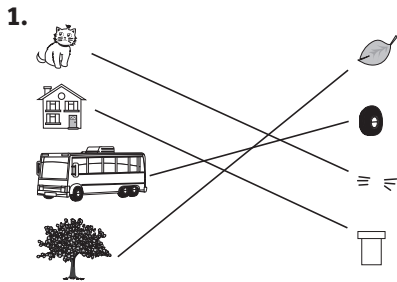


Unit 10 – Fractions

I Introducing parts and wholes

→ pages 6–8



2. a) Children should draw a picture of a whole snowman.
b) Children should draw four parts of the snowman. For example, hat, eyes, carrot nose, scarf.
3. The truck is the whole.
Accept any three answers from:
The wheel is a part.
The light is a part.
The bumper is a part.
The window is a part.
4. Children should provide **three** examples of whole things that a window could form part of. For example, a house, a ship, a car, a school, a shop.
5. a) Children should provide relevant whole and part sentences. For example: 'The flower is the whole'; 'The petals are a part'.
b) The swing is the whole. The seat is a part.

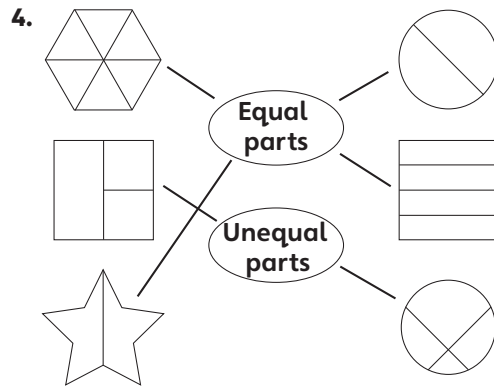
Reflect

Children's answers will vary. For example, the whiteboard is the whole, the pen is a part; the table is the whole, the leg is a part.

2 Equal and unequal parts

→ pages 9–11

1. a) There are **2** equal parts.
b) There are **3** equal parts.
c) There are **4** equal parts.
2. a) Equal parts.
b) Unequal parts.
c) Unequal parts (though some children may say equal): for this question it is difficult to say just by looking at the artwork.
3. There are 12 biscuits and 4 plates. Children should draw 3 biscuits on each of the 4 plates.



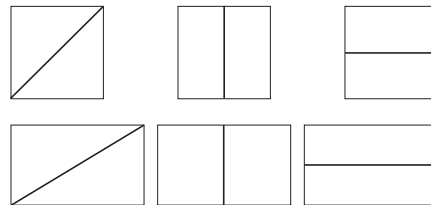
Reflect

Children should fold two pieces of paper; one into equal parts and the other into unequal parts. Check children understand the difference between equal and unequal parts.

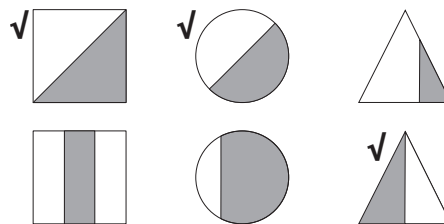
3 Recognise a half

→ pages 12–14

1. a) Check children accurately trace over the dotted lines provided.
b) Check children accurately write $\frac{1}{2}$.
2. a)–d) Check children have shaded half of each shape.
3. Children should split each shape into equal halves in **three** different ways. For example:

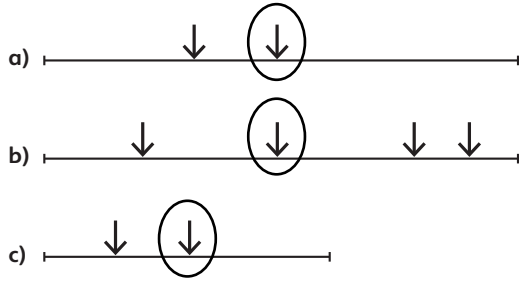


4. Children should tick the following shapes:





5. Children should circle the following arrows:



Reflect

Check children can accurately fold a strip of paper into equal halves.

4 Find a half

→ pages 15–17

1. a) $\frac{1}{2}$ of 6 is **3**.
 b) $\frac{1}{2}$ of 8 is **4**.
 c) $\frac{1}{2}$ of 12 is **6**.
2. a) $\frac{1}{2}$ of 16 is **8**.
 b) $\frac{1}{2}$ of 18 is **9**.
3. a) Check children accurately shade half of the shape (5 of the 10 squares).
 $\frac{1}{2}$ of 10 is **5**.
 b) Check children accurately shade half of the shape (10 of the 20 squares).
 $\frac{1}{2}$ of 20 is **10**.
4. a) Check children accurately circle half of the stars (12 of the 24 stars).
 $\frac{1}{2}$ of 24 is **12**.
 b) Check children accurately circle half of the balls (9 of the 18 balls).
 $\frac{1}{2}$ of 18 is **9**.
5. a) $\frac{1}{2}$ of **6** = 3.
 b) $\frac{1}{2}$ of **22** = 11.
 c) $\frac{1}{2}$ of **14** = 7.
 d) $\frac{1}{2}$ of **26** = 13.

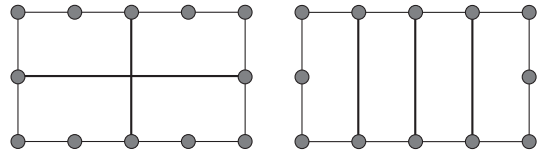
Reflect

There are 9 sweets to share between 2 people. Tom and Mo cannot share the sweets equally as there is an odd number, so they would have 4 each but with 1 sweet left over.

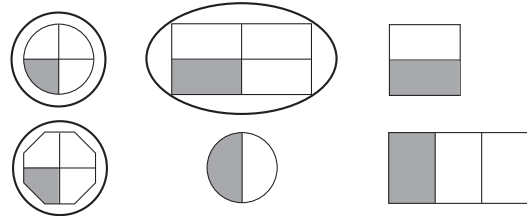
5 Recognise a quarter

→ pages 18–20

1. a) Check children accurately trace over the dotted lines provided.
 b) Check children accurately write $\frac{1}{4}$.
2. Check children have shaded one quarter (one of the 4 parts) of each shape.
3. Children should split the two shapes into equal quarters. For example:



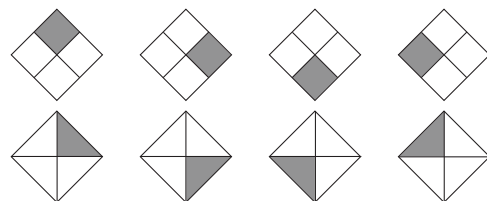
4. Children should circle the following shapes:



5. Check children have split each strip into equal quarters. For example:



6. Check children have shaded a quarter of each square each time. For example:



Reflect

Children's answers will vary. Children should draw shapes which they then split into 4 equal parts.

6 Find a quarter

→ pages 21–23

1. There should be 2 counters in each of the 4 circles.
 $\frac{1}{4}$ of **8** = 2.
2. Children should draw **5** flowers in each of the 4 vases.
 $\frac{1}{4}$ of **20** = 5.



3. a) Check children accurately shade one quarter of the shape (2 of the 8 squares).
 $\frac{1}{4}$ of 8 is **2**.
 b) Check children accurately shade one quarter of the shape (3 of the 12 squares).
 $\frac{1}{4}$ of 12 is **3**.
4. $\frac{1}{4}$ of **24** is **6**.
5. $\frac{1}{4}$ of 40 is **10**.
6. Children should draw a set or shape with 28 parts, then shade or circle 7 of the parts.

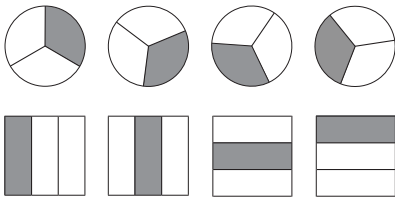
Reflect

Children should split fewer than 30 counters into equal groups of 4, then write number sentences. For example, $\frac{1}{4}$ of 28 is 7; $\frac{1}{4}$ of 12 is 3; $\frac{1}{4}$ of 24 is 6; $\frac{1}{4}$ of 20 is 5.

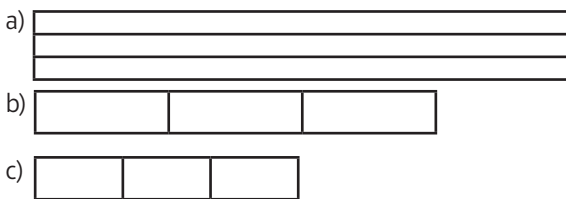
7 Thirds

→ pages 24–26

1. a) Check children accurately trace over the dotted lines provided.
 b) Check children accurately write $\frac{1}{3}$.
2. Check children have shaded one third (one of the three parts) of each shape. For example:



3. Children should draw 6 counters in each of the three boxes.
4. Check children have split each strip into 3 equal parts. For example:



5. a) Children should shade one third (3 of the 9 squares).
 $\frac{1}{3}$ of 9 = **3**.
 b) Children should shade one third (5 of the 15 squares).
 $\frac{1}{3}$ of 15 = **5**.

Reflect

Children may respond that halves are where the whole is split into 2 equal parts, with 4 equal parts for quarters and 3 equal parts for thirds. Their drawings should show shapes split into 2, 3 and 4 equal parts.

8 Find the whole

→ pages 27–29

1. $\frac{1}{2}$ is 3.
 $\frac{1}{2}$ of **6** = 3.
 The whole is **6**.
2. $\frac{1}{4}$ is 3.
 $\frac{1}{4}$ of **12** = 3.
 The whole is **12**.
3. $\frac{1}{3}$ is 5.
 $\frac{1}{3}$ of **15** = 5.
 The whole is **15**.
4. $\frac{1}{4}$ of **16** = 4.
 The whole is **16**.
5. Children should follow a similar structure to previous questions. For example:
 $\frac{1}{2}$ is 7.
 $\frac{1}{2}$ of 14 = 7.
 The whole is 14. Cassie has 14 marbles in total.
6. a) $\frac{1}{2}$ of 10 = **5**; $\frac{1}{2}$ of **20** = 10
 b) $\frac{1}{2}$ of 20 = **5**; $\frac{1}{4}$ of **80** = 20

Reflect

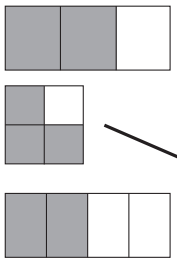
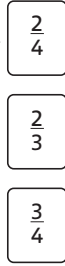
Children should draw an amount (for example, 5 counters) and specify whether it is $\frac{1}{2}$, $\frac{1}{3}$ or $\frac{1}{4}$ of the whole. They should check that their partner can work out the whole accurately.

9 Unit and non-unit fractions

→ pages 30–32

1. a) $\frac{1}{4}$
 b) $\frac{3}{4}$
 c) $\frac{2}{4}$ (or $\frac{1}{2}$)
 d) $\frac{4}{4}$ (or **1**)
2. a) $\frac{1}{2}$
 b) $\frac{2}{2}$ (or **1**)
3. a) Children shade 1 of the 3 parts.
 b) Children shade 2 of the 3 parts.
 c) Children shade 3 of the 3 parts.
4. a) Children should draw a picture where the whole is split into 3 equal parts, with all 3 parts shaded.
 b) Children should draw a picture where the whole is split into 4 equal parts, with all 4 parts shaded.



5.  

Reflect

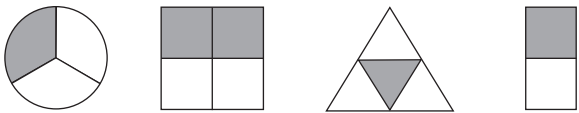

Children should circle all unit fractions with 1 as the numerator: $\frac{1}{4}, \frac{1}{2}, \frac{1}{3}$.

Children should draw a shape split into one of 2, 3 or 4 equal parts, with 1 part shaded.

10 Recognise the equivalence of a half and two quarters

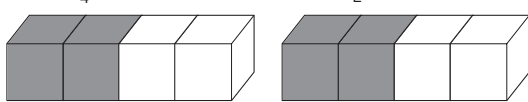
→ pages 33–35

1. Children should tick the following shapes:

2. Check children have shaded half of each shape. For example:

a) Shade $\frac{2}{4}$ b) Shade $\frac{1}{2}$



Children should notice that $\frac{2}{4}$ and $\frac{1}{2}$ are the same size – they are equivalent.

3. $\frac{2}{4}, \frac{1}{3}, \frac{3}{4}$.

4. a) Children should shade 4 of the 8 squares.
b) Children should shade 6 of the 12 squares.

5. There are 0 cherries left as Ali has had half (10) of them, and Harry has had two quarters (which is equivalent to half, or 10).

6. There are various correct answers here. For example: Amounts that can be split into halves and quarters: 4, 8, 12, 16, 20. Amounts that cannot be split into halves and quarters: 5, 6, 7, 9, 10.

Reflect

Children will provide a variety of answers but should show that $\frac{1}{2}$ is equal to $\frac{2}{4}$.

For example:

I used a piece of paper.

I showed that $\frac{1}{2}$ is equal to $\frac{2}{4}$ by folding the paper in half and shading 1 half. I then folded the paper in half again to make quarters and $\frac{2}{4}$ were still shaded.

11 Recognise three quarters

→ pages 36–38

1. a) 3 of the 4 parts should be shaded.
b) 3 of the 4 parts should be shaded.
2. a) 6 of the 8 squares should be shaded.
b) 3 of the 4 rectangles should be shaded.
c) 9 of the 12 squares should be shaded.
d) 3 of the 4 segments should be shaded.

3. a) $\frac{1}{4}$ of 12 = 3.
b) $\frac{3}{4}$ of 12 = 9.

4. $\frac{1}{4}$ of 16 = 4, so $\frac{3}{4}$ of 16 = 12.
Jack puts 4 brushes in each pot.
There are 12 brushes in 3 pots.

5. $\frac{1}{4}$ of 20 = 5, so $\frac{3}{4}$ of 20 = 15.

6. a) $\frac{1}{4}$ is 3.
b) The whole is 12.

Reflect

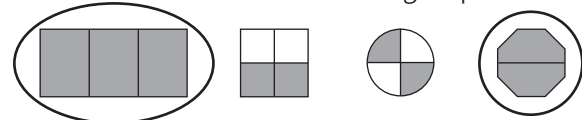
Answers will vary but children should notice that the shape has not been split into equal quarters. 3 of the 4 parts have been shaded but, because they are not equal parts, they do not make $\frac{3}{4}$ of the shape.

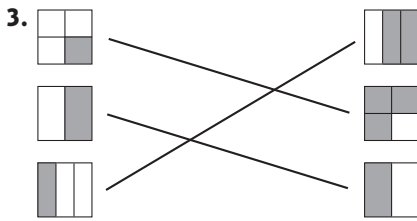
12 Count in fractions up to a whole

→ pages 39–41

1. a) $\frac{1}{3}$
b) $\frac{2}{3}$
c) $\frac{3}{3}$

2. Children should circle the following shapes:





4. Children circle $\frac{2}{2}$ and $\frac{4}{4}$.

5. a) $\frac{3}{4} + \frac{1}{4} = \frac{4}{4} = 1$

b) $\frac{1}{3} + \frac{2}{3} = \frac{3}{3} = 1$

6. a) $\frac{1}{3} + \frac{2}{3} = 1$

b) $\frac{3}{4} + \frac{1}{4} = 1$

c) $\frac{2}{4} + \frac{2}{4} = 1$ or $\frac{1}{2} + \frac{2}{4} = 1$

7. Answers will vary but children should recognise that the whole cake may have been cut into a different number of different-sized slices.
For example, both cakes could be the same size but Jemima's cake may have been cut into 3 smaller slices, while Sam's cake was cut into 2 larger slices.

Reflect

Children should circle 'always true'.
Children should draw or write a variety of fractions. For example: $\frac{4}{4} = 1$; $\frac{2}{2} = 1$; $\frac{3}{3} = 1$.

End of unit check

→ pages 42–43

My journal

Children may group the fractions by the type of fraction they are (for example, unit fractions or non-unit fractions), by whether they are halves, quarters or thirds, or by whether they show a whole (for example, $\frac{2}{2}$).

An example would be: I have grouped the fractions into unit fractions ($\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{3}$) and non-unit fractions ($\frac{2}{4}$, $\frac{3}{4}$, $\frac{2}{2}$, $\frac{4}{4}$, $\frac{3}{3}$).

Power play

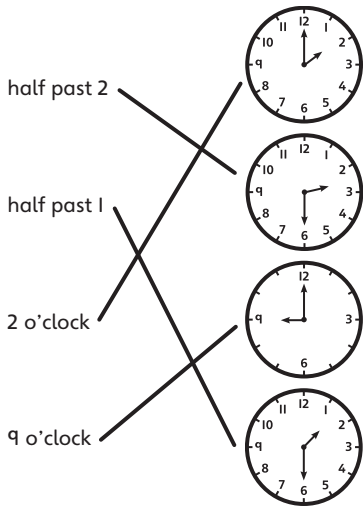
Check children are able to represent fractions accurately, both in pictorial and written fraction forms.

Unit II – Time

I O'clock and half past

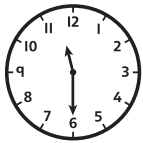
→ pages 44–46

1.



2. a) It is half past 8.
 b) It is 3 o'clock.
 c) It is half past 4.

3. a)



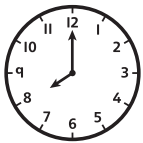
half past 12

c)



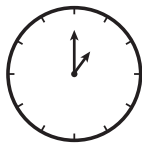
half past 6

b)



8 o'clock

d)



1 o'clock

4. a) Sam has got the hour and minute hands the wrong way around on all of the clocks.
 b) Check children can accurately draw or make the correct times on a clock.
 5. If the minute hand is pointing to 12, it must be an 'o'clock' time. The odd o'clock times are 1 o'clock, 3 o'clock, 5 o'clock, 7 o'clock, 9 o'clock and 11 o'clock.

Reflect

An o'clock time always has the minute hand pointing straight up to the number 12.
 A half-past time always has the minute hand pointing straight down to the number 6.

2 Quarter past and quarter to

→ pages 47–49

1. a)



quarter past 2

b)



quarter to 5

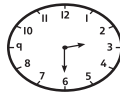
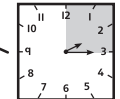
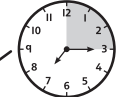
2.

quarter past 2

quarter to 11

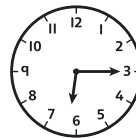
quarter past 7

half past 2



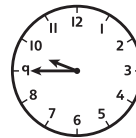
3. a) quarter past 5
 b) quarter to 3
 c) quarter to 5

4. a)



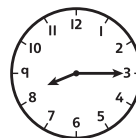
quarter past 6

c)



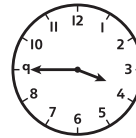
quarter to 10

b)



quarter past 8

d)



quarter to 4

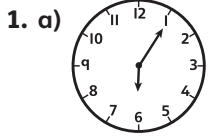
5. Malik has drawn the minute hand at quarter past, instead of quarter to. The hour hand should be just before the 2, not after it.
 6. 'Quarter past' means 15 minutes or quarter of an hour past the hour.
 'Half past' means 30 minutes or half of an hour past the hour.
 'Quarter to' means 15 minutes or quarter of an hour to the next hour.

Reflect

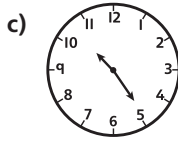
Clock D shows quarter to 6. The hour hand is approaching the 6. The minute hand is at the quarter to position.

3 Tell the time to 5 minutes

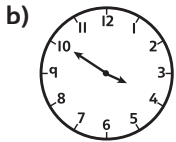
→ pages 50–52



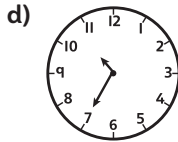
five past 6



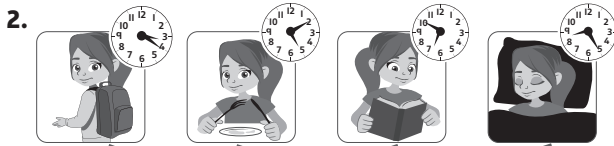
twenty-five past 10



ten to 4

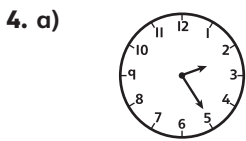


twenty-five to 11

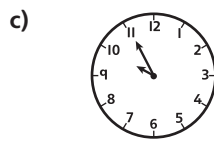


ten to 7 twenty-five past 8 twenty past 3 ten past 5

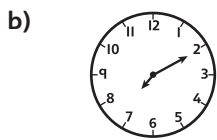
3. a) 10 minutes to 12
b) 10 minutes past 12



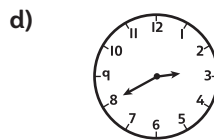
25 minutes past 2



5 minutes to 10



10 minutes past 7



20 minutes to 3

5. They are both right because 35 minutes past 7 is the same as 25 minutes to 8: it is just a different way of saying it. The standard way to say the time would be 25 to 8.

Reflect

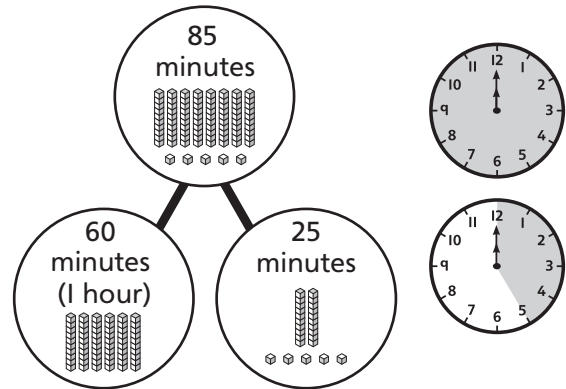
At 20 minutes past, the minute hand will point to the number 4. Each number on the clock represents 5 minutes, and 4 lots of 5 minutes is 20 minutes.

4 Minutes in an hour

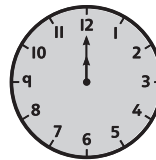
→ pages 53–55

1. 1 hour and 5 minutes is the same as **65** minutes.

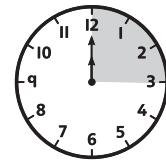
2.



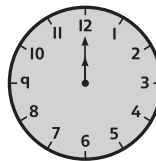
3. a)



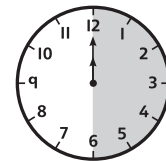
75 minutes



b)



1 hour and 30 minutes



4. Accept any answer from 61 minutes (or 1 hour 1 minute) to 76 minutes (or 1 hour 16 minutes).

Reflect

There are 60 minutes in an hour.

Children may give various explanations as to how they know. For example, each number on the clock is 5 minutes, and there are 12 lots of 5 minutes, which is 60 minutes. Or, half an hour is 30 minutes and there are two halves in an hour, which is 60 minutes.



5 Hours in a day

→ pages 56–58

1.

- The next aeroplane will leave on Saturday at half past 9 (9:30).
- You can sit on the bench at 20 minutes past 1, Friday daytime.
- Ella cannot eat the biscuit yet. It is quarter to 10 and she needs to wait until quarter past 10, so there is another half an hour to go.
- Midday/evening times: 12 o'clock, 1 o'clock, 10 o'clock, 11 o'clock

Midnight/morning times: 12 o'clock, 1 o'clock, 10 o'clock

Ben is correct – there are seven o'clock times with a 1 in them.

Reflect

Maya's mistake is that the hand goes twice around the clock in one day, not once.

There are 24 hours in 1 day.

End of unit check

→ pages 59–60

My journal

I know the time is 25 minutes past 6 because the minute hand is at 25 minutes past and the hour hand is nearly half-way between 6 and 7.

I know the time is 20 minutes to 3 because the minute hand is at 20 minutes to (at the 40 minute mark), and the hour hand is approaching the 3.

Power play

START 4 o'clock	twenty-five past 4	ten past 5	twenty past 7
↓	→	↓	↓
twenty past 4	twenty to 5	five past 5	twenty-five to 8
→	↓	→	↓
ten past 4	5 o'clock	twenty past 5	quarter to 7
↓	↓	↓	↓
half past 4	ten to 5	40 minutes past 5	half past 6
↓	↓	↓	↓
quarter to 5	quarter past 5	6 o'clock	20 minutes past 6
↓	↓	↓	↓
five to 5	twenty-five past 6	FINISH 7 o'clock	20 minutes to 7



Unit 12 – Problem solving and efficient methods

I My way, your way!

→ pages 61–63

1. There are **28** girls.
2. The shopkeeper sells **68** apples in total.
3. Stacey’s mum is **41** years older than Stacey.
4. ‘Starry Night’ is **20** minutes long.
5. Kimi gets **32p** change.

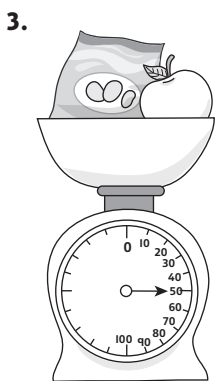
Reflect

Oskar has £75 in total.
Children should show or describe the method they used.

2 Use number facts

→ pages 64–66

1. a) $47 + 6 = 53$ $57 + 6 = 63$
 $6 + 67 = 73$ $27 + 6 = 33$
 b) $83 + 8 = 91$ $8 + 33 = 41$
 $28 + 43 = 71$ $13 + 58 = 71$
2. $30 + 5 = 20 + 15$
 $50 + 5 = 30 + 25$
 $60 + 5 = 50 + 15$



4. $75 + 7 = 82$ one less
 $65 + 8 = 73$ 10 less
 $75 + 18 = 93$ 10 more
 $65 + 19 = 84$ one more
 $45 + 38 = 83$ equal to
5. Nadia has **20** more cakes than Casey.

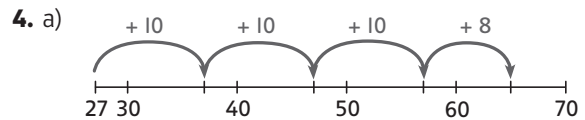
Reflect

$45 + 15 = 60$ $45 + 35 = 80$
The difference will be 20 because the answer 80 is 20 more than the answer 60.

3 Use a 100 square

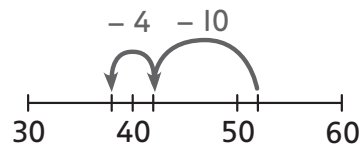
→ pages 67–69

1. a) $54 + 5 = 59$ c) $73 + 9 = 82$
 b) $44 - 8 = 36$ d) $34 - 20 = 14$
2. a) $33 + 16 = 49$ c) $87 - 67 = 20$
 b) $26 + 38 = 64$ d) $88 - 78 = 10$
3. a) $36 + 43 = 79$ c) $97 - 17 = 80$
 b) $52 - 29 = 23$ d) $57 = 38 + 19$



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



5. Children should notice that the 1s and 10s in each square add up to 9. For example, $72 = 7$ tens + 2 ones; $7 + 2 = 9$.

Reflect

$12 + 43 = 55$; $43 + 12 = 55$

Children should notice that the total is the same. Using the 100 square it is quicker to find the answer if you start with the greater of the two numbers ($43 + 12$).



4 Getting started

→ pages 70–72

- $9 + 2 = 11$
 $7 - 6 = 1$
- $9 + 7 = 16$ or $8 + 8 = 16$
 Various answers possible:
 $4 + 5 + 7$; $3 + 4 + 9$; $1 + 7 + 8$; $3 + 6 + 7$; and so on
- 36**
 - 98**
- $8 + 3 + 6 = 17$
 The bag of sweets cost **17p**.
 - $9p + 8p + 6p = 23p$
 - $9p + 8p + 3p + 3p = 23p$
 Or: $8p + 6p + 6p + 3p = 23p$
- Possible answers are:
 - $41 + 15$ $18 + 47$
 $42 + 14$ $28 + 37$
 $43 + 13$ $38 + 27$
 $44 + 12$ $48 + 17$
 $45 + 11$ $58 + 7$
 $46 + 10$
 $47 + 9$
 $48 + 8$
 $49 + 7$

Reflect

The missing column total is always 14, but there are several solutions, such as:

3	7	10
5	7	12
8	1	

1	9	10
7	5	12
8	1	

2	8	10
6	6	12
8	1	

5 Missing numbers

→ pages 73–75

- $8 + 12 = 20$ $35 + 16 = 51$
 $12 + 8 = 20$ $16 + 35 = 51$
 $20 - 8 = 12$ $51 - 16 = 35$
 $20 - 12 = 8$ $51 - 35 = 16$
- $46 - 27 = 19$
 - $39 + 53 = 92$
- $21 + 14 = 35$ $58 - 34 = 24$
 - $30 + 25 = 55$ $66 - 42 = 26$
- Possible answers are:
 - $1 + 23 = 24$
 - $11 + 23 = 34$
 - $21 + 23 = 44$
 - $31 + 23 = 54$
 - $41 + 23 = 64$
 - $51 + 23 = 74$
 - $61 + 23 = 84$
 - $71 + 23 = 94$

Reflect

Children's explanations will depend on the calculation chosen.

Solutions are:

$$32 + 18 = 50 \qquad 99 - 62 = 37$$

$$24 + 50 = 74 \qquad 81 - 35 = 46$$

6 Mental addition and subtraction (I)

→ pages 76–78

- $2 + 5 = 7$ $17 - 4 = 13$
 $12 + 5 = 17$ $27 - 4 = 23$
 $22 + 5 = 27$ $37 - 4 = 33$
 $32 + 5 = 37$ $57 - 4 = 53$
 $52 + 5 = 57$ $87 - 4 = 83$

- | | | |
|---------------|--------------|---------------|
| $45 + 3 = 47$ | $2 + 4 = 38$ | $26 + 2 = 29$ |
| $64 - 3 = 62$ | $8 - 5 = 93$ | |



3. a) $24 + 10 = 34$ b) $72 - 10 = 62$
 $24 + 30 = 54$ $73 - 30 = 43$
 $44 + 50 = 94$ $23 = 73 - 50$
 $24 + 20 = 44$ $72 - 20 = 52$
 $50 + 24 = 74$ $23 = 73 - 50$

4. a) $78 + 6 = 84$ c) $53 + 8 = 61$
 b) $7 + 46 = 53$ d) $28 + 5 = 33$

5. Poppy's mental method of counting up from 68 to 75 is less problematic and more efficient than Kamran's written method because the first calculation here is $5 - 8$, giving a negative number or involving exchanging a ten for ten ones.

Reflect

Children's explanations will depend on the calculation chosen.

Solutions are:

- $34 + 4 = 38$ $79 - 5 = 74$
 $34 + 20 = 54$ $79 - 55 = 24$

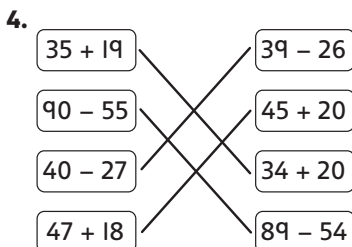
7 Mental addition and subtraction (2)

→ pages 79–81

1. $26 + 9 = 35$ $34 - 9 = 25$
 $43 + 8 = 51$ $26 - 8 = 18$
 $27 + 29 = 56$ $45 - 28 = 17$
 $68 + 28 = 96$ $32 - 19 = 13$

2. a) Add 20 then subtract 2.
 $78 + 20 - 2 = 96$
 b) Add 60 then subtract 1.
 $26 + 60 - 1 = 85$

3. a) $70 - 38 = 69 - 37 = 32$
 b) $30 - 17 = 29 - 16 = 13$
 c) $90 - 49 = 89 - 48 = 41$
 d) $100 - 26 = 99 - 27 = 72$



5. $65 - 39 = 26$

Reflect

To add 18, children may suggest adding 20 then subtracting 2.

To subtract 19, children may suggest subtracting 20 then adding 1.

8 Efficient subtraction

→ pages 82–84

1. a) $83 - 5 = 78$
 b) $21 - 4 = 17$
 c) $61 - 58 = 3$
2. a) $57 - 16 = 41$ c) $67 - 55 = 12$
 b) $98 - 34 = 64$ d) $74 - 74 = 0$

3. a) Tilly has **12** stamps.
 b) Marek's score is **27** points.

4. $76 - 38 = 38$ $76 - 36 = 40$
 $76 - 37 = 39$ $76 - 35 = 41$

5. Children may suggest counting on or back and/or using bonds to the nearest multiple of 10.

$76 - 68 = 8$
 $68 + 2 + 6 = 76$

Reflect

Children's explanations may vary.

$82 - 4 = 78$ counting back 4 from 82.

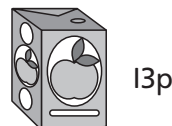
$82 - 75 = 7$ + 5 + 2 or counting on from 75 to 82.

$82 - 29 = 53$ subtract 30 add 1.

9 Solve problems – addition and subtraction

→ pages 85–87

1. a) The total cost is **45p**.
 b) Jerry will get **55p** change.
2. Annie has **27** sweets.
3. **16** more children prefer rugby to tennis.
4. Cooper spends more because a badge costs more than a party blower.



Reflect

Children should make up their own story about adding or subtracting 6 to or from 28, showing $28 + 6 = 34$ or $28 - 6 = 22$.



10 Solve problems – multiplication and division

→ pages 88–90

1. There are **12** snails altogether.
2. There are **40** chairs in total.
3. Freddie needs **6** bags.
4. Max and Padma get **45** balloons each.
5. Kofi and Abby have **30** cars altogether.

Reflect

Children should make up their own word problem, showing that $4 \times 10 = 40$ or $40 \div 10 = 4$.

11 Solve problems – using the four operations

→ pages 91–93

1. Many answers are possible. For example:
 $11 + 9 = 20$
 $22 - 12 = 10$
 $4 \times 5 = 20$
 $30 \div 3 = 10$
2. Zac has **67p** left.
3. **25** sweets are left.
4. Tia has **40 m** left to swim.
5. There are **3** two pence coins in his other hand.

Reflect

Various responses are possible. For example:

Ruben and Finn share 18 sweets. Ruben eats 5 of his. How many does he have left?

End of unit check

→ pages 94–95

My journal

First I worked out how many oranges are in the boxes:
 $10 \times 4 = 40$.

Then I divided 40 by 5 to work out how many bags are needed:
 $40 \div 5 = 8$.

I got the answer that 8 bags are needed for 40 oranges.

Power play

Hansel and Gretel have **50** pieces of bread at the beginning ($26 + 24$).

After dropping some each, they have **30** pieces in total ($50 - 20$).

Each bird gets 6 pieces of bread ($30 \div 5 = 6$).

3 birds get **18** pieces of bread ($3 \times 6 = 18$).



Unit 13 – Position and direction

I Language of position

→ pages 96–98

- The car is above the football.
The football is below the car.
The rabbit is next to the house.
The plane is behind the cloud.
- Children’s answers will vary depending on which items they choose from the grid. For example: The cat is on the top row, to the left of the flower. The tree is on the middle row, between the dog and the bird.
- Children’s answers will vary. Check they can use positional language to describe the location of an object in the classroom. Their description should be accurate and detailed enough for their classmates to be able to work out the object.

Reflect

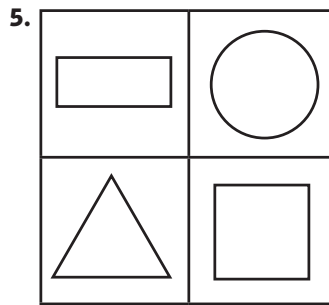
Children may write a variety of positional words, such as: above, below, between, beside, to the left of or to the right of. Check that they draw pictures that correctly demonstrate their chosen word(s).

2 Describe movement

→ pages 99–101

- 2 is to the left of 3.
 - 2 is standing between 1 and 3.
- The ball is above the cup.
 - Children should draw the flower on the left of the bottom shelf.
 - Children should describe its position as being on the bottom shelf, to the left of (or beside) the book and below the picture frame.
- The cube is between the cuboid and cylinder.
 - The cylinder is on top of the cuboid and the cube.
-

2 2 right, 1 down	8 1 right, 2 down	6 2 left, 1 down
7 1 right, 1 up	5 1 right, 1 up	3 2 left, 1 down
4 1 right, 1 up	1 1 left, 2 up	1 1 left



Reflect

I could say that the star is to the left of the dog. I could also say that the star is above the ice cream.

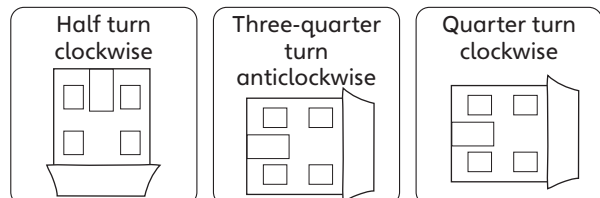
3 Describe turns

→ pages 102–104

- clockwise
 - anticlockwise
 - clockwise
- The ladybird moved a half turn clockwise.
 - The ladybird moved a quarter turn anticlockwise.
 - The ladybird moved a whole turn clockwise.
-

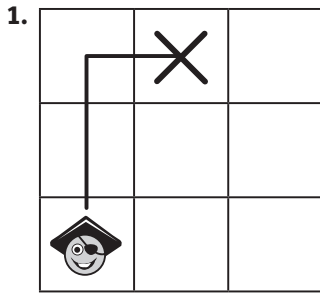
- The fly may have made a quarter turn clockwise. However, it may also have made a three quarter turn anticlockwise. It can sometimes be quicker to turn anticlockwise – it depends on your current position and how far you need to turn as to which direction is quickest.

Reflect



4 Describe movement and turns

→ pages 105–107



2. Go 2 spaces forwards. Make a quarter turn clockwise. Go 2 spaces forwards.

3. a)

Forwards 2, quarter turn anticlockwise, forwards 1

Forwards 2, quarter turn clockwise, forwards 2

Forwards 1, quarter turn clockwise, forwards 1

b) Forwards 1, quarter turn anticlockwise, forwards 1.
Alternatively: Quarter turn anticlockwise, forwards 1, quarter turn clockwise, forwards 1.

4. Rico is correct. A quarter turn clockwise and a three quarter turn anticlockwise are the same. Children could try drawing a simple shape or model to prove this.

Reflect

Answers will vary depending on what children draw, for example:

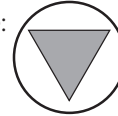
The arrow has turned a quarter turn clockwise (or a three quarter turn anticlockwise).

The arrow has turned a half turn clockwise (or anticlockwise).

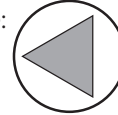
5 Make patterns by turning shapes

→ pages 108–120

1. a) Children should circle:



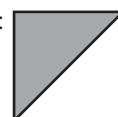
b) Children should circle:



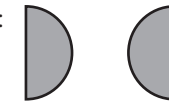
2. a) Children should draw:



b) Children should draw:



3. a) Children should draw:



b) Children should draw:



4. a) The semi-circle turns a quarter turn clockwise each time.

Or: The semi-circle turns a three quarter turn anticlockwise each time.

b) The triangle turns a half turn clockwise each time.

Or: The triangle turns a half turn anticlockwise each time.

5. Children should circle:



The shape circled is the odd one out because all the others have made a half turn each time.

Reflect

Check children can create a repeating pattern with two shapes. They should also be able to describe a repeating pattern drawn by a partner.



End of unit check

→ pages 111–112

My journal

Children's responses will vary depending on the items chosen. Check children can use positional language in their questioning. For example: Is it on the bottom row? Is it to the left of the apple? Is it below the cheese?

Power play

Check children can correctly move and turn per the instructions based on the rolls of the dice.







Unit 14 – Statistics

I Make tally charts

→ pages 113–115

- Answers from top to bottom: **19, 17, 13, 11**
 - Cats** are the most popular.
 - Fish** are the least popular.
 - 4** more people chose a dog than a hamster.
- Children should complete the chart to show the following tallies and frequencies:

Sport	Tally	Number
football 		8
rugby 		3
tennis 		5
cricket 		4

- Rugby was the least favourite sport.
 - 4** children chose cricket.
 - 11** children chose football or rugby.
- Children should complete the chart to show the following tallies and frequencies:

Preferred pizza toppings	Tally	Number
vegetables		17
chicken		10
pepperoni		14
cheese		13
mushroom		7

- Children could have completed the statements in different ways, for example:
- More people prefer vegetables to any other food.
 - More people prefer cheese than mushroom.
 - The least popular pizza topping was mushroom.

Reflect

Answers will vary depending on children's data.

2 Tables

→ pages 116–118

- There are **6** pens.
 - There are **7** pencils.
 -

Item	Number
Pen	6
Pencil	7
Rubber	6
Ruler	4

- Children should draw 3 spotty, 5 stripy and 2 plain balloons.
- There are **8** dogs in the show.
 - There are **7** rabbits and mice in the show.
 - There are **13** dogs and cats in the show.
 - There are **20** animals in the show.
 - There are **6** more dogs than mice in the show.
- Ambika read 13 pages on Thursday.

Reflect

Answers will vary. Children must pick a table from the lesson and share information from the table.

3 Block diagrams

→ pages 119–121





- Climbing frame
 - Horse
 - 18**
 - 13**
- Children should have shaded the following number of blocks (from the bottom upwards) in the columns of the block diagram:
 - Apple: 6
 - Pineapple: 7
 - Banana: 14
 - Peach: 8
 - Grapes: 12
- 16**
 - 7**
 - Children should have circled the safari.






6 Draw pictograms (1 to 2, 5 or 10)

→ pages 128–130




- From top to bottom: 8, 4, 10, 6
 - Children should draw the following number of circles into the pictogram:

Sticker	Number of stickers
sun 	○ ○ ○ ○ ○
smiley face 	○ ○
rainbow 	○ ○ ○ ○ ○ ○
star 	○ ○ ○

- | Weather | Tally | Number of days |
|---------|-------|----------------|
| sunny | | 15 |
| cloudy | | 10 |
| rain | | 25 |

- | Weather | Number of days |
|---------|---|
| sunny |  |
| cloudy |  |
| rain |  |

- Children’s explanations may vary, for example: you would have to draw too many pictures. It is easier having one sun represent 5 days.
- Children should draw the following number of ball icons into the pictogram:

Child	Number of goals scored
Kira	
Hassan	
Alfie	
Lola	

Reflect

Children’s explanations may vary, but they should indicate that they would use 1 symbol to represent more than one object when there are a lot of items. Otherwise it would mean drawing too many symbols.

7 Interpret pictograms (1 to 2, 5 or 10)

→ pages 131–133

- Zeb sees **12** cars.
 - Zeb sees **6** motorbikes.
 - Zeb sees **4** more vans than lorries.
 - Zeb sees **30** vehicles altogether.
 - Zeb is incorrect. There are 8 more cars than lorries. Children should understand that Zeb has used the key incorrectly.
- Chews** are the least popular sweet.
 - 20** children had chews as their favourite sweet.
 - 40** children had marshmallows as their favourite sweet.
 - There were **130** children in total.
- There are **40** children in Year 1.
 - There are **75** children in Year 1 and Year 2. $40 + 35 = 75$

Reflect

Eddie is incorrect because each symbol represents 5 children and there is one more symbol in Year 1 so therefore there are 5 more children in Year 1.



End of unit check

→ pages 134–135

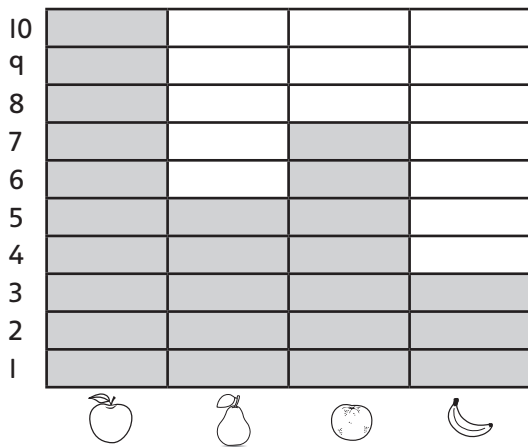
My journal

Children will need to realise that Ola is incorrect as the amounts are equal. They should make use of the vocabulary provided in the workbook to form their answer; for example:

Ola is incorrect because there are 4 red and 4 purple cars. This means the amounts are equal.

Power play

5 pears, 7 oranges, 10 apples and 3 bananas = 25 pieces of fruit.



Children could use counters or cubes of different colours to represent the fruits but should not complete the block diagram before they know how many of each fruit is needed. Children will need to use reasoning to reach the correct answers.