourth row, fourth shape: large, shaded pentagon.
- b) Second row, second shape: large, unshaded pentagon.
Third row, fourth shape: small, shaded square.
Fourth row, third shape: large, shaded triangle.

Reflect

Children could draw many different patterns.

8 Count faces on 3D shapes

→ pages 159–161

1. cube 6 faces
 pyramid 5 faces
 cuboid 6 faces
 pyramid 4 faces
2. Children should have matched the shapes to their faces as follows:
Cube: second set of faces (6 squares)
Cuboid: fourth set of faces (4 rectangles and 2 squares)
Square-based pyramid: third set of faces (1 square and 4 triangles)
Tetrahedron (triangle-based pyramid): first set of faces (4 triangles)
3. A cylinder has 2 circle faces and 1 curved surface.
A sphere has 0 faces and 1 curved surface.
A hemisphere and a cone both have 1 circle face and 1 curved surface.
4. First child: C, C and C
 Second child: A, C and D
5. a) $6 \times 2 = 12$
 b) Cylinder

Reflect

Answers will depend on the children's choice of shape. For example, a cube has 6 square faces.

9 Count edges on 3D shapes

→ pages 162–164

1. a) 8
 b) 12
 c) 6
2. a) 12
 b) B, C and D
 c) D
3. A **cube** has 6 faces and 12 edges.
 A **triangular prism** has 5 faces and 9 edges.
 A **square-based pyramid** has 5 faces and 8 edges.
4. A pentagonal prism has **15** edges.
 A hexagonal prism has **18** edges.
 This prism has **12** edges.
 This prism has **9** edges.
5. a) Maddy used **24** sticks.

Reflect

Answers will vary. For example: the faces of a shape are flat surfaces and the edges of a shape are the lines where the faces meet.

10 Count vertices on 3D shapes

→ pages 165–167

1. 4, 0, 5
2. 6, 8, 10, 12
3. < 5 vertices: hemisphere, cylinder, cone
 > 5 vertices: cube, cuboid, triangular prism
 5 vertices: square-based pyramid
4. Children should circle:
 a) cube, triangular prism
 b) cube, square-based pyramid, tetrahedron (triangle-based pyramid)
5. First shape: faces = 5, edges = 8, vertices = 5.
 Second shape: faces = 6, edges = 10, vertices = 6.
 Third shape: faces = 7, edges = 12, vertices = 7.

Reflect

Answers will vary depending on the shape children have chosen. For example: *My favourite shape is a triangular prism. It has 6 vertices.*



II Sort 3D shapes

→ pages 168–170

- Has a curved surface: the square-based pyramid does not belong in this group.
Has more than 1 square face: the tetrahedron (triangle-based pyramid) does not belong in this group.
Has fewer than 6 vertices: the square-based pyramid does not belong in this shape.
- Children should circle all of the shapes except the cylinder.
 - Children should have circled the tetrahedron (triangle-based pyramid) and the cylinder.
- Children should tick the sphere.
- Children could sort the shapes in different ways.
For example:
 - Has a curved surface (F). Does not have a curved surface (all other shapes).
 - Has an odd number of vertices (E). Does not have an odd number of vertices (all other shapes).
 - Has fewer than 5 sides (B, F). Has 5 sides or more (A, C, D, E)
- Fewest to most edges: D, A, E, B and C.
Fewest to most vertices: D, A, E, B and C.

Reflect

Children could sort the shapes in different ways.
For example:

- Has at least 1 triangular face (tetrahedron and triangular prism). Has no triangular faces (cube and cylinder).
- Every face is the same shape (cube and tetrahedron). Not every face is the same shape (cylinder and triangular prism).

I2 Make patterns with 3D shapes

→ pages 171–173

- Missing shapes from left to right:
 - cylinder
 - cone
- Cylinder
- Answer will vary depending on the pattern the children make.
- a) and b) Answers will vary depending on the patterns the children make.
- a) and b) The following answers are possible:
 - Cube, tetrahedron (triangle-based pyramid), cube – 30 edges in pattern.

- Cuboid, tetrahedron (triangle-based pyramid), cuboid – 30 edges in pattern.
- Square-based pyramid, cube, square-based pyramid – 28 edges in pattern.
- Square-based pyramid, cuboid, square-based pyramid – 28 edges in pattern.

Reflect

In a symmetrical pattern, the shapes have to be the same on each side around the middle of the pattern.
In a repeating pattern, a group of shapes is repeated again and again.

My journal

→ page 174

If children cut off one of the square's corners, they produce a pentagon and a triangle. Children could then cut off a corner from the triangle to create a smaller triangle, a quadrilateral and a pentagon.

Alternatively, children could cut the square from side to side to produce two quadrilaterals. By cutting a corner off from either quadrilateral, children will end up with a pentagon, a quadrilateral and a triangle.

Power puzzle

→ page 175

With 24 cubes, children could create a $1 \times 1 \times 24$ cuboid, a $1 \times 2 \times 12$ cuboid, a $1 \times 3 \times 8$ cuboid, a $1 \times 4 \times 6$ cuboid, a $2 \times 2 \times 6$ cuboid or a $2 \times 3 \times 4$ cuboid. In order to find all the possibilities, children need to understand that cuboids need to have 6 faces and that the faces can be square or oblong.

With 27 cubes, children can create a $1 \times 1 \times 27$ cuboid, a $1 \times 3 \times 9$ cuboid or a $3 \times 3 \times 3$ cuboid. To find all three, children need to understand that a cube is a special type of cuboid.