

Multiplying and Dividing

PS Problem-solving questions

Challenge 1

PS 1 Work out the answer. $4 \times (3 + 5) =$ _____

1 mark

2 Work out the answer to these calculations.

a) $245 \div 10 =$ _____ b) $51 \times 10 =$ _____

c) $156 \div 100 =$ _____ d) $16 \times 100 =$ _____

4 marks

3 Fill in the missing numbers.

a) _____ $\times 100 = 560$ b) $1356 \div 100 =$ _____

c) _____ $\div 10 = 34$ d) $9.8 \times 10 =$ _____

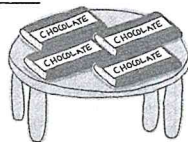
4 marks

4 Answer these calculations.

a) $810 \div 9 =$ _____ b) $50 \times 30 =$ _____

c) $180 \div 3 =$ _____ d) $30 \times 10 =$ _____

4 marks

5 Olivia buys four chocolate bars that cost 15p each.
How much does she pay altogether? _____p


1 mark

Marks..... /14

Challenge 2

1 Work out the answer. $6 \times (9 - 3) + 8 =$ _____

1 mark

2 Work out the answer to these calculations.

a) $5.43 \times 100 =$ _____ b) $6.2 \times 10 =$ _____

c) $941.8 \div 100 =$ _____ d) $246 \div 10 =$ _____

4 marks

3 Fill in the missing numbers.

a) _____ $\div 1000 = 7.291$ b) $100 \times$ _____ $= 354$

c) _____ $\times 10 = 47.8$ d) $569 \div 100 =$ _____

4 marks

Multiplying and Dividing

4 Answer these calculations.

a) $32 \times 20 =$ _____ b) $3600 \div 6 =$ _____

c) $300 \div 5 =$ _____ d) $60 \times 30 =$ _____

4 marks

PS 5 Mina is putting 14 paintbrushes on each table.
If she has 168 paintbrushes, how many
tables can she supply? _____ tables

1 mark

Marks..... /14

Challenge 3

1 Work out the answer to these calculations.

a) $12 \times (6 - 4) + 2^3 =$ _____ b) $3 + (7 - 4) \times 6 =$ _____

2 Answer these calculations.

a) $6.754 \times 100 =$ _____ b) $345.9 \div 100 =$ _____

c) $241.5 \div 1000 =$ _____ d) $1.3 \times 1000 =$ _____

2 marks

4 marks

PS 3 Esther has £45 to spend. If bracelets cost £4.15 each,
how many can she buy? _____ bracelets

1 mark

PS 4 Luke gets paid £3.20 to wash a car.
How much will he earn if he washes 12 cars? £_____

1 mark

5 Fill in the missing numbers.

_____ $\times 340 = 10 \times$ _____

2 marks

Marks..... /10

Total marks /38

How am I doing?



Written Short and Long Division

PS Problem-solving questions

Challenge 1

1

a) $6 \overline{)126}$ b) $9 \overline{)144}$ c) $4 \overline{)32.8}$

3 marks

2

Akela needs to organise 330 scouts into 15 groups for camp.

How many scouts are in each group? _____ scouts

1 mark

PS

3

Skylar, Jessie and Walter share 147 marbles between them. How many marbles do they get each? _____ marbles

1 mark

PS

4

Mr Fixit, the builder, is putting screws into boxes. If every box holds 8 screws, how many boxes will Mr Fixit need for 288 screws? _____ boxes

1 mark

PS

5

I tidy the library shelves. I put 238 books onto 17 shelves. How many books are on each shelf? _____ books

1 mark

Marks..... /7

Challenge 2

1

a) $16 \overline{)192}$ b) $25 \overline{)425}$ c) $5 \overline{)71.5}$

3 marks

PS

2

Here are some prices at the supermarket.

Carrots



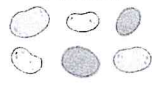
£6.40 per box of 8

Tomatoes



£3.30 per box of 15

Potatoes



£4.16 per box of 16

- How much is one carrot? _____p
- How much is one tomato? _____p
- How much is one potato? _____p

Written Short and Long Division

d) Five friends buy a box of carrots between them.

How much do they each pay? £_____

4 marks

PS

3

Jeremy spends £7.20 on party bag presents. If a present costs 45p, how many did he buy?

_____ presents

PS

4

Five friends hire a rowing boat for a day and split the cost equally. How much do they each pay? £_____

Rowing boats



£35.75 per day

1 mark

1 mark

Marks..... /9

Challenge 3

PS

1

The Roberts family need to buy some trees for their forestry business.

Beech tree



£4.50 each

Apple tree



£7 each

Pine tree



£3.50 each

- If they spend £76.50 on beech trees, how many did they buy? _____ beech trees
- If they have £98 to split equally between apple and pine trees, how many of each can they buy?
_____ apple trees _____ pine trees
- New trees are delivered in lorry loads of 400. If the Roberts family buy 9600 trees, how many lorry loads will be delivered? _____ lorry loads
- One lorry load of new trees costs £1312. How much does one new tree cost? £_____

5 marks

Marks..... /5

Total marks /21

How am I doing?



Adding and subtracting money

add and subtract amounts of money



1 Add these amounts of money.

- a £38 + £45 b £79 + £24 c £58 + £37 d £62 + £51
e £84 + £66 f £135 + £40 g £147 + £50 h £183 + £40

2 Subtract these amounts of money.

- a £100 - £57 b £100 - £32 c £100 - £68 d £173 - £40
e £136 - £80 f £200 - £183 g £200 - £124 h £200 - £63

1 Add these amounts of money.

- a £365 + £60 b £382 + £80 c £497 + £90 d £507 + £60
e £553 + £70 f £317 + £242 g £324 + £239 h £472 + £243

2 Subtract these amounts of money.

- a £300 - £154 b £400 - £267 c £400 - £96 d £353 - £80
e £457 - £136 f £482 - £135 g £574 - £193 h £673 - £387

1 Work out these money calculations.

- a £473 + £80 b £500 - £271 c £562 - £281 d £473 + £485
e £614 + £90 f £743 - £80 g £500 - £308 h £674 - £158

2 Find the missing amounts of money.

- a £245 + = £315 b £471 + = £561 c £326 + = £726
d + £50 = £621 e + £80 = £703 f + £90 = £754

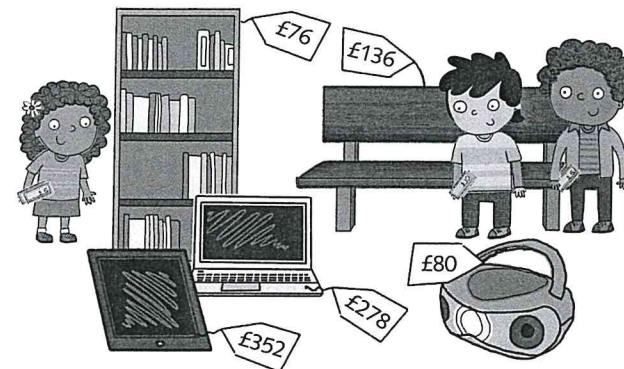
School shopping

- Add and subtract amounts of money
- Solve problems involving money and reason mathematically



Oscar, Mina and Louis are buying items for their classroom and playground. Oscar has £100, Mina has £200 and Louis has £500.

Work out these money problems. Show your working out.



Challenge 1

- a Oscar buys a bookcase. How much change will he get?
b Mina buys a bookcase and a CD player. How much does she spend?
c Oscar wants to buy a bench. How much more money does he need?
d Mina buys a bench. How much money will she have left?

Challenge 2

- a Mina wants to buy a bench and a CD player. How much more money does she need?
b Louis buys a tablet. How much change will he get?
c Mina buys the cheapest item in the shop. How much change will she get?
d Mina decides to buy two benches. How much more money will she need?

Challenge 3

- a Louis buys a tablet and 2 games. The total cost comes to £479. What was the price of the games?
b Mina and Louis put their money together and buy a tablet and a laptop. How much change will they get?
c If you had £500 to spend, what items would you buy?



Lesson 2: Addition target answers

- Challenge 1 Open
Challenge 2 Open
Challenge 3 Open

- 2 a 355 d 325
b 367 e 462
c 393 f 707
3 Answers will vary.

Lesson 3: Using a calendar

- Challenge 1
1 a 7 days in 1 week
b 12 months in 1 year
c 365 days in 1 year
2 a Apr, Jun, Sep, Nov
b Jan, Mar, May, Jul, Aug, Oct, Dec
c Feb

Lesson 3: Adding and subtracting money

- Challenge 1
1 a £83 e £150
b £103 f £175
c £95 g £197
d £113 h £223
2 a £43 e £56
b £68 f £17
c £32 g £76
d £133 h £137
Challenge 2
1 a £425 e £623
b £462 f £559
c £587 g £563
d £567 h £715
2 a £146 e £321
b £133 f £347
c £304 g £381
d £273 h £286
Challenge 3
1 a £553 e £704
b £229 f £663
c £281 g £192
d £958 h £516
2 a £70 d £571
b £90 e £623
c £400 f £664

Lesson 4: School shopping

- Challenge 1
a £24 c £36
b £156 d £64
Challenge 2
a £216 c £124
b £148 d £72
Challenge 3
a £127 c Open
b £70

Unit 11, Week 2: Addition and subtraction incl. Measurement (money)

Lesson 1: Estimating and checking the formal written method of subtraction

- Challenge 1
a 142 e 155
b 132 f 217
c 242 g 236
d 123 h 166
Challenge 2
1 Answers will vary.
2 a 236 e 154
b 218 f 237
c 154 g 167
d 226 h 309
Challenge 3
1 Answers will vary.

Lesson 2: Subtraction target answers

- Challenge 1 Open
Challenge 2 Open
Challenge 3 Open

Lesson 3: Jumping forward to the target

- Challenge 1 Answers will vary.
Challenge 2 Answers will vary.
Challenge 3 Answers will vary.

Lesson 4: Jumping back to the target

- Challenge 1 Answers will vary.
Challenge 2 Answers will vary.
Challenge 3 Answers will vary.

Unit 11, Week 3: Measurement (time)

Lesson 1: Just a minute

- Challenge 1
a 26 min past 8
b 42 min past 11
c 58 min past 4
d 34 min past 3
e 17 min past 5
f 3 min past 7
Challenge 2
1 a 6:13 d 6:46
b 8:05 e 9:50
c 1:38 f 12:42
2 a 3:36 d 1:32
b 8:28 e 11:44
c 9:56 f 11:02
Challenge 3
a 1:37 c 11:55
b 12:07 d 12:25

Lesson 2: Race times

- Challenge 1
a 5 minutes c 30 minutes
b 15 seconds d 9 hours
Challenge 2
1 Fly: 1 min 11 sec
Rex: 1 min 2 sec
Jenny: 1 min 6 sec
2 23 seconds
Challenge 3
1 Alan 3:20 Flo 3:32 Pat 3:17
Jan 3:34 Kit 3:28 Ian 3:25
2 Pat
3 Jan
4 14 min
5 15 min

Lesson 4: Cycle race times

- Challenge 1
a 7:45 c 8:38
b 8:20 d 9:13
Challenge 2

Cyclist	1	2	3	4	5	6
Finish time	4:59	4:40	5:04	4:49	4:42	5:03

Challenge 3

Cyclist	Time taken
1	2 h 10 min
2	1 h 55 min
3	1 h 59 min
4	2 h 6 min
5	1 h 50 min
6	1 h 53 min

- 2 Finishing order: 5, 6, 2, 3, 4, 1

Unit 12, Week 1: Number - Multiplication and division

Lesson 1: Multiplication using the expanded written method

- Challenge 1
Children's choice of numbers will vary
80 ← 85 → 90, 30 ← 34 → 40, 60 ← 63 → 70,
70 ← 78 → 80, 90 ← 92 → 100, 50 ← 56 → 60,
40 ← 49 → 50, 20 ← 21 → 30, 10 ← 17 → 20,
70 ← 71 → 80, 40 ← 43 → 50, 60 ← 65 → 70,
20 ← 29 → 30, 30 ← 36 → 40
Challenge 2
Answers dependent upon children's choice. Answers will vary.

Division using the formal written method

Use the formal written method to calculate $TO \div O$



Write the division fact for each number coming out of the machine.

1 36
18
21
24
27

2 64
56
48
24
32

3 32
24
28
36
16

Approximate the answer to each calculation.

a $51 \div 3$

b $96 \div 8$

c $76 \div 4$

d $75 \div 5$

e $42 \div 3$

f $56 \div 4$

g $92 \div 4$

h $81 \div 3$

i $72 \div 4$

j $87 \div 3$

- Find the answer to each of the calculations in Challenge 2 using the formal written method of division.
- Check three of your answers using the inverse operation. Choose the method of multiplication you find the easiest.



Example

$$\begin{array}{r} T \quad O \\ 2 \quad 4 \\ 3 \overline{) 7 \quad 1 \quad 2} \end{array}$$

Example

$$24 \times 3 = 72$$

Solving word problems (8)

Solve word problems and reason mathematically



Challenge 1

Match the division fact with its answer.

21

$69 \div 3$

$64 \div 8$

12

$66 \div 2$

33

$24 \div 4$

6

$84 \div 4$

8

$36 \div 3$

23

Challenge 2

1 The Year 3 children had a summer picnic. Use the pictures to solve the problems.

sandwiches
72

cupcakes
56

cartons of fruit juice
68

slices of watermelon
81

samosas
85

ice creams
96

- The sandwiches were shared equally between 3 groups. How many sandwiches per group?
- The samosas were shared equally between 5 groups. How many samosas per group?
- The cartons of fruit juice were shared evenly amongst 2 classes. How many per class?
- 3 boxes of watermelon slices were eaten. How many slices altogether?
- The cook made another 4 boxes of sandwiches. How many more sandwiches did she make?
- The ice creams were divided between 4 classes. How many children in each class received an ice cream?
- There were 96 children at the picnic. How many children did not receive a carton of fruit juice?

2 Choose three of your calculations and check your answer using the inverse operation.

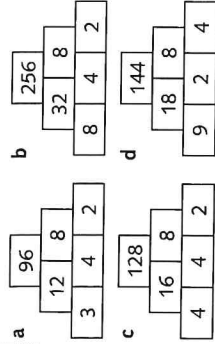
Challenge 3

Use the pictures above to make up your own word problems using these calculations.

- $72 \times 3 =$
- $96 \div 8 =$
- $85 + 72 =$
- $96 - 48 =$



Challenge 3



Lesson 2: Multiplication: introducing the formal written method (1)

Challenge 1

- a 160
b 200
c 210
d 240
e 240

Challenge 2

- a 148
b 216
c 207
d 272
e 228

Challenge 3

- a 4
b 4
c 8

Lesson 3: Multiplication: introducing the formal written method (2)

Challenge 1

- a £1.80
b £5
c £2.40
d £1.60

Challenge 2

- Open

Challenge 3

- 1 360 apples, 365 oranges; 5 more oranges are sold
2 6 watermelons
3 648 lemons and bunches of grapes altogether
4 212 bananas

Lesson 4: Solving word problems (7)

Challenge 1

- a $\times$
b $\div$
c $\times$
d $+$

Challenge 2

- a £76
b £36
c £54

Challenge 3

- 1 £1050
2 £5
3 £60
4 £4
5 £48
6 £304

- 7 3 basketballs cost £114, he only has £100 so he cannot buy 3.

Unit 12, Week 2: Multiplication and division

Lesson 1: Division using partitioning

- a 30: 60, 150, 120, 210, 300, 320, 240,
b 40: 120, 200, 160, 80, 440, 280, 320
c 50: 150, 50, 200, 100, 350, 400,
d 80: 240, 80, 160, 400, 640, 560, 320

Challenge 2

- 1 a 3
2 a 2
3 a 4
4 a 5
5 a 2
6 a 3
7 a 1
8 a 4
9 a 3
10 a 4
11 a 6
12 a 6
13 a 5
14 a 2
15 a 5
16 a 5

- f 200
g 300
h 720
i 240
j 450
f 192
g 275
h 704
i 228
j 435
d 8
e 4
f 5

Challenge 2

- a 20
b 10
c 20
d 10
e 10

- f 10
g 20
h 30
i 20
j 30

Challenge 3

- 1 a 17
b 12
c 19
d 15
e 14

- f 14
g 23
h 27
i 18
j 29

Challenge 3

- 2 a $17 \times 3 = 51$
b $12 \times 8 = 96$
c $19 \times 4 = 76$
d $15 \times 5 = 75$
e $14 \times 3 = 42$

- f $14 \times 4 = 56$
g $23 \times 4 = 92$
h $27 \times 3 = 81$
i $18 \times 4 = 72$
j $29 \times 3 = 87$

Lesson 4: Solving word problems (8)

Challenge 1

- $66 \div 2$ and 33
 $64 \div 8$ and 8
 $36 \div 3$ and 12
 $84 \div 4$ and 21
 $24 \div 4$ and 6
 $69 \div 3$ and 23

Challenge 2

- 1 a 24 sandwiches per group.
b 17 samosas per group.
c 34 cartons per class.
d 243 slices altogether.
e 288 more sandwiches.
f 24 children in each class received ice-cream.
g 28 children did not receive a carton of fruit juice.

Challenge 3

- 2 Answers will vary.
Open

Lesson 2: Division using the expanded written method

Challenge 1

- Answers will vary.

Challenge 2

- 1 15, 24, 16, 25, 18, 27
2 13, 16, 12, 15, 18, 17
3 17, 39, 28, 19, 25, 46
4 Answers will vary.

Challenge 3

- 1 a $85 \div 5$ is odd one out as other answers equal 24
b $95 \div 5$ is odd one out as other answers have a 7 in the units or ones place

Lesson 3: Division using the formal written method

Challenge 1

- 1 12, 6, 7, 8, 9
2 8, 7, 6, 3, 4
3 8, 6, 6, 9, 4

Unit 12, Week 3: Statistics

Lesson 1: School disco pictograms

Challenge 1

Colour	Tally	Frequency
red	HHH HHH I	16
orange	HHH HHH	10
green	HHH	5
yellow	HHH HHH II	12
blue	HHH II	7

Challenge 2

Balloon colours	red	orange	green	yellow	blue
red	O	O	O	O	O
orange	O	O	O	O	O
green	O	O	O	O	O
yellow	O	O	O	O	O
blue	O	O	O	O	O

Number of balloons

Key O = 2 balloons

- 3 a 10 balloons
b 12 balloons
c 7 balloons

- 4 a red
b green

- 5 50 balloons

Multiplication: Introducing the formal written method (2)



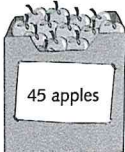
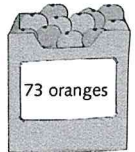
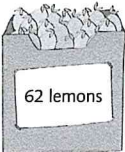
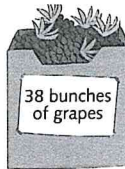
Use the formal written method to calculate $TO \times O$

Write how much it would cost to buy:

					
40p each	50p each	20p each	80p/bunch	£1/slice	30p each

- a 6 
- b 5 
- c 3 
- d 4 
- e 7 
- f 6 
- g 8 
- h 5 

For each box of fruit, spin the spinner and write a multiplication calculation. Estimate the answer first. Then use the formal written method to calculate the answer.

 45 apples	 73 oranges	 62 lemons
 38 bunches of grapes	 24 watermelon slices	 58 bananas

You will need:
• Resource 36:
2, 3, 4, 5, 8
and 10 spinner

Example
 $58 \times 8 \rightarrow 60 \times 8 = 480$
H T O
5 8
 $\times \quad 6 \quad 8$
4 6 4

Solve these word problems using the pictures in Challenge 2.

- 1 The green grocer sells 8 boxes of apples and 5 boxes of oranges in a week. Which fruit does he sell more of? How many more?
- 2 There are 24 watermelon quarters. How many full watermelons would this be?
- 3 8 boxes of lemons and 4 boxes of grapes are sold in a week. How many lemons and bunches of grapes is this altogether?
- 4 There are 4 boxes of bananas to sell. Each box has 5 rotten bananas which are thrown out. What is the total number of bananas that can be sold?

Solving word problems (7)



Solve word problems and reason mathematically

Challenge 1

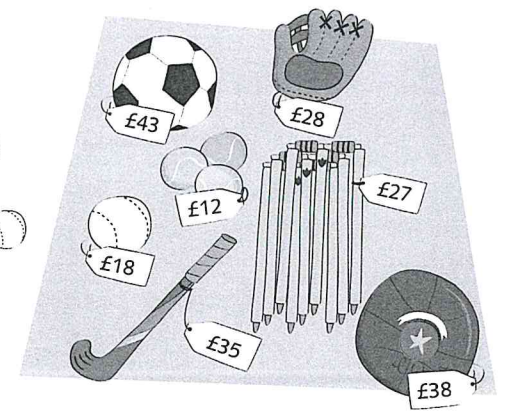
Write in the missing sign.

- a $4 \star 6 = 24$
- b $32 \star 8 = 4$
- c $30 = 6 \star 5$
- d $6 \star 8 = 14$
- e $72 = 9 \star 8$
- f $29 \star 8 = 21$
- g $15 \star 3 = 12$
- h $88 \star 11 = 8$

Challenge 2

Write how much it would cost to buy:

- a 2 
- b 3 sets of 
- c 2 sets of 
- d 2  and 1 
- e 3 
- f 4 



Challenge 3

Answer these questions about the sports equipment in Challenge 2.

- 1 The school buys 30 hockey sticks. How much do they spend?
- 2 What is the difference in cost between a football and a basketball?
- 3 What is the cost of 5 sets of tennis balls?
- 4 Tennis balls are sold in packs of 3. How much would 1 tennis ball cost?
- 5 The sports shop has sold out of tennis racquets. Tennis racquets cost 4 times more than a set of tennis balls. What is the cost of a tennis racquet?
- 6 How much do 8 basketballs cost?
- 7 Jay has £100 to spend. Can he buy 3 basketballs? Explain why or why not.



Challenge 3

a

96
12 8
3 4 2

b

256
32 8
8 4 2

c

128
16 8
4 4 2

d

144
18 8
9 2 4

Lesson 2: Multiplication: introducing the formal written method (1)

Challenge 1
a 160 **f** 200
b 200 **g** 300
c 210 **h** 720
d 240 **i** 240
e 240 **j** 450

Challenge 2
a 148 **f** 192
b 216 **g** 275
c 207 **h** 704
d 272 **i** 228
e 228 **j** 435

Challenge 3
a 4 **d** 8
b 4 **e** 4
c 8 **f** 5

Lesson 3: Multiplication: Introducing the formal written method (2)

Challenge 1
a £1.80 **e** £1.40
b £5 **f** £2.40
c £2.40 **g** £4
d £1.60 **h** £1.50

Challenge 2 Open
Challenge 3 1 360 apples, 365 oranges; 5 more oranges are sold

- 2 6 watermelons
 3 648 lemons and bunches of grapes altogether
 4 212 bananas

Lesson 4: Solving word problems (7)

Challenge 1
a $\times$ **e** $\times$
b $\div$ **f** $-$
c $\times$ **g** $-$
d $+$ **h** $\div$

Challenge 2
a £76 **d** £74
b £36 **e** £105
c £54 **f** £172

Challenge 3
 1 £1050
 2 £5
 3 £60
 4 £4
 5 £48
 6 £304

7 3 basketballs cost £114, he only has £100 so he cannot buy 3.

Unit 12, Week 2: Multiplication and division

Lesson 1: Division using partitioning

Challenge 1
a 30: 60, 150, 120, 210, 300, 320, 240,
b 40: 120, 200, 160, 80, 440, 280, 320
c 50: 150, 50, 200, 100, 350, 400,
d 80: 240, 80, 160, 400, 640, 560, 320

Challenge 2
 1 **a** 3 **b** 30
 2 **a** 2 **b** 20

3 **a** 4 **b** 40
 4 **a** 5 **b** 50
 5 **a** 2 **b** 20
 6 **a** 3 **b** 30

7 **a** 1 **b** 10
 8 **a** 4 **b** 40
 9 **a** 3 **b** 30
 10 **a** 4 **b** 40

11 **a** 6 **b** 60
 12 **a** 6 **b** 60
 13 **a** 5 **b** 50
 14 **a** 2 **b** 20

15 **a** 5 **b** 50
 16 **a** 5 **b** 50
a 44 **f** 43
b 21 **g** 22
c 21 **h** 32
d 24 **i** 34
e 22 **j** 19

Challenge 3
a 44 **f** 43
b 21 **g** 22
c 21 **h** 32
d 24 **i** 34
e 22 **j** 19

Lesson 2: Division using the expanded written method

Challenge 1 Answers will vary.

Challenge 2
 1 15, 24, 16, 25, 18, 27
 2 13, 16, 12, 15, 18, 17
 3 17, 39, 28, 19, 25, 46
 4 Answers will vary.

Challenge 3
 1 **a** 85 $\div$ 5 is odd one out as other answers equal 24
b 95 $\div$ 5 is odd one out as other answers have a 7 in the units or ones place

Lesson 3: Division using the formal written method

Challenge 1
 1 12, 6, 7, 8, 9
 2 8, 7, 6, 3, 4
 3 8, 6, 6, 9, 4

Challenge 2

a 20 **f** 10
b 10 **g** 20
c 20 **h** 30
d 10 **i** 20
e 10 **j** 30

Challenge 3
 1 **a** 17 **f** 14
b 12 **g** 23
c 19 **h** 27
d 15 **i** 18
e 14 **j** 29

2 **a** $17 \times 3 = 51$ **f** $14 \times 4 = 56$
b $12 \times 8 = 96$ **g** $23 \times 4 = 92$
c $19 \times 4 = 76$ **h** $27 \times 3 = 81$
d $15 \times 5 = 75$ **i** $18 \times 4 = 72$
e $14 \times 3 = 42$ **j** $29 \times 3 = 87$

Lesson 4: Solving word problems (8)

Challenge 1
 $66 \div 2$ and 33
 $64 \div 8$ and 8
 $36 \div 3$ and 12
 $84 \div 4$ and 21
 $24 \div 4$ and 6
 $69 \div 3$ and 23

Challenge 2
 1 **a** 24 sandwiches per group.
b 17 samosas per group.
c 34 cartons per class.
d 243 slices altogether.
e 288 more sandwiches.
f 24 children in each class received ice-cream.
g 28 children did not receive a carton of fruit juice.

2 Answers will vary.

Challenge 3 Open

Unit 12, Week 3: Statistics

Lesson 1: School disco pictograms

Challenge 1

Colour	Tally	Frequency
red	HHH HHH I	16
orange	HHH HHH	10
green	HHH	5
yellow	HHH HHH II	12
blue	HHH II	7

2

Balloon colours									
red									
orange									
green									
yellow									
blue									

Number of balloons

Key O = 2 balloons

3 **a** 10 balloons **c** 7 balloons

b 12 balloons

4 **a** red **b** green

5 50 balloons

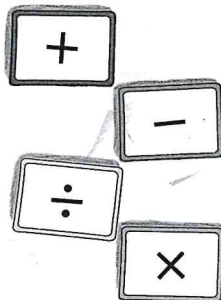
Solving word problems (I)

Solve problems involving addition, subtraction, multiplication and division



Copy each calculation and write in the missing sign.

- | | | | | | |
|---|---------|-----------|---|----------|------------|
| a | 60 | 80 = 4800 | b | 600 = 12 | 50 |
| c | 10 = 90 | 80 | d | 1500 | 300 = 1200 |
| e | 640 | 80 = 8 | f | 70 | 80 = 5600 |
| g | 3 | 80 = 240 | h | 760 | 120 = 880 |
| i | 310 | 30 = 280 | j | 120 | 30 = 4 |
| k | 480 | 8 = 60 | l | 500 | 50 = 10 |



A school has to purchase some new items. Find the answer to each question.



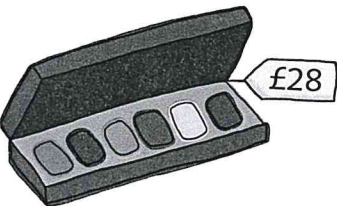
kettle



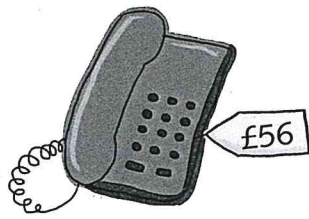
globe



set of 6 novels



box of paints



telephone



tennis racket

a The school buys 48 novels altogether. How much does it spend?

b A school buys 24 globes. How much change does the school receive from £1000?

c The supplier has a sale: 'Buy one get one half price'. The school office buys 6 kettles. How much is spent?

d It is decided that each classroom should have a telephone. There are 24 classrooms. What is the total cost?

e Tennis racquets are on sale at one third off their original price. If the school buys 36, how much does it spend?

f One of each item is purchased. What is the total cost?

g Novels are sold separately for £7 each. The library buys 3465 separate novels over the year. What is the total cost?

h Your class has a budget of £500 to spend. What would you buy?

Challenge 3

1 Using the information in Challenge 2, find the answers to these problems.

- Janet buys two of the same item. She pays with two £50 notes and gets £24 change. What item does she buy?
- The two Year 6 classes spend the same amount of money on items. One class buys 3 boxes of paints. The other class buys 2 different items totalling the same amount of money. What items did they buy?
- All of the items shown are on sale at a 10% discount. What is the new price of each item? Record each calculation you use.

2 Investigate the following TO × TO puzzle.

- Look carefully at the digits in these two calculations. What do you notice?

$$48 \times 42$$

$$24 \times 84$$

- Find the answer to both of the calculations. What do you notice?
- Find the missing digits in this pair of calculations so the same thing happens.

$$3 \square \times 4 \square$$

$$\square 4 \times \square 3$$

- Can you make your own pairs of calculations that follow the same rule and have the same answer?



- 1 a $73 \times 49 = 3577$
 b $94 \times 73 = 6862$
 c $43 \times 97 = 4171$
 d $86 \times 54 = 4644$
 e $68 \times 45 = 3060$
 f $58 \times 64 = 3712$

Lesson 3: Multiplication TO $\times$ TO using the formal written method

- 1 a 63
 b 7
 c 48
 d 12
 e 12
 f 6
 2 a 420
 b 4000
 c 480
 d 630
 e 720
 f 560
 3 a 1890
 b 4624
 c 5092
 d 1862
 e 2223
 f 5063
 g 3672
 h 5046
 4 a 27 $\times$ 33 = 891
 b $26 \times 84 = 2184$
 c $36 \times 68 = 2448$
 d $38 \times 49 = 1862$
 e $56 \times 56 = 3136$
 f $43 \times 47 = 2021$
 g $29 \times 71 = 2059$
 h $35 \times 23 = 805$ or
 $35 \times 25 = 875$
 2 Answers will vary.

Lesson 4: Solving word problems (1)

- a $\times$
 b $\times$
 c $-$
 d $-$
 e $\div$
 f $\times$
 g $\times$
 h $+$
 i $-$
 j $\div$
 k $\div$
 l $\div$
 2 a £288
 b £88
 c £220.50
 d £1344
 e £936
 f £246
 g £24 255
 h Answers will vary.

- 1 a 2 globes
 b one telephone and one box of paints
 c Kettle £44.10
 d Glove £34.20
 e Set of 6 novels £32.40
 f Box of paints £25.20
 g Telephone £50.40
 h Tennis racquet £35.10
 2 Answers will vary

Unit 2, Week 2: Number - fractions

Lesson 1: Fractions, factors and multiples (1)

- 1 a $\frac{2}{5}$
 b $\frac{1}{2}$
 c $\frac{3}{4}$
 d $\frac{1}{2}$
 e $\frac{2}{5}$
 f $\frac{1}{3}$
 g $\frac{1}{2}$
 h $\frac{1}{4}$
 i $\frac{1}{3}$
 j $\frac{2}{8}$
 k $\frac{2}{3}$
 l $\frac{4}{7}$
 m $\frac{4}{5}$
 n $\frac{9}{11}$
 o $\frac{2}{3}$
 p $\frac{5}{7}$

2 Answers will vary.

3 Open

2 Answers will vary.

- 1 Answers will vary.
 2 Answers will vary.
 3 Answers will vary.

Lesson 2: Ordering fractions

- 1 a $\frac{2}{3}$, $\frac{9}{12}$, $\frac{5}{6}$
 b $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$
 c $\frac{1}{3}$, $\frac{5}{9}$, $\frac{4}{6}$
 d $\frac{2}{12}$, $\frac{1}{4}$, $\frac{3}{8}$
 e $\frac{1}{2}$, $\frac{3}{5}$, $\frac{6}{10}$
 f $\frac{7}{12}$, $\frac{2}{3}$, $\frac{3}{4}$
 g $\frac{1}{2}$, $\frac{4}{7}$, $\frac{2}{3}$
 h $\frac{1}{4}$, $\frac{2}{5}$, $\frac{4}{10}$
 i $\frac{3}{4}$, $\frac{13}{16}$, $\frac{7}{8}$
 j $\frac{1}{4}$, $\frac{2}{6}$, $\frac{3}{8}$
 k $\frac{3}{5}$, $\frac{7}{10}$, $\frac{3}{4}$
 l $\frac{1}{4}$, $\frac{1}{3}$, $\frac{4}{9}$

2 Answers will vary.

1 Answers will vary.

- 2 a $\frac{4}{8}$, $\frac{3}{5}$, $\frac{6}{10}$
 b $\frac{2}{5}$, $\frac{2}{3}$, $\frac{7}{9}$
 c $\frac{1}{4}$, $\frac{2}{7}$, $\frac{3}{3}$
 d $\frac{3}{12}$, $\frac{2}{6}$, $\frac{4}{9}$
 e $\frac{2}{10}$, $\frac{4}{15}$, $\frac{3}{5}$
 f $\frac{5}{14}$, $\frac{1}{2}$, $\frac{4}{7}$
 g $\frac{7}{12}$, $\frac{3}{4}$, $\frac{5}{6}$
 h $\frac{4}{14}$, $\frac{2}{4}$, $\frac{7}{7}$
 i $\frac{3}{8}$, $\frac{3}{4}$, $\frac{5}{6}$

- 3 a $\frac{5}{4}$, $\frac{12}{8}$, $\frac{8}{5}$
 b $\frac{7}{6}$, $\frac{4}{3}$, $\frac{13}{9}$
 c $\frac{10}{8}$, $\frac{7}{2}$, $\frac{3}{2}$
 d $\frac{10}{9}$, $\frac{7}{6}$, $\frac{15}{12}$
 e $\frac{18}{15}$, $\frac{9}{12}$, $\frac{14}{5}$
 f $\frac{20}{14}$, $\frac{12}{7}$, $\frac{7}{4}$
 g $\frac{15}{12}$, $\frac{4}{3}$, $\frac{9}{6}$
 h $\frac{18}{14}$, $\frac{9}{7}$, $\frac{11}{7}$
 i $\frac{14}{6}$, $\frac{8}{3}$, $\frac{11}{4}$

1 a, b, c, d Answers will vary.

Lesson 3: Adding fractions

- 1 a $10\frac{3}{4}$
 b $12\frac{3}{4}$
 c $10\frac{7}{8}$
 d $13\frac{8}{9}$
 e $8\frac{9}{10}$
 f 8
 g $14\frac{6}{7}$
 h 15
 i $9\frac{8}{12}$
 j $15\frac{10}{11}$
 2 a $\frac{6}{4} = 1\frac{1}{2}$
 b $\frac{7}{5} = 1\frac{2}{5}$
 c $\frac{9}{7} = 1\frac{2}{7}$
 d $\frac{10}{8} = 1\frac{5}{4}$
 e $\frac{14}{9} = 1\frac{5}{9}$
 f $\frac{10}{7} = 1\frac{3}{7}$
 g $\frac{14}{10} = 1\frac{4}{5}$
 h $\frac{14}{11} = 1\frac{3}{11}$
 i $\frac{13}{12} = 1\frac{1}{12}$

- 1 a $10\frac{2}{5}$
 b $7\frac{3}{8}$
 c $15\frac{1}{3}$
 d $13\frac{1}{9}$
 e $15\frac{2}{10}$
 f $15\frac{1}{2}$
 g 10
 h $14\frac{3}{7}$
 i $17\frac{1}{12}$
 j $11\frac{4}{13}$

2 Answers will vary.

3 Answers will vary.

- 1 a 3
 b $\frac{5}{8}$
 c $3\frac{2}{4}$
 d 3
 e 4
 f $2\frac{4}{6}$
 g $2\frac{7}{10}$
 h 4
 i $4\frac{1}{4}$
 j $2\frac{5}{12}$

2 Answers will vary.

3 Answers will vary.

Lesson 4: Subtracting fractions

- 1 a $1\frac{1}{5}$
 b $1\frac{1}{4}$
 c $\frac{4}{6}$
 d $\frac{2}{7}$
 e $\frac{1}{4}$
 f 1
 g $\frac{5}{9}$
 h $\frac{7}{2}$
 i $\frac{6}{8}$
 j $\frac{6}{11}$
 2 a $\frac{2}{8}$
 b $\frac{3}{7}$
 c $\frac{2}{4}$
 d $\frac{5}{10}$
 e $\frac{7}{5}$
 f $4\frac{1}{6}$
 g $4\frac{2}{9}$
 h 2
 i $2\frac{1}{12}$
 j $\frac{4}{10}$

- 1 a $2\frac{5}{7}$
 b $3\frac{4}{5}$
 c $2\frac{4}{8}$
 d $3\frac{3}{6}$
 e $2\frac{3}{3}$
 f $5\frac{7}{9}$
 g $3\frac{1}{2}$
 h $3\frac{4}{6}$
 i $4\frac{7}{12}$
 j $7\frac{7}{8}$

- 2 a $4\frac{5}{12}$
 b $3\frac{5}{12}$
 c $6\frac{8}{15}$
 d $7\frac{1}{2}$
 e $7\frac{1}{20}$
 f $7\frac{5}{14}$
 g $7\frac{4}{9}$
 h $7\frac{2}{20}$
 i $5\frac{11}{21}$
 j $9\frac{5}{36}$

1 Answers will vary.

- 2 a $8\frac{2}{5}$
 b $4\frac{7}{20}$
 c $5\frac{11}{18}$
 d $7\frac{1}{2}$
 e $8\frac{1}{12}$
 f $5\frac{19}{21}$
 g $4\frac{7}{15}$
 h $7\frac{4}{21}$
 i $6\frac{1}{10}$
 j $13\frac{21}{45}$
 k $2\frac{23}{24}$
 l $4\frac{4}{15}$

3 Answers will vary.

Unit 2, Week 3: Geometry - Position and direction

Lesson 1: Using coordinates to locate shapes

- 1 a A (-1, 3), B (5, 3), C (-3, 2), D (3, 2), E (-5, 0)

2 Answers will vary.

1 a Rustean Rovers

Coordinates of shot	(-2, 4)	(-5, 6)	(3, 4)	(-4, 1)	(2, 2)
Result	Miss	Goal	Miss	Goal	Miss

Ashwell United

Coordinates of shot	(3, 5)	(-6, 1)	(-1, 2)	(3, 4)	(-3, 3)
Result	Goal	Goal	Goal	Miss	Goal

b Ashwell United

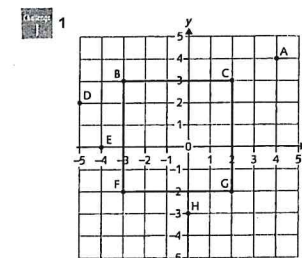
- 2 a A (-3, 2), B (3, 2), C (3, -4), D (-3, -4)
 b E (-2, 4), F (3, -1), G (1, -3), H (-4, 2)
 c K (-3, 2), L (3, 3), M (2, -1), N (-4, -2)

3 U (-1, -1)

- 1 a A (-1, 3), B (5, 3), G (5, -3), F (-1, -3)
 b A (-1, 3), B (5, 3), D (3, 2), C (-3, 2), C (-3, 2), D (3, 2), G (5, -3), F (-1, -3)
 c A (-1, 3), F (-1, -3), E (-5, 0)

2 Answers will vary.

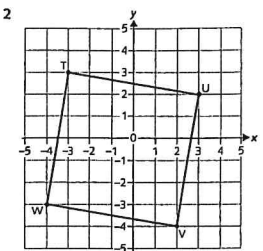
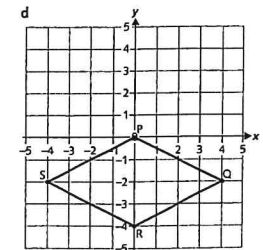
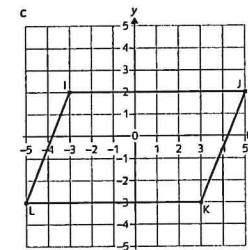
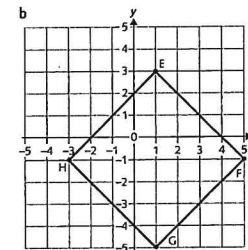
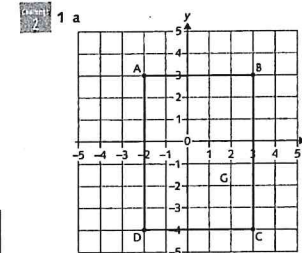
Lesson 2: Plotting shapes in the four quadrants



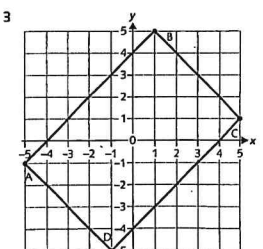
- 2 a B, D
 b F
 c G

- d E
 e H

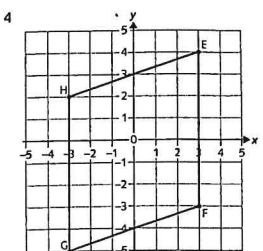
3 See 1



W (-4, -3)



D (-1, -5)



H (-3, 2)

Written addition (4)

Add numbers with up to 4 digits using the formal written method of columnar addition
Estimate and use inverse operations to check answers to a calculation



1 Estimate the answers to these calculations, then work them out.

a $562 + 243$ b $627 + 281$ c $593 + 342$ d $426 + 447$

2 These calculations add up to more than 1000.

a $649 + 624$ b $753 + 552$ c $617 + 748$ d $863 + 692$

1 Estimate the answers to these calculations, then work them out.

a $2641 + 2419$ b $3627 + 1782$ c $2836 + 2085$ d $3525 + 2647$
e $2371 + 3159$ f $3628 + 2753$ g $4183 + 2907$ h $5351 + 3829$

2 Now estimate the answers to these calculations, then work them out.

a $4763 + 2578$ b $3384 + 4839$ c $3962 + 2159$ d $4295 + 3827$

1 Estimate the answers to these calculations, then work them out.

a $6276 + 2845$ b $5395 + 3716$ c $4876 + 2978$ d $5075 + 3935$

2 Check your calculations using the inverse operation.

3 Can you think of a more efficient way than the written method for working out the answer to this calculation: $2999 + 2999$?



Written subtraction (3)

• Subtract numbers with up to 4 digits using the formal written method of columnar subtraction
• Estimate and use inverse operations to check answers to a calculation



Challenge 1

a $628 - 354$ b $781 - 426$ c $677 - 283$ d $706 - 324$
e $643 - 281$ f $866 - 292$ g $870 - 354$ h $892 - 565$
i $967 - 683$ j $992 - 755$ k $849 - 372$ l $851 - 537$

Challenge 2

1 Write an estimate for these calculations before you work them out.

a $3673 - 1835$ b $3827 - 2448$ c $4346 - 1571$ d $4386 - 2197$
e $5184 - 2358$ f $6396 - 4759$ g $7826 - 4188$ h $7069 - 2371$
i $7176 - 5338$ j $7275 - 4444$ k $8627 - 4708$ l $8642 - 3266$

2 Choose four of your calculations and check your answers using the inverse operation.

Challenge 3

1 Write an estimate for these calculations before you work them out.

a $7738 - 3819$ b $7628 - 5189$ c $7364 - 6715$ d $8672 - 3781$
e $8267 - 4598$ f $8461 - 2783$ g $9363 - 2495$ h $9532 - 4955$

2 Choose four of your calculations and check your answers using the inverse operation.

3 Can you think of a more efficient way than the written method for working out the answer to this calculation: $3999 - 1001$?

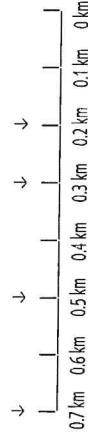


- Challenge 2**
- 1 a 40.6 m
 - 2 a 4.4 km
 - 3 11.7 km

- b 3 times taller
b 22 km

Challenge 3

Sam Jo Pat Nico



Lesson 3: Writing 2-step problems

Challenge 1

- 1 a 317
- b 788

2 No answers

Challenge 2

- 1 a 1033
- b 202

Unit 7, Week 1: Number – Addition and subtraction

Lesson 1: Adding mentally

Challenge 1

- 1 a 584
- b 577
- c 927
- d 712

- 2 a 658
- b 712
- c 801
- d 905

- 3 a 1052
- b 1043
- c 1005
- d 1126

- 4 a 1105
- b 1093
- c 1231
- d 1302

- 5 a 1016
- b 1212
- c 1018
- d 1039

- 6 a 1345
- b 1563
- c 1598
- d 1739

Challenge 2

- 1 a 1646
- b 1638
- c 1742
- d 1824

- 2 a 1515
- b 1694
- c 1807
- d 1928

- 3 a 1889
- b 1961
- c 2645
- d 3168

- 4 a 1977
- b 2244
- c 2542
- d 2908

- 5 a 592
- b 727
- c 453
- d 672

- 6 a 525
- b 477
- c 452
- d 576

Challenge 3

- 1 a 1236
- b 1179
- c 1365
- d 1151

- 2 a 1212
- b 1055
- c 1253
- d 1222

- 3 a 1322
- b 1342
- c 1513
- d 1157

- 4 a 1124
- b 1342
- c 1513
- d 1157

- 5 a 1322
- b 1375
- c 1827
- d 1981

- 6 a 888

Lesson 2: Subtracting mentally

Challenge 1

- 1 a 527
- b 574
- c 564
- d 149

- 2 a 523
- b 477
- c 452
- d 576

- 3 a 1236
- b 1179
- c 1365
- d 1151

- 4 a 1212
- b 1055
- c 1253
- d 1222

- 5 a 1322
- b 1375
- c 1827
- d 1981

- 6 a 888

Challenge 2

- 1 a 1236
- b 1179
- c 1365
- d 1151

- 2 a 1212
- b 1055
- c 1253
- d 1222

- 3 a 1322
- b 1375
- c 1827
- d 1981

- 4 a 888

- 5 a 1322
- b 1375
- c 1827
- d 1981

- 6 a 888

Challenge 3

- 1 a 1124
- b 1342
- c 1513
- d 1157

- 2 a 1212
- b 1055
- c 1253
- d 1222

- 3 a 1322
- b 1375
- c 1827
- d 1981

- 4 a 888

Unit 7, Week 2: Number – Addition and subtraction

Lesson 1: Written addition (4)

Challenge 1

- 1 a 805
- b 908

- 2 a 1273
- b 1305

- 3 a 5060
- b 5409
- c 4921
- d 6172

- 4 a 7341
- b 8223
- c 6121
- d 8122

- 5 a 9121
- b 9111
- c 7854
- d 9010

- 6 a 1273
- b 1305
- c 1365
- d 1555

- 7 a 5530
- b 6381
- c 7090
- d 9180

- 8 a 6121
- b 8122
- c 7854
- d 9010

- 9 a 1273
- b 1305
- c 1365
- d 1555

- 10 a 5530
- b 6381
- c 7090
- d 9180

- 11 a 6121
- b 8122
- c 7854
- d 9010

- 12 a 1273
- b 1305
- c 1365
- d 1555

- 13 a 5530
- b 6381
- c 7090
- d 9180

- 14 a 6121
- b 8122
- c 7854
- d 9010

- 15 a 1273
- b 1305
- c 1365
- d 1555

- 16 a 5530
- b 6381
- c 7090
- d 9180

- 17 a 6121
- b 8122
- c 7854
- d 9010

- 18 a 1273
- b 1305
- c 1365
- d 1555

- 19 a 5530
- b 6381
- c 7090
- d 9180

- 20 a 6121
- b 8122
- c 7854
- d 9010

Lesson 2: Written subtraction (3)

Challenge 1

- a 274
- b 355
- c 394
- d 382

- a 516
- b 327
- c 284
- d 327

- a 274
- b 355
- c 394
- d 382

- a 516
- b 327
- c 284
- d 327

- a 274
- b 355
- c 394
- d 382

- a 516
- b 327
- c 284
- d 327