Unit II – Fractions (2)

I Add fractions

→ pages 8–11

Discover

1. a) Zac has $\frac{4}{10}$ of the pizza left.

Isla has $\frac{3}{10}$ of the pizza left.

b) 4 tenths + 3 tenths = 7 tenths

$\frac{4}{10} + \frac{3}{10} = \frac{7}{10}$

Think together

1. a) $\frac{4}{8} + \frac{1}{8} = \frac{5}{8}$

b) $\frac{4}{9} + \frac{2}{9} = \frac{6}{9}$

2. a) $\frac{2}{5} + \frac{1}{5} = \frac{3}{5}$

b) $\frac{2}{11} + \frac{6}{11} = \frac{8}{11}$

3. a) i) $\frac{3}{5} + \frac{1}{5} = \frac{4}{5}$ iii) $\frac{1}{6} + \frac{3}{6} = \frac{4}{6}$

ii) $\frac{5}{12} + \frac{1}{12} = \frac{6}{12}$ iv) $\frac{3}{5} + \frac{2}{5} = \frac{5}{5} = 1$

b) There are 7 possible answers:

$\frac{1}{11} + \frac{7}{11} = \frac{8}{11}$

$\frac{2}{11} + \frac{6}{11} = \frac{8}{11}$

$\frac{3}{11} + \frac{5}{11} = \frac{8}{11}$

$\frac{4}{11} + \frac{4}{11} = \frac{8}{11}$

$\frac{5}{11} + \frac{3}{11} = \frac{8}{11}$

$\frac{6}{11} + \frac{2}{11} = \frac{8}{11}$

$\frac{7}{11} + \frac{1}{11} = \frac{8}{11}$

2 Subtract fractions

→ pages 12–15

Discover

1. a) The tank is $\frac{5}{8}$ full.

b) 5 eighths – 3 eighths = 2 eighths

$\frac{5}{8} - \frac{3}{8} = \frac{2}{8}$

There will be $\frac{2}{8}$ of a tank of fuel left after the journey home.

Think together

1. a) $\frac{7}{8} - \frac{5}{8} = \frac{2}{8}$

b) $\frac{9}{10} - \frac{2}{10} = \frac{7}{10}$

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

b) $\frac{5}{7} - \frac{1}{7} = \frac{4}{7}$

c) $\frac{10}{11} - \frac{6}{11} = \frac{5}{11}$

d) $\frac{7}{8} - \frac{7}{8} = \frac{0}{0} = 0$

3. a) There are 5 possible answers:

$\frac{7}{7} - \frac{5}{7} = \frac{2}{7}$

$\frac{6}{7} - \frac{4}{7} = \frac{2}{7}$

$\frac{5}{7} - \frac{3}{7} = \frac{2}{7}$

$\frac{4}{7} - \frac{2}{7} = \frac{2}{7}$
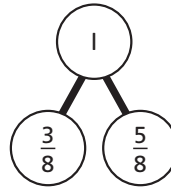
$\frac{3}{7} - \frac{1}{7} = \frac{2}{7}$

b) $\frac{10}{10} - \frac{7}{10} = \frac{3}{10}$

$\frac{9}{10} - \frac{6}{10} = \frac{3}{10}$

$\frac{8}{10} - \frac{5}{10} = \frac{3}{10}$

$\frac{7}{10} - \frac{4}{10} = \frac{3}{10}$

$\frac{6}{10} - \frac{3}{10} = \frac{3}{10}$

$\frac{5}{10} - \frac{2}{10} = \frac{3}{10}$

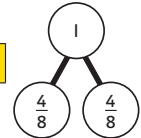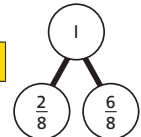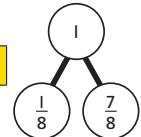$\frac{4}{10} - \frac{1}{10} = \frac{3}{10}$
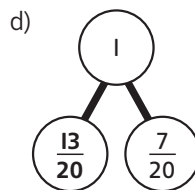
3 Partition the whole

→ pages 16–19

Discover

1. a)

b)

Think together

1.

2. a)

c)
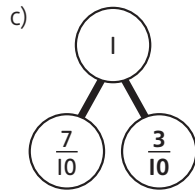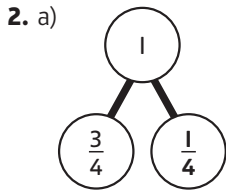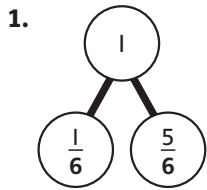

b)

d)
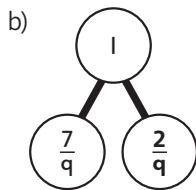
3. a) Taking one part away from the whole, leaves the other part.

$$1 - \frac{3}{5} = \frac{2}{5}$$

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

$1 - \frac{5}{9} = \frac{4}{9}$

$1 - \frac{1}{12} = \frac{11}{12}$

4 Problem solving – add and subtract fractions

→ **pages 20–23**

Discover

1. a) $\frac{1}{10} + \frac{3}{10} = \frac{4}{10}$

They ate $\frac{4}{10}$ of the food in total on Monday and Tuesday.

b) $1 - \frac{4}{10} = \frac{6}{10}$ of the food is left in the box.

Think together

1. a) They have travelled $\frac{6}{8}$ of the journey so far.

b) $\frac{2}{8}$ of the journey is left.

2. $\frac{5}{9}$ of the tents are yellow.

3. a) They ate $\frac{3}{5}$ of the packet altogether.

b) $\frac{2}{5}$ of the packet is left.

5 Unit fractions of a set of objects

→ **pages 24–27**

Discover

1. a) 10 marshmallows are needed for 1 cake.

b) 9 chocolate swirls are needed for 1 cake.

Think together

1. $\frac{1}{6}$ of 30 apples = **5** apples

2. They will get 6 balls each.

3. a) $\frac{1}{2}$ of £24 = £12 $\frac{1}{3}$ of £24 = £8

$\frac{1}{4}$ of £24 = £6 $\frac{1}{12}$ of £24 = £2

b) $\frac{1}{8}$ of 24 = **3**

6 Non-unit fractions of a set of objects

→ **pages 28–31**

Discover

1 a) $\frac{1}{5}$ of 35 = 7

b) 14 raspberries are needed for 1 cake.

Think together

1. a) $\frac{1}{6}$ of 18 = **3**

b) $\frac{4}{6}$ of 18 = **12**

4 × 3 = 12

c) $\frac{5}{6}$ of 18 = **15**

5 × 3 = 15

2. a) 8

b) 12

3. Children should show that $\frac{3}{5}$ of £15 = $\frac{3}{4}$ of £12 = £9.

7 Reason with fractions of an amount

→ **pages 32–35**

Discover

1. a) Mr Lopez's number is 60.

b) $\frac{9}{10}$ of Mr Lopez's number is 54.

Think together

1. Reena's number is 24.

2. a) $\frac{1}{5}$ of Richard's number is 6.

b) Richard's number is 30.

c) $\frac{4}{5}$ of Richard's number is 24.

d) $\frac{9}{10}$ of Richard's number is 27.

3. Children should describe the two methods to show that the answers are the same.

$\frac{1}{6}$ of 24 + $\frac{1}{6}$ of 30 = 4 + 5 = 9

$\frac{1}{6}$ of (24 + 30) = $\frac{1}{6}$ of 54 = 9

8 Problem solving – fractions of measures

→ **pages 36–39**

Discover

1 a) The zookeeper feeds the penguins 8 kg of fish.
b) There are 12 kg of fish left.

Think together

1. a) There are 18 orange and green frogs altogether.
b) There are 6 yellow frogs.

2. Max has 8 treats left.

3. There is not enough feed.

$\frac{1}{4}$ of 800 g + $\frac{3}{4}$ of 200 g = 200 g + 150 g = 350 g

350 g < 450 g

End of unit check

→ **pages 40–41**

1. B

2. C

3. C

4. A

5. A

6. D

7.

Unit I2 – Money

I Pounds and pence

→ **pages 44–47**

Discover

1. a) Lee has 12 pounds and 88 pence, so £12 and 88p.
   b) Sofia gave Lee a £2 coin and 20p, 5p, 2p and 1p coins.

Think together

1. Sofia has **31** pounds and **66** pence.
   Sofia has £**31** and **66**p.

2. Answers will vary depending which notes and coins children choose. Check their chosen money totals £25 and 37p.
   For example: Lee could take two 10 pound notes, one 5 pound note, one 20 pence coin, one 10 pence coin, one 5 pence coin and one 2 pence coin.

3. There is more than one answer. One possible solution is:

Number of coins	Possible
1	(£1 coin)
2	(50p, 50p)
3	Not possible
4	50p, 20p, 20p, 10p
5	20p, 20p, 20p, 20p, 20p
6	50p, 10p, 10p, 10p, 10p, 10p
7	20p, 20p, 20p, 10p, 10p, 10p, 10p
8	50p, 10p, 10p, 10p, 5p, 5p, 5p, 5p
9	20p, 10p, 10p, 10p, 10p, 10p, 10p, 10p, 10p

2 Convert pounds and pence

→ **pages 48–51**

1. a) Sofia put £2 and 61p into the machine.
   b) Lee could have put in these coins: two 50p coins, ten 10p coins, five 20p coins, twenty 5p coins.

Think together

1. a) The first two sets make £1. The two 50p coins make £1. The five 20p coins also make £1.
      The last set is £1 and 10p.
   b) Holly has £5 and 32p.

2. a) £2 and 86p
   b) 809p

3. a) **152**p
   b) £**5** and **68**p
   c) **475**p
   d) £**3** and **7**p

Children may draw different combinations of coins to make up each total. For example, for a), they might draw a £1 coin then a 50p and a 2p coin.

3 Add money

→ **pages 52–55**

Discover

1. a) The tea and cake cost Sofia £3 and 52p in total.
   b) A juice is 145p, a toastie is 280p. 145 + 280 = 425p
      The juice and toastie cost Lee £4 and 25p in total.

Think together

1. £2 + £3 = £**5**
   20p + 58p = **78**p
   The total cost is £**5** and **78**p.

2. £1 and 80p = **180**p
   £1 and 45p = **145**p
   The total cost is 325p or £3 and 25p.

3. A tea is £1 and 20p and a water is 79p.
   £1 and 20p + 79p = £1 and 99p. The first customer bought tea and water.
   A toastie is £2 and 80p and a slice of cake is £2 and 32p.
   £2 and 80p + £2 and 32p = £5 and 12p. The second customer bought a toastie and a slice of cake.
   A slice of cake is £2 and 32p, a strawberry tart is £3 and 58p, and a large coffee is £2 and 20p.
   £2 and 32p + £3 and 58p + £2 and 20p = £8 and 10p. The third customer bought a slice of cake, a strawberry tart and a large coffee.

4 Subtract money

→ **pages 59–59**

Discover

1. a) £2 and 50p – £1 and 10p = £1 and 40p
      Sofia has £1 and 40p left.
   b) £2 and 50p – £1 and 89p = 61p
      A loaf of bread is 61p cheaper than a pack of bread rolls.

Think together

1. 6p + 89p = 95p
   A loaf of bread costs 95p more than a breadstick.

2. Lee has £4 and 86p left.

3. a) Check children's predictions. They should recognise
   that the answers £1 and 95p – £1 and 42p as well
   as £4 and 45p – £3 and 88p will have an answer
   less than £1.

   b) Using Ash's suggestion of changing the amounts
   into pence:
   195p – 142p = 53p
   530p – 150p = 380p or £3 and 80p
   218p – 64p = 154p or £1 and 54p
   445p – 388p = 57p

5 Find change

pages 60–63

Discover

1. a) Sofia received £2 and 65p change.
   b) 500p – 235p = 265p, which is £2 and 65p.

Think together

1. a) 500p – 382p = 118p, which is £1 and 18p change.
   b) 1,000p – 618p = 382p, which is £3 and 82p change.

2. Sofia is incorrect. £10 – £4 and 80p = £5 and 20p

3. £2 – £1 and 37p = 63p
   Alternatively, Ambika could add on from £1 and 37p,
   to reach £2.
   The bar of chocolate cost 63p.

End of unit check

pages 64–65

1. A

2. A

3. C

4. B

5. C

6. Olivia has £4 and 20p + £5 and 90p = £10 and 10p.

   The sports cap is £12 and 70p, so Olivia does not
   have enough money to buy the cap. She is still
   £2 and 60p short.

Unit 13 – Time

1 Roman numerals to 12

→ **pages 68–71**

Discover

1. a) VIII represents 8.
   IX represents 9.
   b) Clock faces, film or book titles and coins.

Think together

1. a) 11
   b) 12

2. a) 5 o'clock
   b) 9 o'clock

3. a) Half past 1
   b) Quarter past 4
   c) Half past 8
   d) Quarter to 11

2 Tell the time to 5 minutes

→ **pages 72–75**

Discover

1. a) It is 55 minutes past 11 o'clock.
   b) The time is 5 minutes to 12.

Think together

1. a) 10 minutes past 3
   b) 25 minutes past 7
   c) 10 minutes to 3 or 50 minutes past 2

2. 40 minutes past 3 or 20 minutes to 4

3. a) Children's answers will vary, but they should refer to the minute hand being in the first half of the clock, and the hour hand pointing between the 6 and the 7.
   b) Children's answers will vary, but they should refer to the minute hand being in the second half of the clock, and the hour hand pointing between the 9 and the 10.
   c) Children's answers will vary, but they should refer to the minute hand pointing to the 8 on the clock, and the hour hand pointing more than half-way between any two numbers.

3 Tell the time to the minute

→ **pages 76–79**

Discover

1. a) The photo was taken at 33 minutes past 10.
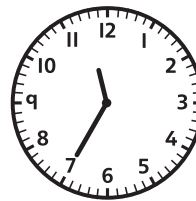   b) Another way to say this time is 27 minutes to 11.

Think together

1. a) **18** minutes past 5
   b) **21** minutes to 12

2. a) **9** minutes past 4   c) **4** minutes to **9**
   b) **12** minutes to 5   d) **28** minutes past **1**

3. 41 minutes past 9 or 19 minutes to 10

4 Read time on a digital clock

→ **pages 80–83**

Discover

1. a) The time is 35 minutes past 11.
   b)

   It is 25 minutes to 12.

Think together

1. a) 20 minutes past 2
   b) 29 minutes past 10
   c) 43 minutes past 7

2. a) 10 minutes to 3
   b) 24 minutes to 6

3. a) Ebo is correct.
   b) 8:26 am

5 Use am and pm

→ **pages 84–87**

Discover

1. a) The clock on the wall should show the time like this.
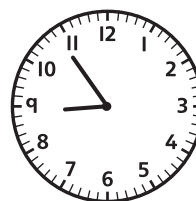
   b) It is morning because the digital clock says 'am'.

Think together

1. a)

b) 10:46 am and 4:30 am show times in the morning.

2. Digital clock D

3. 11 minutes to 1 pm

6 Years, months and days

→ **pages 88–91**

Discover

1. a) There are 12 months in a year.
January, March, May, July, August, October and December have 31 days.
April, June, September and November have 30 days.
February has 28 days.
b) There are 365 days in a year.

Think together

1. a) Children should count on: 15 April, 16 April, 17 April, 18 April, 19 April, 20 April, 21 April.
b) Children should count back: 23 July, 16 July, 9 July, 2 July.

2. a) There are 35 days in 5 weeks.
b) There are 177 days left in the year.

3. Four $\frac{1}{4}$ days make 1 whole day. So one extra day is added to the year in every leap year (29 February).

7 Days and hours

→ **pages 92–95**

Discover

1. a) The start of the day is 12 o'clock at night.
This is called midnight.
The end of the day is the next midnight.
This is when a new day starts.
b) There are 24 hours in one day.

Think together

1. From 12 noon to 12 midnight there are 12 hours.
There are 48 hours in 2 days.
The hour hand goes around the clock 24 times in a full day.

2. a) 5 hours
b) 17 hours

3. Emma spends 19 hours sleeping, at school and playing football so has 5 hours left in the day to do other things.

8 Hours and minutes – start and end times

→ **pages 96–99**

Discover

1. a) Max will get on the dodgems at 2:53 pm or 7 minutes to 3.
b) Olivia should start queuing for the big wheel at 3:55 pm, or 5 minutes to 4.

Think together

1. Max and Olivia can go on the carousel at 4:50 pm.

2. Luis started queuing at 9:44 am.

3. a) Bella will go on the helter-skelter at 3:04 pm or 4 minutes past 3.
b) The Khan family will get home at 6:34 pm. The most efficient method is to add an hour and take away 1 minute.

9 Hours and minutes – durations

→ **pages 100–103**

Discover

1. a) It takes the farmer 28 minutes to plough the field.
b) Another 28 minutes go by before the farmer has a cup of tea.

Think together

1. It takes the farmer 44 minutes to milk the cows.

2. 25 + 22 = 47
The lorry driver was at the farm for 47 minutes.

3. It takes the farmer 1 hour 23 minutes or 83 minutes.

10 Hours and minutes – compare durations

→ **pages 104–107**

Discover

1. a) Meet the Author: 9:06 am to 10:00 am = 54 minutes
Songs and Stories: 11:35 am to 12:20 pm
= 45 minutes
Poetry Workshop: 1:40 pm to 2:40 pm = 60 minutes
b) The Poetry Workshop activity lasts the longest.

Think together

1. Story Time = 29 minutes Make a Book = 26 minutes
Story Time lasts longer.

2. A = 8:12 am until 8:48 am = 36 minutes
B = 8:43 am until 8:57 am = 14 minutes
C = 8:28 am until 9:03 am = 35 minutes
A (36 minutes) is the longest duration.

3. D (63 minutes), B (64 minutes), C (65 minutes),
A (67 minutes)

11 Minutes and seconds

→ **pages 108–111**

Discover

1. a) Richard has been playing for 50 seconds.
Amelia has been playing for 35 seconds.
b) Lee could measure seconds using the clock on
the wall, by counting the marks as the second
hand moves.

Think together

1. a) Star jumps take 37 seconds.
b) Running takes 43 seconds.

2. 60 – 48 = 12

There are 12 seconds left.

3. a) **30** seconds
b) **90** seconds
c) **150** seconds

12 Solve problems with time

→ **pages 112–115**

Discover

1. a) It will take longer to fill the bath than the jug as
the bath has a greater capacity.
b) I would use seconds to measure how long it would
take to fill the jug.
I would use minutes and seconds to measure how
long it would take to fill the bath.

Think together

1. Playing a football game – minutes

Blowing up a balloon – seconds
Fly to the moon – days
Tree to grow tall – years

2. Aki is incorrect because you want to finish the race
as quickly as possible.
Ambika won the race as she took 18 seconds and
Aki took 25 seconds.

3. It depends on how far away they each live. It could
take one minutes and the other hours.

End of unit check

→ **pages 116–117**

1. D

2. B

3. C

4. A

5. B

6. 2 hours 55 minutes

# Unit 14 – Angles and properties of shapes

1 Turns and angles

→ **pages 120–123**

Discover

1. a) The buttons are for making quarter turns in either a clockwise or an anticlockwise direction.
   b) To face the canyon, the rover needs to make a quarter turn in the anticlockwise direction.

Think together

1. a) It would face the crater.
   b) It would face the mountain.

2. a) It would face the weather station.
   b) It would face the unidentified object.

3. a)   c)
   b)   d)
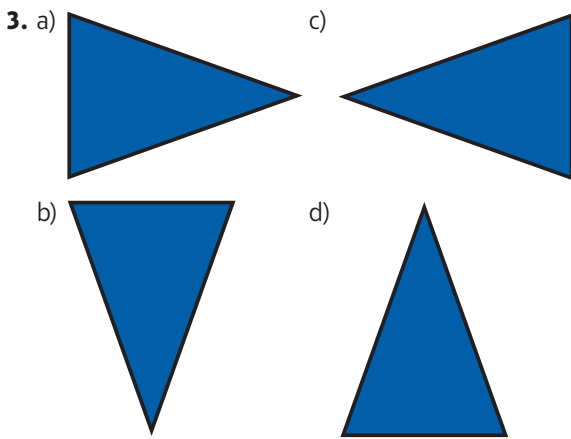
The shape will return to its starting position.

## 2 Right angles in shapes

→ **pages 124–127**

Discover

1. a) Children should accurately make and mark their right-angle measurers.
   b) The blue rectangle has four right angles – one at each vertex.
      The purple trapezium has two right angles – both on the right-hand side of the shape.

Think together

1. The sports field has eight right angles: one at each vertex of the main outline and then four where the vertical line crosses the centre of the field.

2. A = 2, B = 4, C = 0, D = 3

3. The shape has five right angles and one reflex angle of 270°.
   So Dexter is correct in thinking that one of the angles is a three-quarter turn and not a quarter turn.

4. Lines should be added to each diagram that are perpendicular to the existing lines, for example:
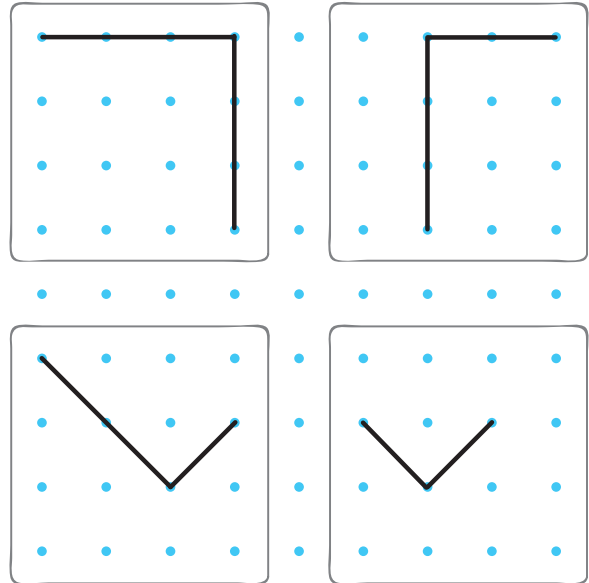
3 Compare angles

→ **pages 128-131**

Discover

1. a) House C would be good in a snowy country. A steeper roof means the snow can fall off more easily.
   b) Houses B and D would suit a dry country as the angle at the top of the roof is greater than a right angle and therefore the roofs are less steep.

Think together

1. A = less than, B = greater than, C = equal to, D = greater than, E = equal to, F = less than

2. A = equal to, B = less than, C = less than, D = greater than, E = equal to, F = greater than

3. Isla can make many different acute and obtuse angles by starting at different pins on the boards. Children may notice that it does not matter how long the elastic is pulled, the length of the arms does not affect the size of the angle.

4 Measure and draw accurately

→ **pages 132-135**

Discover

1. a) Two 10 cm squares can be cut from the piece of paper.
  b) The piece of paper left over will be a rectangle because it is 10 cm tall and 9 cm 7 mm wide.

Think together

1. a) Children should draw a 3 cm × 3 cm square on their 10 cm square and then cut out the smaller square and the rectangles that it leaves.
  b) The side lengths of the smaller square are both 3 cm; the side lengths of the larger square are both 7 cm; the side lengths of the two rectangles are 3 cm × 7 cm.

2. A = 3 cm × 4 cm × 5 cm
  B = 3 cm × 2 cm × 3·6 cm (or 36 mm)

3. Check children's predictions.
  Actual diagonal lengths are:
  A = approximately 42 mm,
  B = approximately 99 mm

5 Horizontal and vertical

→ **pages 136-139**

Discover

1. a) One of the shelves is not horizontal. It is not the same height all the way along.
  b) The shelf can be fixed by lowering the right-hand side to 1 m 50 cm.

Think together

1. Fences A and B both have vertical posts, but fence B does not have horizontal posts.
  Fences A and C both have horizontal posts but fence C does not have vertical posts.
  A is the only fence with both horizontal and vertical posts.

2. Children should correctly use a plumb line to check whether something in the classroom is vertical.

3. a) A is symmetrical. It has a horizontal line of symmetry.
   B is symmetrical. It has a horizontal and a vertical line of symmetry.
   C is not symmetrical.
   D is symmetrical. It has a horizontal and a vertical line of symmetry.
   E is symmetrical. It has a horizontal line of symmetry.
   F is symmetrical. It has a horizontal line of symmetry.
  b) Children should accurately draw some more shapes with a horizontal line of symmetry.

6 Parallel and perpendicular

→ **pages 140-143**

Discover

1. a) Isla's piece of paper will have parallel lines made by the folds.
  b) Max's piece of paper will have the same parallel lines as Isla's but also a perpendicular line where he folder his paper in half.

Think together

1. Children should correctly point to the parallel and perpendicular lines in the picture.

2. Children should accurately draw parallel lines by drawing along each side of a ruler.
  These lines are parallel because they are the same distance apart all the way along.

3. a) Children should disagree. The pairs of lines in A and B are parallel because they are the same distance apart all the way along.
   The lines in C and D are not parallel because, if they were extended, they would meet.
  b) Children should use the grid lines to make sure the lines they draw are always the same distance from the other line. These will then be parallel.

7 Recognise, draw and describe 2D shapes

→ **pages 144-147**

Discover

1. a) The children have made a rectangle.
   It has two pairs of parallel sides.
  b) All rectangles, including squares, have two pairs of parallel lines.

Think together

1. Shape B is the only shape with a right angle. It has 4 right angles.

2. a) A and C   d) A, B and D
   b) D   e) B and D
   c) B

3. Children should accurately copy and complete Dexter's square on squared paper
  They should then draw different 2D shapes on squared or dotted paper, and talk about the features of the shapes using language such as: perpendicular sides, quadrilateral, pentagon, right angle and parallel sides.
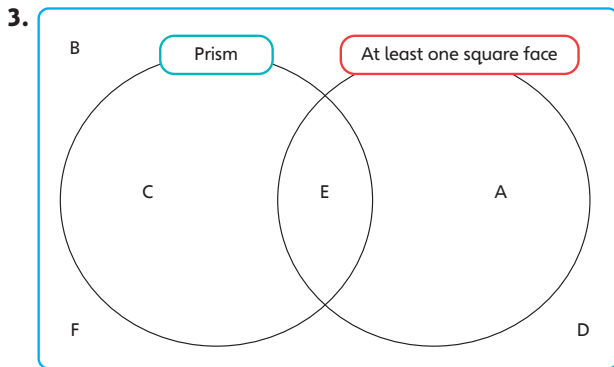
8 Recognise and describe 3D shapes

→ pages 148-151

Discover

1. a) Ambika can measure all the edges of her gift to find out if it is a cube.
   The edges are not all the same so Ambika's gift is not a cube.
   b) All the faces of Ambika's gift are rectangles. The opposite faces are exactly the same shape and size. Ambika's gift is a cuboid

Think together

1. The faces of Zac's gift measure: 24 cm × 12 cm, 24 cm × 12 cm and 12 cm × 12 cm.

2. The tent is a triangular prism. It has two equilateral triangles at either end, with sides of 2 m, and it has two rectangular sides (and one base) measuring 2 m × 3 m 50 cm.

3.

9 Make 3D shapes

→ pages 152-155

Discover

1. a) Bella can make a 2 × 2 × 2 cube using all her smaller cubes.
   b) Lee is not correct. He can only make two different cuboids with his five cubes.

Think together

1. You need **6** squares to make the faces of a cube.
   You need **12** sticks to make the edges of a cube.
   You need **8** marshmallows to make the corners (vertices) of a cube.

2. a) They can make a cube from the sticks and marshmallows, from the squares and from the linking cubes. They can make a pyramid from the sticks and marshmallows and from the squares and triangles.
   b) A sphere cannot be made using the shapes as a sphere is not made using edges and vertices, or from flat-shaped faces.

3. a) Shape A cannot be made using the sets of material given as there is nothing which can be used to make the circles for the ends.
   Shape B can be made using the sticks and marshmallows or the squares and triangles.
   b) You would need two triangles and three squares to make the prism.
   You could also join two squares together to make each rectangular face of the prism, therefore using two triangles and six squares to make a different triangular prism.
   You would need 9 sticks and 6 marshmallows to make the prism.

End of unit check

→ pages 156-157

1. B

2. C

3. C

4. A

5. D

6. Children's sketches should include two rectangles measuring 5 cm × 2 cm; two rectangles measuring 5 cm × 1 cm; and two rectangles measuring 2 cm × 1 cm.

Unit I5 – Statistics

I Interpret pictograms (I)

→ **pages 160–163**

Discover

1. a) Amelia found 8 beetles.
 b) Amelia found 3 spiders.

Think together

1. a) Each flower symbol represents 10 flowers.
  $5 \times 10 = 50$ $10 + 10 + 10 + 10 + 10 = 50$
  Amelia found 50 honeysuckles.
 b) One flower symbol represents 10,
  $\frac{1}{2}$ a symbol represents 5 flowers.
  There are 2 whole symbols and 1 half symbol
  for daffodils.
  $20 + 5 = 25$
  Amelia found 25 daffodils.
 c) There are two symbols for bluebells which
  represent 20 bluebells and $\frac{1}{2}$ a symbol for
  primroses which represents 5 primroses. Therefore
  there are more bluebells than primroses.
 d) There are 20 bluebells and 5 primroses. Therefore
  there are 15 more bluebells than primroses.

2. a) Each symbol is worth **5** trees.
 b) Amelia found 20 conifer trees.
 c) Amelia found 45 trees in total.

3. You could improve the diagram by using the same
 symbol for all the insects and giving that symbol
 the same value so that it is easier to compare.

2 Interpret pictograms (2)

→ **pages 164–167**

Discover

1. a) 8 more children chose to play in midfield than
  goalkeeper.
 b) 16 children chose defender or forward as their
  favourite position.

Think together

1. a) There are 4 more seven-year-olds
  than six-year-olds.
 b) There are 19 seven- and eight-year-olds altogether.
  (8 seven-year-olds + 11 eight-year-olds)
 c) There are 40 players altogether.

2. The top goal scorer has scored 15 more goals than
 the next highest goal scorer.

3. a) 23 children have played 5 or more games.
 b) 11 children have played 3 games.

3 Draw pictograms

→ **pages 168–171**

Discover

1. a) The number of children travelling by car
  should be 5.
 b)

	How children travel to school	
Method	**Tally**	**Number**
walk	⬤⬤⬤⬤⬤⬤⬤⬤⬤⬤⬤⬤	12
car	⬤⬤⬤⬤⬤	5
bike	⬤⬤⬤⬤⬤⬤⬤⬤⬤	q
bus	⬤⬤	2

Key: Each ⬤ represents I child

Think together

1. a) Some children may have more than or fewer than
  one pet.
 b) Miss Hall may want to do this so that the children
  in the class don't have to use as many symbols.
 c) Children should choose the stick man, star or circle
  as they are shapes it is easy to draw half of. The
  other shapes would be too difficult to split in half.
 d) Children should draw a pictogram.
  Check that they draw 7 symbols for dog,
  2 symbols for cat, $1\frac{1}{2}$ for rabbit, $2\frac{1}{2}$ for
  other and 5 symbols for none.

2. a) Children should correctly draw a pictogram.

Class	**Number of children in class**
3A	⬤⬤⬤⬤⬤⬤⬤
4A	⬤⬤⬤⬤⬤⬤⬤◖
5A	⬤⬤⬤⬤⬤⬤◿
6A	⬤⬤⬤⬤◖

Key: Each ⬤ represents 4 children

 b) It might not be a good idea to use ⬤ to represent
  5 children as not all the numbers are divisible by 5
  and it would be difficult to show $\frac{1}{5}$ of the circle.

3. Emma should have used the same symbol, 🍦, for
 each flavour of ice cream.

4 Interpret bar charts (1)

→ **pages 172–175**

Discover

1. a) The children found 6 clams and 10 barnacles.
The children found 16 clams and
barnacles altogether.
   b) The children found 11 limpets.

Think together

1. a) The children found 8 gutweeds.
   b) They found 7 sea lettuces.
   c) They found 13 pieces of coral weed and 1 sea oak.

2. a) Emma found the most shells.
   b) Andy found the fewest shells.
   c) Andy found 45 shells, Yugo found 60 shells
and Emma found 75 shells.

3. Children's news summaries will vary; for example:
Class 3A has a total of 32 votes. The most favourite
sea animals voted for in order of most favourite to
least favourite were as follows:
   Dolphin – 9
   Sea horse – 8
   Shark – 7
   Starfish – 6
   Jellyfish - 2

5 Interpret bar charts (2)

→ **pages 176–179**

Discover

1. a) 8 more people like superhero films than
like comedy films.
   b) 27 people like comedy or animated films best.
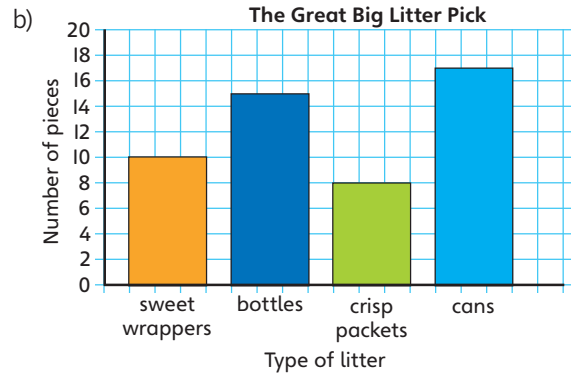
Think together

1. a) 50 – 35 = 15
   15 more sandwiches were sold than nachos.
   b) The most popular food was popcorn.
   The least popular food was chocolate.
   The bar was the tallest for popcorn and
   the shortest for chocolate.
   The difference between the most popular
   and least popular food is 45 portions.

2. The vertical axis should be labelled 0, 10, 20, 30, 40;
the bars for student and senior need to be swapped.

3. The number of people who prefer going during
the week is 100.
The number of people who prefer going at
the weekend is 105.
More people prefer to go the cinema at the weekend.
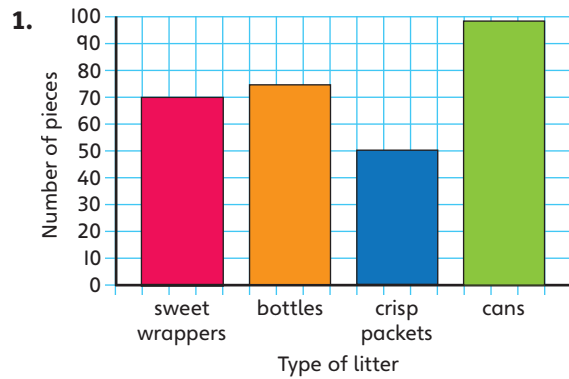
6 Collect and represent data in a bar chart

→ **pages 180–183**

Discover

1. a) 15 bottles were picked up.
   b)

Think together

1.

2. The vertical axis needs to go up by the same
increments. There should be a space between
A and B. Each bar needs to be the same width.

3. Children are likely to want to record their data in
a tally chart, then summarise their data in a table.
Finally, they should draw a bar chart to represent
their data.

7 Simple two-way tables

→ **pages 184–187**

Discover

1. a) Ebo came in 1st place, Richard came in 2nd place,
Alex came in 3rd place and Ambika came in 4th
place for the ball throw.
   b) Alex threw the discus 8 m further than Ambika.

Think together

1. a) Alex took 26 seconds to run the 100 m race.
   b) Ebo took 50 seconds to run the 200 m race.
   c) Ambika ran the 200 m race the fastest.
   d) Ambika came in 1st place, Alex came in
   2nd place, Richard came in 3rd place and
   Ebo came in 4th place in the 100 m race.
   e) Ambika ran the 200 m race 2 seconds faster
   than Richard.

2.

House	Running	Field	Total
Ash House	30	50	**80**
Oak House	45	**35**	80
Maple House	40	**45**	85

3. a)

Year	1st, 2nd or 3rd	Commended	Total
Year 3	21	15	**36**
Year 4	**33**	9	42
Year 5	20	**17**	37
Year 6	**22**	26	48

b) Children's answers will vary. Any three pieces of information using data from the table, for example, more Year 3 medals were for 1st, 2nd or 3rd than for commended.

End of unit check

→ **pages 188–189**

1. C

2. D

3. A

4. A

5. C

6. a) Sunday
b) Sunday
c) 5 degrees Celsius (5 °C)