

# Contents

How to use this book	2	
WN2.5a	6-digit numbers	3–4
WN2.5b	Negative numbers	5–6
WN2.6	Divisibility	7–8
WN2.7	Multiplying and dividing by 10, 100 and 1000	9–10
WN2.8	Multiples	11–13
WN2.9	Factors and prime numbers	14–15
WN2.10	Using brackets: re-ordering numbers	16–19
WN2.11	Using brackets: re-ordering and partitioning numbers	20–24
WN2.12	Order of operations	25
WN2.13	Rounding	26–29
WN2.14	Working forwards and backwards	30
WN2.15a	Addition and subtraction: rounding and adjusting	31
WN2.15b	Addition and subtraction: counting on and back	32
WN2.15c	Addition and subtraction: complements to 100 and 1000	33–34
WN2.16	Doubles, near doubles and halves	35–37
WN2.17	Addition and subtraction: formal methods	38–44
WN2.18a	Multiplication: rounding and adjusting	45
WN2.18b	Multiplication: multiples of 10	46
WN2.19a	Multiplication: grid method	47–49
WN2.19b	Multiplication: formal methods	50–53
WN2.19c	Multiplication: grid method and formal methods	54–58
WN2.20a	Division: chunking method	59–61
WN2.20b	Division: expanded method	62–68
WN2.20c	Division: formal method	69–73
WN2.21	Using the best strategy to solve a calculation	74–79

Each page has a title telling you what it is about.













## Adding and subtracting

WN2.15a

Find the difference between the number of miles travelled by each car.

Hint: Use the nearest multiple of 10. You can choose whether to count back or count on.

$$\begin{array}{r} 1. \quad 246 - 60 = 186 \text{ miles} \\ \text{Adjust } +1 = 187 \text{ miles} \end{array}$$

1			2			3		
	246 miles	59 miles		427 miles	79 miles		154 miles	88 miles
4			5			6		
	285 miles	79 miles		274 miles	57 miles		164 miles	89 miles







This Hint will help you to answer the question.

This shows how to set out your work.

Instructions look like this. Always read these carefully before starting.

How many centimetres must each snail crawl to reach the lettuce?

$$\begin{array}{r} 7. \quad 247 - 40 = 207 \text{ cm} \\ \text{Adjust } +1 = 208 \text{ cm} \end{array}$$

7	8	9	10	11	
					
39 cm	67 cm	99 cm	128 cm	189 cm	247 cm

Work with a partner. Agree who will count back and who will count on. Try this subtraction:  $167 - 89$ . Reverse roles. Which is the best method for you? Try  $224 - 129$ .

Read this to check you understand what you have been learning on the page.

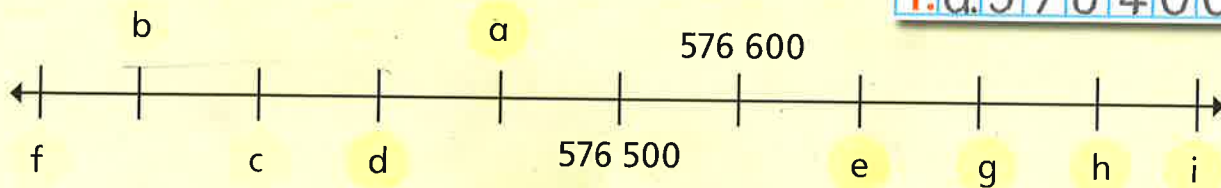


I can do a calculation by rounding one of the numbers and then adjust my answer at the end.

These are Rocket activities. Ask your teacher if you need to do these questions.

# 6-digit numbers

Write the number that matches each letter on the line.



Write each pair of numbers in figures. Use  $<$  or  $>$  between them.

2 Fifty-six thousand, four hundred and two

3 Sixty-four thousand, seven hundred and eighty-two

Twenty-nine thousand, six hundred and seventeen

Seven hundred and thirty thousand, two hundred and twelve

4 Three hundred thousand, eight hundred and three

5 Two hundred and seventy-eight thousand, nine hundred and twenty

Fifty-four thousand, six hundred and sixty

Twelve thousand, seven hundred and eighty-six

6 One hundred and four thousand, two hundred and two

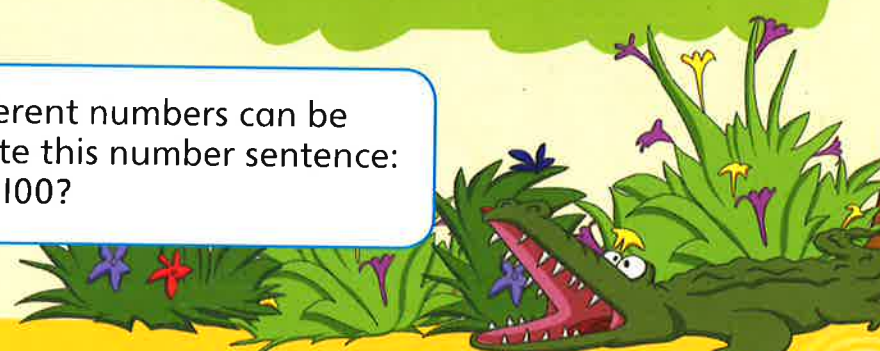
7 Thirty-seven thousand, four hundred and seventy-two

Ninety-nine thousand, nine hundred and ninety-nine

Eight hundred and twenty-seven thousand, four hundred and six



How many different numbers can be used to complete this number sentence:  
 $10\ 998 < \square < 11\ 100$ ?





Write the next four numbers in each sequence.

1. 59473, 60473, 61473, 62473



2. 56473, 57473, 58473, ...

3. 24608, 24708, 24808, ...

4. 66419, 56419, 46419, ...

5. 162308, 172308, 182308, ...

6. 605606, 705606, 805606, ...

7. 75909, 75919, 75929, ...

8. 788620, 787620, 786620, ...

9. 64247, 64347, 64447, ...

10. 764940, 664940, 564940, ...

11. 512624, 522624, 532624, ...

True or false?



11 One more than one hundred thousand, nine hundred and ninety-nine is two hundred thousand.

12 Sixty thousand is halfway between sixty-one thousand, four hundred and ninety-nine, and fifty-nine thousand, five hundred.

13  $919191 < 919199$

14 One million is one more than nine hundred and ninety-nine thousand, nine hundred and ninety-nine.



How many whole numbers are there between 1 million and 2 million?

I can count on and back from a number in steps of the same size



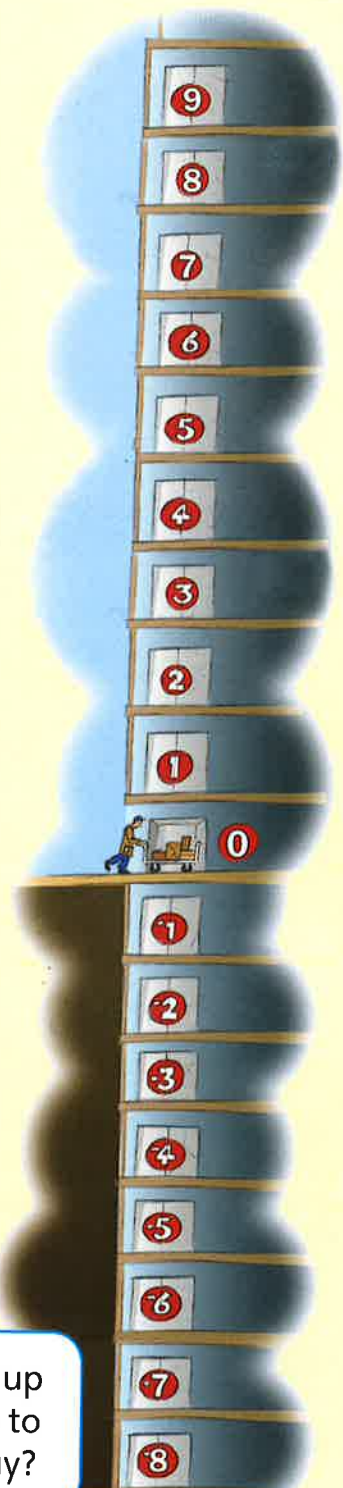
# Negative numbers

Write the floor where each lift ends its journey.

1. -3



- 1 starts at 3, goes down 6 floors
- 2 starts at 1, goes down 3 floors
- 3 starts at 4, goes down 10 floors
- 4 starts at  $-8$ , goes up 5 floors
- 5 starts at  $-2$ , goes up 6 floors
- 6 starts at ground floor, goes down 1 floor
- 7 starts at 3, goes up 6, then down 4 floors
- 8 starts at 4, goes down 5, then up 3 floors
- 9 starts at 6, goes up 2, then down 9 floors
- 10 starts at 5, goes down 3, then up 4 floors
- 11 Write three more questions about the lift and also write the answers.



Dry ice is  $-35^{\circ}\text{C}$  in a freezer cabinet. If it warms up by  $\frac{1}{2}^{\circ}\text{C}$  each day, how many days before it gets to  $0^{\circ}\text{C}$ ? What if it rises  $\frac{1}{4}^{\circ}\text{C}$  each day?  $\frac{3}{4}^{\circ}\text{C}$  each day?



# Negative numbers

Write the temperature at night.

1 Day:  $5^{\circ}\text{C}$   
Night: falls  $10^{\circ}\text{C}$

2 Day:  $6^{\circ}\text{C}$   
Night: falls  $7^{\circ}\text{C}$

4 Day:  $10^{\circ}\text{C}$   
Night: falls  $14^{\circ}\text{C}$

5 Day:  $8^{\circ}\text{C}$   
Night: falls  $5^{\circ}\text{C}$

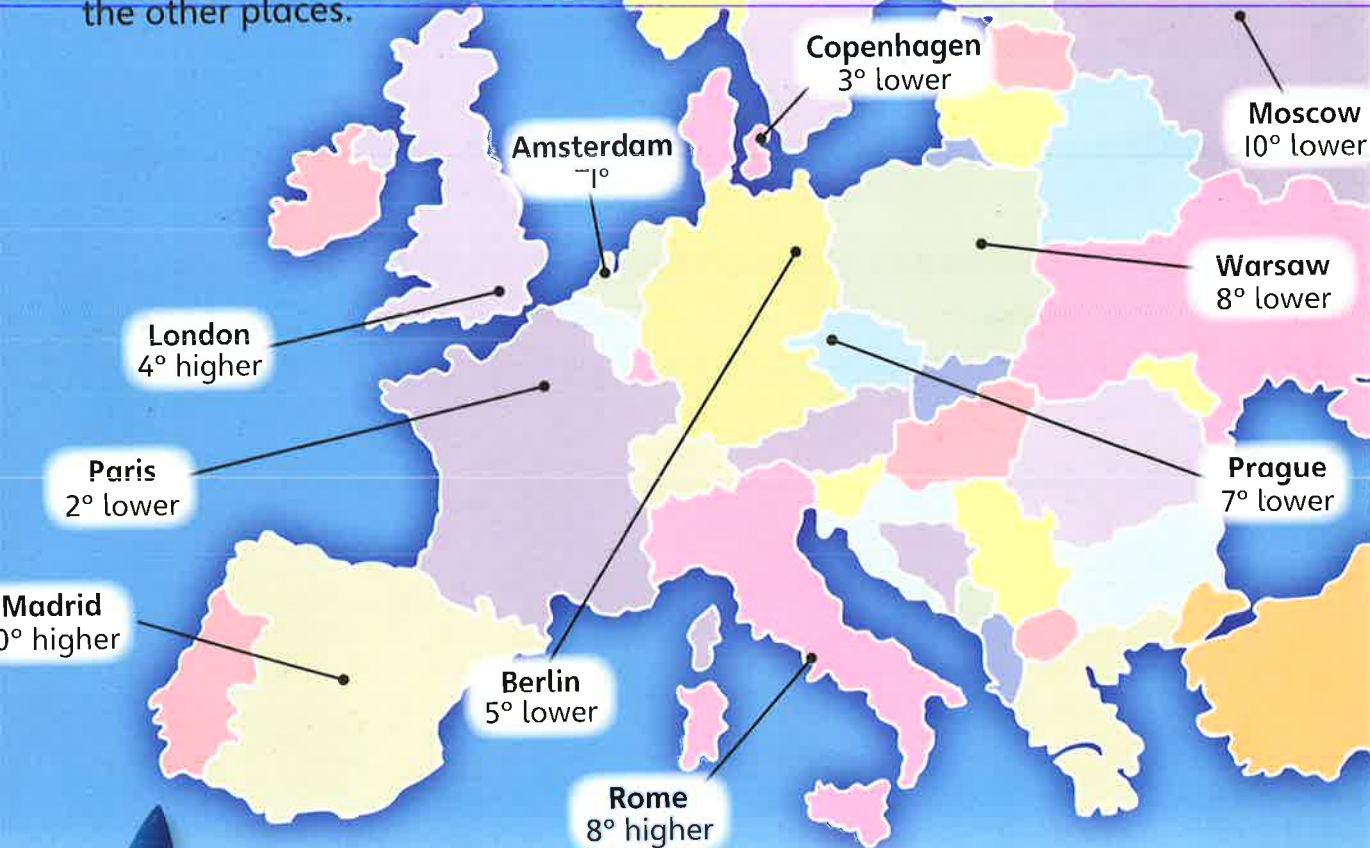
3 Day:  $2^{\circ}\text{C}$   
Night: falls  $11^{\circ}\text{C}$

6 Day:  $0^{\circ}\text{C}$   
Night: falls  $4^{\circ}\text{C}$

1.  $-5^{\circ}\text{C}$

7 All temperatures refer to Amsterdam, which is  $-1^{\circ}\text{C}$ . Write the temperatures of the other places.

7. Paris:  $-3^{\circ}\text{C}$



Using a newspaper or the internet, write a weather report for temperatures around the world yesterday.

# Divisibility

The animals are going to the wildlife park.  
Can they be paired exactly in 2s, yes or no?



1 47 giraffes



2 56 horses

3 84 zebras

4 138 lions

5 249 tigers

6 54 elephants

7 427 llamas

8 109 monkeys

9 386 emus



10 245 kangaroos

11 1008 buffalo

12 478 snakes

13 97 rhinos

14 164 hippos

15 300 ostriches



For each set of animals that can be paired in 2s, write how many pairs. Can they be grouped exactly in 4s?

Write three numbers of animals that can be grouped in:

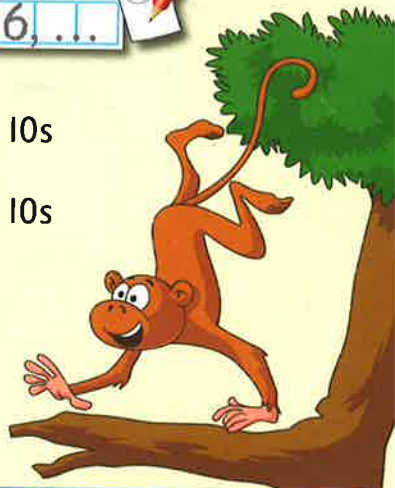
16 2s, but not in 4s

17 5s, but not in 10s

18 5s, but not in 2s

19 4s, but not in 10s

20 Write three numbers of animals that cannot be grouped in 2s, 4s, 5s or 10s.



Investigate how many numbers between 1 and 100 are divisible by 2.  
How many are divisible by 4? By 5?  
How many are divisible by each of 2, 4 and 5?



I can use my halving skills to test the divisibility of a number

# Tests of divisibility

1 Copy and complete the table. Write a tick to show that the number is divisible by the headings.

	2	3	4	5	6	8	9	10	25	50
140	✓			✓						
270										
3000										
85										
76										
432										
175										
234										
875										
4134										

2 Can you find any numbers that will have 6 ticks, 7 ticks, 8 ticks, 9 ticks, 10 ticks?

Matt thinks he has discovered a test for divisibility by 7 for 3-digit numbers, for example 637.

He says: double the hundreds digit.

$$\text{double } 6 = 12$$

Then add it to the remaining part of the number.

$$12 + 37 = 49$$

If the resulting 2-digit number is divisible by 7, then so is the 3-digit number.

Investigate the method for different 3-digit numbers to test Matt's discovery.





# Multiplying by 100 and 1000

Label the digits. Multiply by 100. Write the new value of the underlined digit.

1.	H	T	U																
	3	<u>6</u>	1	$\times$	1	0	0	=	3	6	1	0	0						
				Value =	3	0	thousand												

- 1 361
- 2 452
- 3 68
- 4 716
- 5 605
- 6 424
- 7 281
- 8 348
- 9 110
- 10 193
- 11 91
- 12 763



How many times must you multiply by 10 to get from 1 to 1 million?

Be a mathmillionaire! Choose the correct answer.



- 13 430  $\times$  10 is:  
43000      4303  
430        4300
- 14 7602  $\times$  100 is:  
760200    760020  
7602000   760200
- 15 351  $\times$  1000 is:  
350010    351000  
351010    3510000
- 16 8080  $\times$  1000 is:  
8080000   8080100  
808000    8080080
- 17 5010  $\times$  1000 is:  
5010000   50100  
501000    500010
- 18 764  $\times$  1000 is:  
7640       764000  
76400     76060

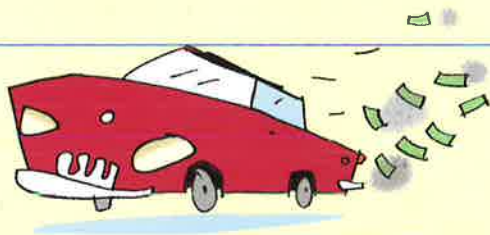


# Calculating with 10, 100 and 1000

1 Divide each red number by 1000. Find the blue number that matches your answer.

1. a and d

- |              |            |           |        |            |
|--------------|------------|-----------|--------|------------|
| a) 288 000   | b) 360 000 | c) 3604   | d) 288 | e) 360 400 |
| f) 7 110 000 | g) 637 000 | h) 63700  | i) 490 | j) 701     |
| k) 3604 000  | l) 49 000  | m) 409    | n) 49  | o) 7110    |
| p) 3606 000  | q) 40 000  | r) 90 900 | s) 637 | t) 360     |
| u) 9090 000  | v) 490 000 | w) 3606   | x) 40  | y) 9090    |



2 How many months are there in a century?  
In a millennium?  
How many weeks in a century?  
In a millennium?

3 A car costs 47p per mile to drive. How much does it cost to drive 100 miles? 1000 miles?

4 James saved £15 per week for 100 weeks. How much did he have? How much would he have after 2 years?

Copy and complete.

5.  $273 \times 100 = 27300$

5  $273 \times 100 =$

6  $3600 \div 10 =$

7  $4875 \times 10 =$

8  $3140000 \div 1000 =$

9  $402 \times 1000 =$

10  $76 \times 1000 =$

11  $5138 \times 100 =$

12  $620 \times 10 =$

13  $53000 \div 100 =$



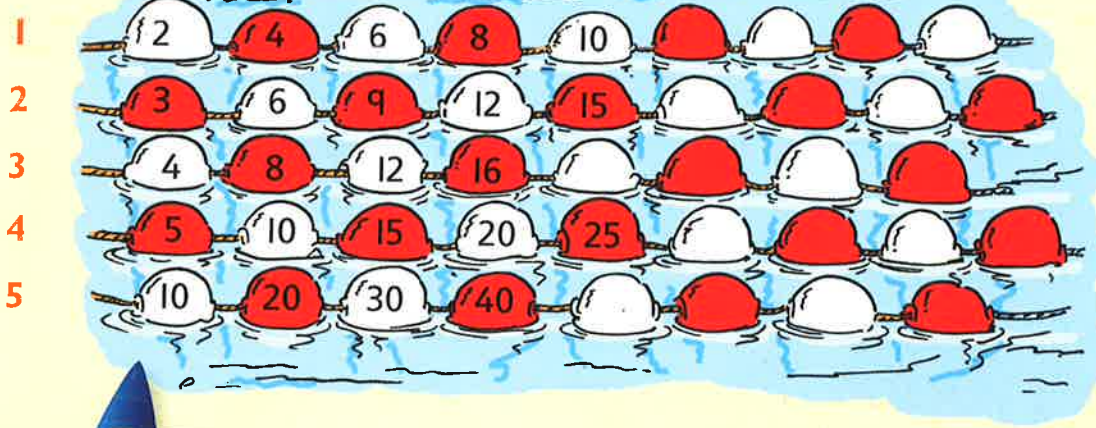
You multiply by 10 and your partner multiplies by 100. Start with a number such as 7. How many multiplications do you each do to get past 6 million?



# 2s, 3s, 4s, 5s, 10s

Write the next four multiples in each list.

1. | 2, | 4, | 6, | 8



How many multiples of 2 under 50 are there?  
How about multiples of 3? 4? 5?

6

Write down the multiples of 5 from this grid.

Write the multiples of 10.

Which numbers are in both lists?



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



7

Write down the multiples of 2 from this grid.

Write the multiples of 3.

Which numbers are in both lists?

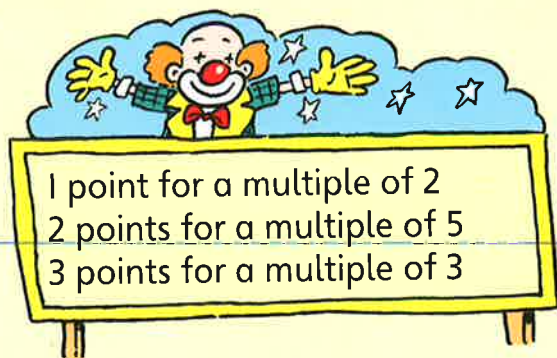
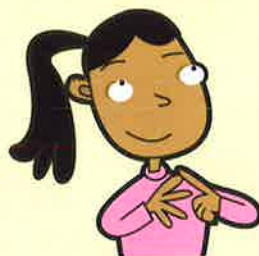


1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30



True or false?

- 1 All multiples of 4 are also multiples of 2.
- 2 All multiples of 5 are also multiples of 10.
- 3 All multiples of 2 are even numbers.
- 4 All multiples of 3 are odd numbers.
- 5 12 is a multiple of 2, 3, and 4.
- 6 All numbers which are multiples of 4 and 5 are multiples of 10.



7.	16	→	1 point
	21	→	3 points
	total		4 points

Write each overall score.

7

16	13	21	17
----	----	----	----

10

26	23	35	21
----	----	----	----

8

25	11	9	14
----	----	---	----

11

27	7	4	3
----	---	---	---

9

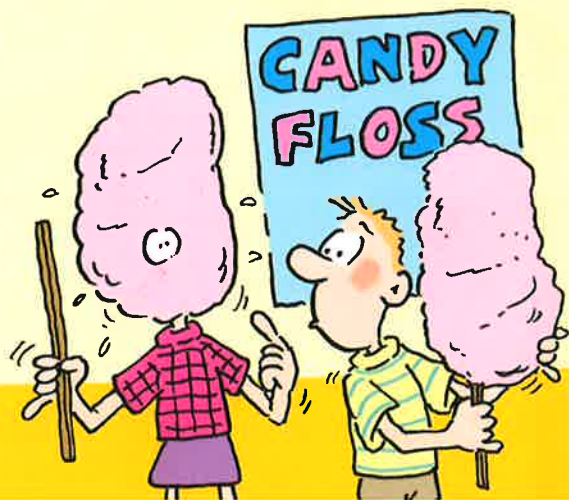
7	11	13	17
---	----	----	----

12

19	35	8	28
----	----	---	----

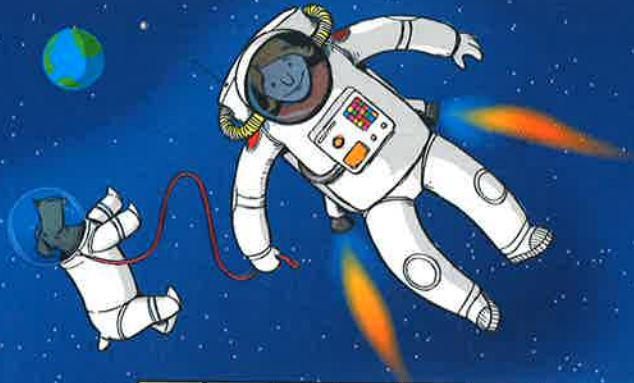
Write the smallest number that is:

- 13 a multiple of 2 and a multiple of 5
- 14 a multiple of 3 and a multiple of 2
- 15 a multiple of 5 and a multiple of 25
- 16 a multiple of 50 and a multiple of 100
- 17 a multiple of 4 and a multiple of 5
- 18 a multiple of 10 and a multiple of 25



# Common multiples

Use the multiplication square to help you write all the numbers in the square that are multiples of:



1 7      2 4      3 9

Find the numbers that are common multiples of:

- 4 2 and 3      5 3 and 4  
 6 2 and 7      7 4 and 6  
 8 4 and 8      9 4 and 5

1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100



12 is a common multiple of 2, 3 and 4. Find another number that is a common multiple of consecutive numbers.

Find the smallest common multiples of:

10 2 and 3

11 2 and 5

12 3 and 4

13 3 and 5

14 2 and 4

15 3 and 12

16 4 and 6

17 8 and 12

18 6 and 8

19 8 and 10

20 10 and 15

21 25 and 30





For each number, complete the pairs of factors.

1. 20 → 1 × 20, 2 × ...

1 20 → 1 × , 2 × , 4 ×

2 18 → 1 × , 2 × , 3 ×

3 30 → 1 × , 2 × , 3 × , 5 ×

4 14 → 1 × , 2 ×

5 40 → 1 × , 2 × , 4 × , 5 ×

6 32 → 1 × , 2 × , 4 ×

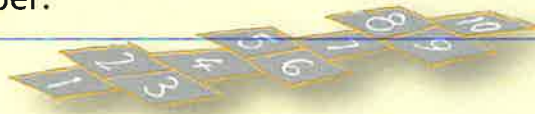
7 54 → 1 × , 2 × , 3 × , 6 ×

8 63 → 1 × , 3 × , 7 ×



1. 20: 1, 2, 4, ...

Use your answers to write a list of factors of each number.



The numbers 30 and 40 each have four pairs of factors. Investigate other numbers with four pairs of factors.



Write a list of all the factors of these numbers.

- 9  6    10  16    11  10    12  50    13  28    14  48    15  60    16  52

Find a missing factor in each set.

- 17 Factors of 12  
1    2  
6    12    4

- 18 Factors of 20  
1    5    20  
2    10

- 19 Factors of 18  
1    18  
6    2    3

- 20 Factors of 28  
1    14  
4    2

- 21 Factors of 15  
3    5  
15

- 22 Factors of 40  
4    1    2  
8    20    10    40



# Prime numbers



Large primes are used as security codes because they are difficult to crack.  
Find some prime numbers greater than 100.  
Try to find some very large ones.  
Use the test for divisibility to help you.  
Did you know? The largest prime number found so far has over 20 digits!

True or false?



- 1 All prime numbers are odd numbers.
- 2 There are ten prime numbers less than 30.
- 3 All prime numbers have exactly two factors.
- 4 The total of two prime numbers is always an even number.
- 5 Every number next to a multiple of 6 is a prime number.
- 6 Every 2-digit prime number is next to a multiple of 6.
- 7 Every 2-digit multiple of 6 is next to a prime number.
- 8 There is only one 2-digit prime number that has 6 as a tens digit.
- 9 1 is not a prime number.
- 10 All 2-digit prime numbers have a units digit of 1, 3, 7 or 9.
- 11 There are four prime numbers between 10 and 20.
- 12 A square number cannot be a prime number.



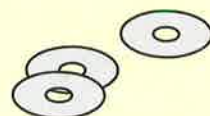
These pairs of prime numbers have a total of 90,  
7 and 83  
11 and 79  
Can you find seven more pairs like this?



# Re-ordering numbers

Re-order these numbers to make the calculations easier to do.

1.	2	×	3	×	4	×	5		
	=	(	2	×	5)	×	3	×	4
		=	10	×	3	×	4		
		=	30	×	4				
		=	120						



$2 \times 3 \times 4 \times 5 =$

$2 \quad 7 \times 2 \times 3 \times 5 =$

$4 \times 3 \times 5 \times 3 =$

$4 \quad 10 \times 2 \times 4 \times 3 =$

$9 \times 2 \times 4 =$

$6 \quad 5 \times 2 \times 5 \times 5 \times 5 \times 2 =$

$8 \times 3 \times 5 =$

$8 \quad 6 \times 7 \times 2 =$

$3 \times 5 \times 3 \times 6 =$

$10 \quad 3 \times 9 \times 6 \times 4 =$

$7 \times 3 \times 9 \times 4 =$

$12 \quad 4 \times 8 \times 7 \times 9 =$



Make up some long calculations of your own to simplify.



# Using brackets

Each child has some vouchers. How much are they worth in total?

Hint: Choose your order. Use brackets to show which calculations you are doing together.

$$1. (\pounds 7 + \pounds 3) + (\pounds 6 + \pounds 5) + \pounds 8 = \pounds 29$$

1

£5 £8 £7 £6 £3

2

£8 £8 £9 £6 £4

3

£5 £8 £3 £3 £6

4

£3 £5 £5 £6 £4

5

£7 £8 £9 £3 £4

6

£6 £8 £4 £5 £7

7

£8 £6 £6 £3 £5

8

£4 £8 £7 £4 £3



Rashida has five vouchers that have a total value of £40. What might each voucher be worth?

$$9. (8 + 2) + 9 + 6 + 7 = 32$$

Complete these additions.

Hint: Choose your order. Use brackets to show which calculations you are doing together.

9  $7 + 8 + 9 + 6 + 2 =$

10  $8 + 9 + 7 + 5 + 9 =$

11  $4 + 3 + 5 + 8 + 9 =$

12  $7 + 6 + 3 + 4 + 8 =$

13  $6 + 5 + 8 + 8 + 4 =$

14  $5 + 3 + 6 + 6 + 4 =$

15  $7 + 7 + 4 + 6 + 5 =$

16  $3 + 5 + 5 + 7 + 8 =$



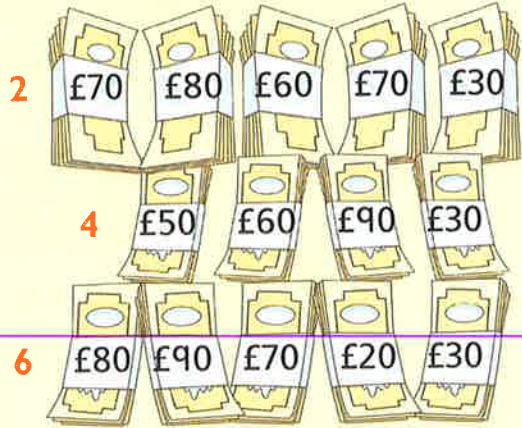
# Using brackets

Find each total.

$$1. (\pounds 40 + \pounds 60) + (\pounds 30 + \pounds 90) = \pounds 220$$

£100
+
£120
= £220

Hint: Use brackets to show which calculations you are doing together.



The table shows how much each plant grew each month. Use the table to answer the questions.

8 How much did each plant grow in the first 6 months of the year?

Plant	Jan	Feb	March	April	May	June
Bogsquash	60 cm	70 cm	30 cm	80 cm	20 cm	80 cm
Treacleflower	70 cm	90 cm	80 cm	60 cm	50 cm	30 cm
Googlygorse	40 cm	40 cm	60 cm	50 cm	70 cm	20 cm
Squiffleweed	30 cm	60 cm	70 cm	80 cm	50 cm	40 cm
Bumbleroot	80 cm	60 cm	50 cm	30 cm	70 cm	50 cm
Bogglerot	60 cm	50 cm	80 cm	60 cm	50 cm	40 cm

9 How much did all the plants grow in each month?



9. Bogsquash: 340 cm

If each plant grew 20 cm each month for the rest of the year, how much will each one have grown in a year?

# Using brackets

Write the total price. How much change do you get from £20?

Hint: Use the nearest multiple of 10. You can choose whether to count back or count on.

1.	(£2 + £8)	+	(£5 + £4)	=	£19
	£10		£9	=	£19
	£1 change				



In Nonsense Land there are only £3, £2 and £5 notes. Are there any amounts up to £20 that you cannot make?

Write the total amount.

5 200 500 800 600

6 500 700 800

7 300 900 600 700

8 400 300 800
































9 800 300 500 100

10 600 400 300 500



# Using brackets and partitioning

Copy and complete.

- 1  $3 \times 43 = (3 \times 40) + (3 \times 3) = 120 + 9 =$  
- 2  $4 \times 36 = (4 \times 30) + (4 \times 6) =$    $+$    $=$  
- 3  $5 \times 27 = (5 \times 20) + (5 \times 7) =$    $+$    $=$  
- 4  $9 \times 17 = (9 \times$    $) + (9 \times$    $) =$    $+$    $=$  
- 5  $7 \times 52 = (7 \times$    $) + (7 \times$    $) =$    $+$    $=$  
- 6  $6 \times 24 = ($    $\times$    $) + ($    $\times$    $) =$    $+$    $=$  
- 7  $8 \times 32 = ($    $\times$    $) + ($    $\times$    $) =$    $+$    $=$  



Write the cost of these jacket potatoes.

- 8 3 with beans
- 9 4 with sweetcorn
- 10 5 with mushy peas
- 11 7 with chilli
- 12 3 with sweetcorn and 4 with beans

8.	32 p		
	$\times 3$		
	90	$3 \times 30$	
	6	$3 \times 2$	
	96 p		

## Baked potato fillings

Beans 32p

Sweetcorn 28p

Mushy peas 42p

Chilli 46p



If four people order one jacket potato each, what could the total cost be?

# Using brackets and partitioning

Copy and complete.

1.	$(6 \times 50)$	+	$(6 \times 6)$			
	300	+	36	=	336	

1  $6 \times 56 =$

2  $8 \times 37 =$

3  $5 \times 78 =$

4  $7 \times 47 =$

5  $6 \times 64 =$

6  $7 \times 29 =$

7  $5 \times 23 =$

8  $3 \times 32 =$

9  $8 \times 34 =$

Write the total cost of the trip.

10.	$(6 \times 60)$	+	$(6 \times 8)$			
	360	+	48	=	£408	

10 Fly to Paris £68



6 People

11 Fly to Rome £72



8 People

12 Sail to Jersey £44



7 People

13 Cycle to Dublin £36



7 People

14 Sail to Iona £64



8 People

15 Fly to Seville £59



6 People

16 Fly to Prague £22



6 People

17 Sail to Calais £87



8 People

18 Fly to Milan £145



7 People

Work with a partner to create the 21 times-table.



I can show my thinking by using brackets when I solve a problem in several steps

# Using brackets and partitioning

Complete the multiplications.

1  $3 \times 146 = (3 \times 100) + (3 \times 40) + (3 \times 6) = 300 + 120 + 18 =$

2  $5 \times 243 = (5 \times 200) + (5 \times 40) + (5 \times 3) =$

3  $4 \times 317 = (4 \times \square) + (4 \times \square) + (4 \times \square) =$

4  $6 \times 128 = (6 \times \square) + (6 \times \square) + (6 \times \square) =$



Complete the multiplications using brackets to help you.

5.	$3 \times 416 = (3 \times 400) + (3 \times 10) + (3 \times 6)$
	$= 1200 + 30 + 18$
	$= 1248$

5  $416 \times 3 =$

6  $279 \times 5 =$

7  $186 \times 7 =$

8  $304 \times 6 =$

9  $512 \times 4 =$

10  $484 \times 3 =$

These are the sales for one Saturday at the Electronics Superstore. Write the amount collected.

11 £274



sold 6

12 £187



sold 3

13 £368



sold 4

14 £126



sold 8

15 £434



sold 7

16 £835



sold 5


How many of each item can you buy for £2000?


I can show my thinking by using brackets when I solve a problem in several steps


# Using partitioning


Use the factors of the first number to help you do the multiplications.


1.	18	$\times$	45	
	9	$\times$	2	$\times$
	9	$\times$	90	
	=	810		


1  $18 \times 45 =$  


2  $14 \times 35 =$  


3  $14 \times 15 =$  


4  $18 \times 55 =$  

5  $16 \times 25 =$  

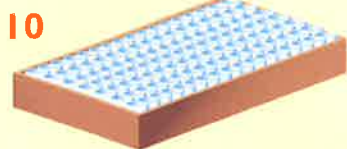
6  $24 \times 35 =$  

7  $15 \times 22 =$  

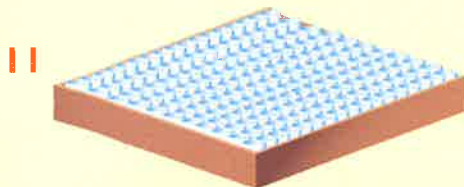
8  $16 \times 42 =$  

9  $16 \times 34 =$  

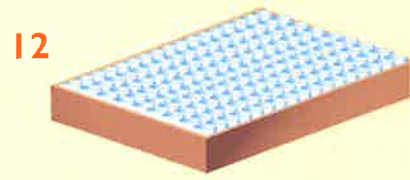
Find the number of glasses in each box. What strategy will you use?



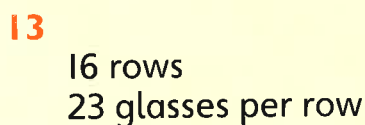
15 rows  
22 glasses per row



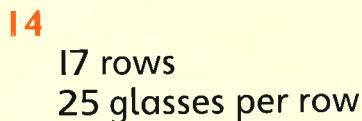
18 rows  
25 glasses per row



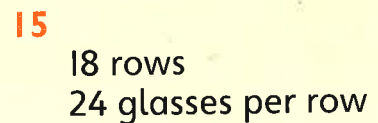
21 rows  
19 glasses per row



16 rows  
23 glasses per row



17 rows  
25 glasses per row



18 rows  
24 glasses per row



How could 480 glasses be arranged in a rectangular box?



I can show my thinking by writing out the steps when I solve a problem in stages

# Using brackets and partitioning

Write out the 10 and the 2 times-tables.  
Add the multiples.

Use your grid to help you work out the answers.

10	20	30	40	...
2	4	6	8	...
12	24	36	...	...

1.  $(12 \times 20) + (12 \times 3) =$

	240	+	36	=	276
--	-----	---	----	---	-----

1  $12 \times 23$



2  $12 \times 27$



3  $12 \times 31$



4  $12 \times 43$

5  $35 \times 12$

6  $12 \times 47$

7  $52 \times 12$

8  $42 \times 12$

9  $39 \times 12$

10  $48 \times 12$

11  $33 \times 12$

12  $28 \times 12$



Work out the 13 times-table using the same method as shown above.

Use this table to help you multiply by 26.

What other multiplication facts can the 13 times-table help with? For example,  $\times 39$  or  $\times 52$ . Explore writing some really big multiplications, such as  $8 \times 52$ .



I can show my thinking by writing out the steps when I solve a problem in stages



# Order of operations

Write these calculations with brackets.  
Work out the answers and compare them.

1  $12 + 3 - 6 =$

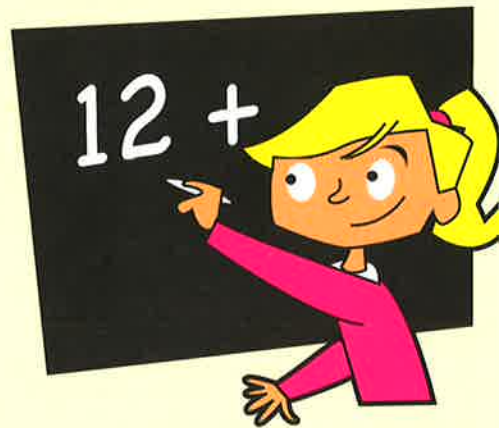
2  $45 - 7 + 37 =$

3  $350 + 250 - 175 =$

4  $48 + 92 - 39 =$

5  $625 - 50 + 75 =$

6  $175 + 225 - 80 =$



Use the numbers 20, 16 and 38 with + and -.  
What different maths questions can you make?

Use brackets to show the calculations you are carrying out first.  
How many different calculations can you create by moving the brackets?

If you include one more number what possible combinations of calculations are there now?

Use the rule of operations to put these calculations into brackets and solve them.

7  $2 \times 10 + 4 \times 6 =$

8  $4 \div 2 + 6 \times 1 =$

9  $6 + 4 \times 3 + 1 =$

10  $7 - 3 \div 1 + 2 =$

11  $3 + 4 \div 2 + 5 =$

12  $60 + 40 \div 10 + 20 =$

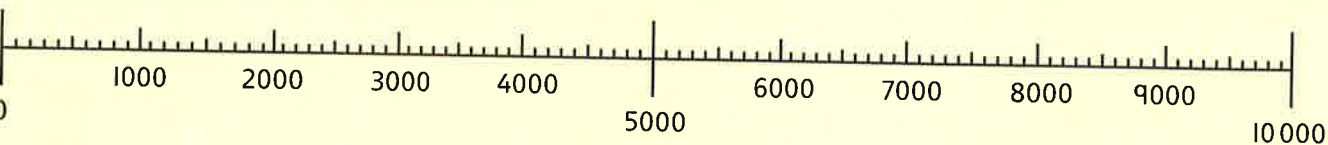


I have investigated the rule of the order of operations

# Rounding

Round each number to the nearest 100. Use the number line to help you.

5983 → 6000



1 5983

2 3812

3 3501

4 8712

5 6574

6 4329

7 2863

8 7750

Round each amount to the nearest £100.

9. £468 → £500

7 Basanti's father said that whatever she saved by her birthday, he would give her the same amount rounded to the nearest £100. She has already saved £270. How much more must she save to get £400 from him?

8 If you did not have a number line explain how you could round to the nearest 1000, 100 and 10.



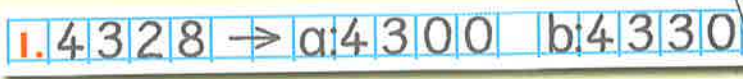
Write your own word problem involving rounding to the nearest 100.



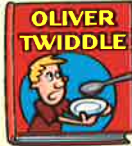
I can round to the nearest 10 or 100

# Rounding

Round the number of words to the nearest a: hundred and b: ten. You can draw a number line to help.



1 Oliver Twiddle  
4328 words



2 Footy Facts  
6795 words



3 Dinosaur Planet  
3827 words



4 Classroom Mystery  
13452 words



5 Fun at the Stables  
11261 words



6 The School Legend  
8875 words



7 Tiger Escape  
6983 words



8 The Famous Seven  
8914 words



9 Sleep Walker  
9276 words



If Jayne reads these two books, find the total number of pages, then round it to the nearest hundred.

10 Oliver Twiddle  
and  
Fun at the Stables

11 Famous Seven  
and  
Dinosaur Planet

12 Sleep Walker  
and  
The School Legend

13 Footy Facts  
and  
Classroom Mystery

14 Tiger Escape  
and  
The School Legend

15 Oliver Twiddle  
and  
Sleep Walker



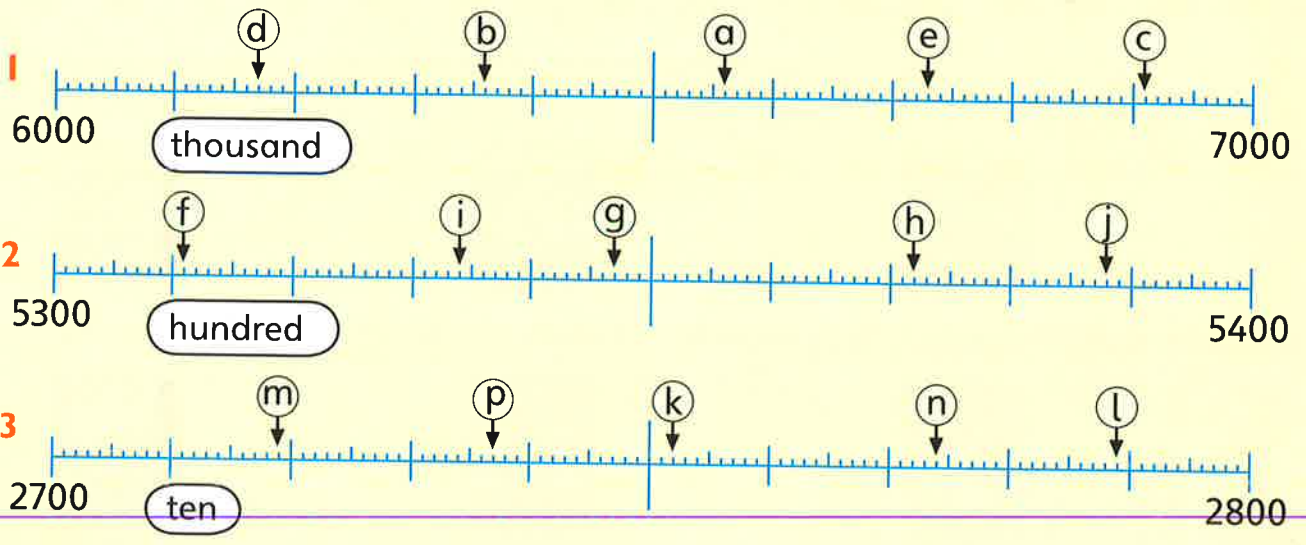
For each of questions 10–15, round both of the numbers to the nearest hundred, then add them. Do you get the same answer as if you added first, then rounded?



# Rounding

Write the position of each pointer, then round the number to the nearest:

1. a. 6560 → 7000



Round each price to the nearest  
a: thousand pounds b: hundred pounds and c: ten pounds.

4. a: £ 8 | 46 → £ 8000  
 b: £ 8 | 00  
 c: ...

4. £8146

5. £7236

6. £3974

7. £9148

8. £5158

9. £11762

10. £12349

11. £6695

12. £15685



Write a 4-digit number which gives the same rounded number when rounded to the nearest thousand, hundred and ten.



# Rounding

These are the attendances at some football matches.  
Round them to the nearest a: thousand and b: hundred.

1. 27 564    a: 28 000    b: 27 600

1 Rovers  
27 564



2 City  
18 546



3 Albion  
43 582



4 United  
13 712

5 Athletic  
64 789


6 Wanderers  
34 358



Find last Saturday's attendance figures at a football game.  
Round them to the nearest thousand and the nearest hundred.

7 At last Saturday's match there were 7652 adults and 2847 children. Find the total number of spectators. Round your answer to the nearest hundred. If each person bought a programme for £3, how much money was made?



8  A club sold their striker for a fee of £51 465 and paid £37 374 for a new goalkeeper. To the nearest thousand, approximately how much money did the club gain?

Write the a: smallest and b: largest possible number before it was rounded.

9 3700 rounded to the nearest hundred

10 75 000 rounded to the nearest thousand

11 4860 rounded to the nearest ten

12 469 000 rounded to the nearest thousand

13 58 700 rounded to the nearest hundred

14 47 390 rounded to the nearest ten



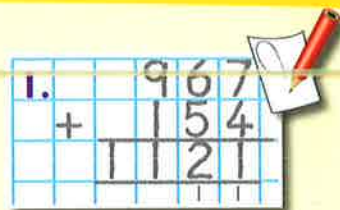
# Working backwards and forwards

Fill in the missing numbers.

$$\begin{array}{r} 967 \\ + 15\Box \\ \hline \Box\Box21 \\ \hline \quad \quad | \quad | \end{array}$$

$$\begin{array}{r} \Box246 \\ + 92\Box3 \\ \hline 13\Box2\Box \\ \hline \quad \quad | \end{array}$$

$$\begin{array}{r} 5769 \\ + \Box\Box84 \\ \hline 135\Box3 \\ \hline \quad \quad | \quad | \quad | \end{array}$$



Fill in the missing numbers.

$$\begin{array}{r} 4758 \\ + \Box586 \\ \hline 12\Box\Box\Box \\ \hline \quad \quad | \quad | \quad | \quad | \end{array}$$

$$\begin{array}{r} 6372 \\ + 7\Box96 \\ \hline \Box\Box2\Box\Box \\ \hline \quad \quad | \quad | \end{array}$$

$$\begin{array}{r} 8765 \\ + 94\Box\Box \\ \hline \Box\Box\Box40 \\ \hline \quad \quad | \quad | \quad | \end{array}$$

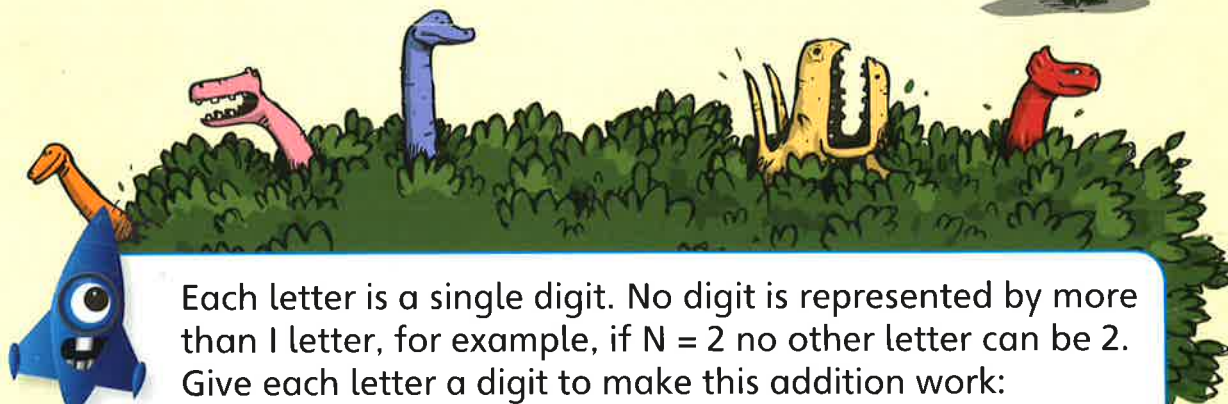
$$\begin{array}{r} 7853 \\ + 37\Box6 \\ \hline 1\Box\Box99 \\ \hline \quad \quad | \end{array}$$

$$\begin{array}{r} 6482 \\ + \Box\Box96 \\ \hline 122\Box\Box \\ \hline \quad \quad | \quad | \end{array}$$

$$\begin{array}{r} 5497 \\ + 86\Box5 \\ \hline \Box\Box12\Box \\ \hline \quad \quad | \quad | \quad | \end{array}$$



10 Now make up 3 more calculations for a friend to solve.



Each letter is a single digit. No digit is represented by more than 1 letter, for example, if N = 2 no other letter can be 2. Give each letter a digit to make this addition work:

$$\begin{array}{r} \text{RAIN} \\ + \text{SNOW} \\ \hline \text{SLEET} \end{array}$$



I can check answers to addition and subtraction calculations by using the inverse operation

# Adding and subtracting

Find the difference between the number of miles travelled by each car.

Hint: Use the nearest multiple of 10. You can choose whether to count back or count on.

1.	2	4	6	-	6	0	=	1	8	6	miles
	Adjust	+	1	=	1	8	7	miles			



246 miles    59 miles



427 miles    79 miles



154 miles    88 miles



285 miles    79 miles



274 miles    57 miles



164 miles    89 miles

How many centimetres must each snail crawl to reach the lettuce?

7.	2	4	7	-	4	0	=	2	0	7	cm
	Adjust	+	1	=	2	0	8	cm			



39 cm



67 cm



99 cm



128 cm



189 cm



247 cm

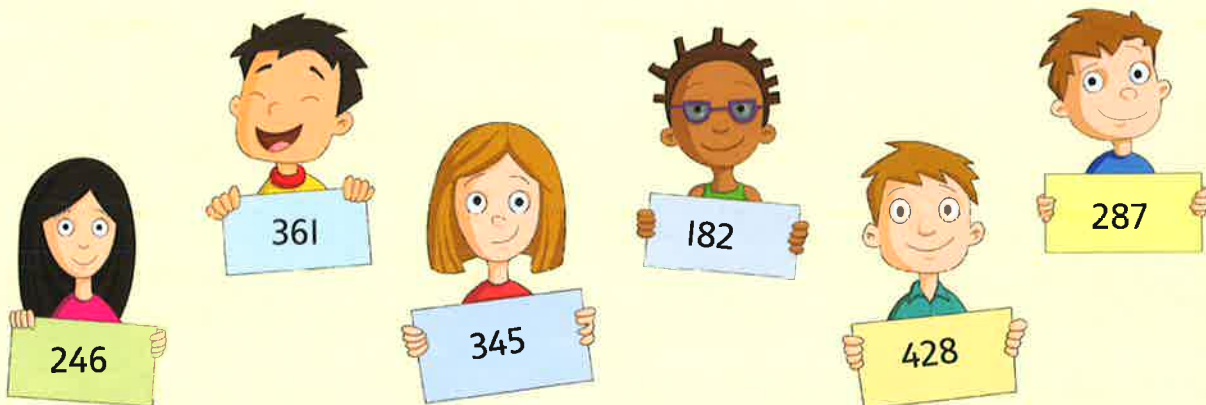


Work with a partner. Agree who will count back and who will count on. Try this subtraction:  $167 - 89$ . Reverse roles. Which is the best method for you? Try  $224 - 129$ .



# Counting on and back to calculate

1 Choose three cards to make six different totals close to 900.



2 Choose four cards to make three different totals between 1000 and 1200.

True or false?

3 When adding five numbers, if the units digits are all the same, the total ends in 5.

4 Three different numbers are added. The total is over 1800. All three numbers must be 3-digit numbers.

5 Adding four 3-digit numbers less than 500 cannot give a total over 2000.

6 It is possible to add another number to the sum of 373 and 737 so that the total has four identical digits.

7 The total of four 2-digit numbers, where all of the digits are odd, must be an odd number.



Add two palindromic 3-digit numbers, such as 242 and 353. Is the answer a palindrome? Try some more.



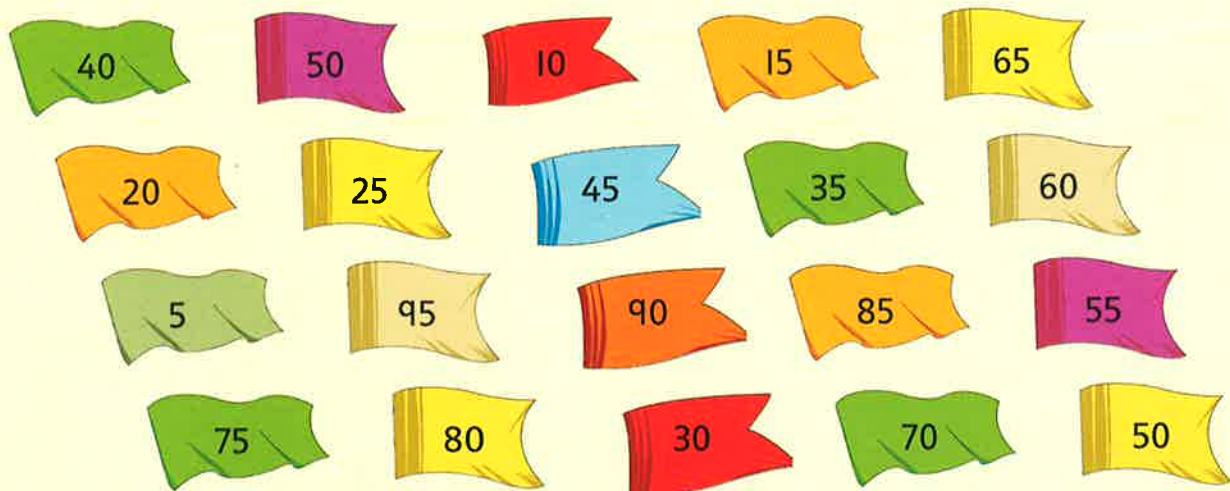
I can count on to the next 10, 100 or 1000 and can use this to solve calculations



# Adding

1 Find pairs of flags that make 100.  
Write the addition. Do this 10 times.

1.  $50 + 50 = 100$



How long until each person reaches the next multiple of 10 years?

2.  $65 + 5 = 70$   
5 Years

2



65 years old

3



18 years old

4



27 years old

5



43 years old

6



32 years old

7



87 years old

8



51 years old

9



44 years old



How many ways can you find of making £1 using 10p, 20p and 50p coins?



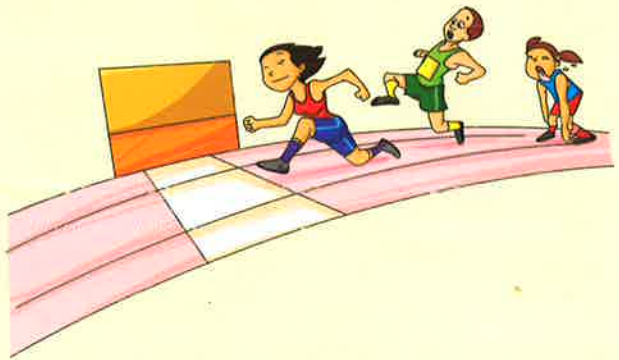
# Adding and subtracting

Each athlete has run part of a 1000 m race. How far is there left to run?

$$1. 350 + 650 = 1000 \text{ m}$$



- 1 350 m      2 450 m      3 650 m
- 4 850 m      5 750 m      6 420 m
- 7 680 m      8 730 m      9 230 m



Three multiples of 50 total 1000. What could they be? Can you find all the possibilities?

10 Taife and Joe share 1000 g of dog food. Taife has a big dog so she takes 660 g. How much does Joe have?



11 Ashley squeezes oranges into a litre jug. One litre is a thousand millilitres. He uses 10 small oranges to get 780 ml. How much more juice will he need to fill the jug?

12 Tanvi has saved £68. How much more must she save to have £100? Her sister has saved £54. How much more does she need?



Work out the number of pounds that must be added to each of these to make £1000: £362, £458, £671, £884. Can you find a quick way of doing this?



# Doubling and halving

Double these numbers by doubling the tens, doubling the units, then combining.

1.	2	3			
4	0	6	=	4	6

- 1  23
- 2  31
- 3  44
- 5  16
- 6  27
- 7  38
- 9  28
- 10  36
- 11  49

- 4  12
- 8  19
- 12  57



Halve these numbers by halving the tens, halving the units, then combining.

13.	4	8			
2	0	4	=	2	4

- 13  48
- 14  26
- 15  46
- 17  34
- 18  58
- 19  76
- 21  92
- 22  64
- 23  72

- 16  82
- 20  38
- 24  54



Write the cost of two of each item.

25.	2	×	£	3	2	=	£	6	4
-----	---	---	---	---	---	---	---	---	---

25

26

27

28

29

Write the cost of each item in a half-price sale.




Find the cost of five of each item by halving the cost of ten of each. How could you find the cost of 20 of one of the items?



Use doubling to complete these additions.

1. double	34 = 68
	35 + 34 = 69



- |                                   |                                   |                                   |
|-----------------------------------|-----------------------------------|-----------------------------------|
| <b>1</b> double 34 =<br>34 + 35 = | <b>2</b> double 42 =<br>42 + 41 = | <b>3</b> double 26 =<br>26 + 27 = |
| <b>4</b> double 18 =<br>18 + 19 = | <b>5</b> double 23 =<br>23 + 22 = | <b>6</b> double 45 =<br>45 + 44 = |
| <b>7</b> double 28<br>28 + 27 =   | <b>8</b> double 37 =<br>37 + 36 = | <b>9</b> double 46 =<br>46 + 47 = |

Write a near double for each of these numbers.

10. double	31 + 1
------------	--------



- |              |              |              |              |
|--------------|--------------|--------------|--------------|
| <b>10</b> 63 | <b>11</b> 31 | <b>12</b> 45 | <b>13</b> 29 |
| <b>14</b> 87 | <b>15</b> 53 | <b>16</b> 71 | <b>17</b> 95 |

Guess who I am:



**18** I am a number less than 20.  
When I am doubled the answer  
is 6 multiplied by itself.

**19** I am a number greater than 40.  
When I am halved the answer  
is double 12.

**20** I am a number less than 15.  
When I am doubled the  
answer is the seventh  
multiple of 4.

**21** I am a number greater than 50.  
When I am halved the answer is  
the number of days in March.

Invent some 'Guess who I am' problems.

# Using doubles and halves



There are 50 paperclips in a box.  
How many paperclips in:

1.	13	×	100	=	1300		
	13	×	50	=	650		



1 13 boxes



2 22 boxes



3 38 boxes



4 17 boxes



5 41 boxes



6 27 boxes



7 35 boxes



8 19 boxes



9 24 boxes?

There are 25 candles in a box.  
How many candles in:

10.	16	×	100	=	1600		
	16	×	50	=	800		
	16	×	25	=	400		



10 16 boxes



11 34 boxes



12 28 boxes



13 22 boxes



14 36 boxes



15 44 boxes



16 58 boxes



17 64 boxes



18 72 boxes?



Invent a method for multiplying by 150 using doubling and halving. Write some multiplications by 150 for your partner to answer.



Jamie

Kulpreet

Ling

Emma

Mark



Find the total scores for:

- 1 Jamie and Kulpreet
- 2 Ling and Emma
- 3 Emma and Mark
- 4 Ling and Kulpreet

1.				8	3	6
	+			3	4	2
				1	1	7
						8

- 5 Out of all the children, which pair has the largest score? What is it?
- 6 Out of all the children, which pair has the lowest score? What is it?

Find the totals.

$$\begin{array}{r} 4650 \\ + 3725 \\ \hline \end{array}$$

$$\begin{array}{r} 5671 \\ + 3157 \\ \hline \end{array}$$

$$\begin{array}{r} 3712 \\ + 2834 \\ \hline \end{array}$$

7.					4	6	5	0
	+				3	7	2	5
					8	3	7	5

$$10 \quad 6172 + 2519 =$$

$$11 \quad 4384 + 3575 =$$

$$12 \quad 3942 + 1436 =$$

$$13 \quad 6742 + 2637 =$$

$$14 \quad 4235 + 3417 =$$



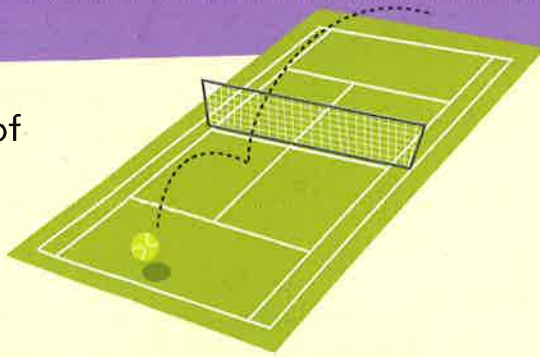
What digits can make this calculation work?

$$\begin{array}{r} \square 3 \square 3 \\ + 3 \square 3 \square \\ \hline 10000 \end{array}$$



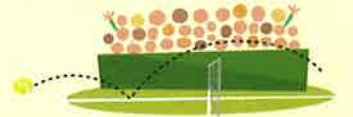
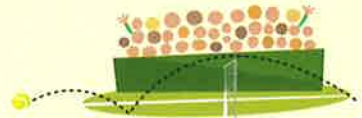
# Adding

Find the total number of people at each match. Write an estimate first.



1.	3	0	0	0
	3	5	7	8
	8	6	7	5
	1	2	2	5
	1	1	1	







- 1 Three thousand, five hundred and seventy-eight children and eight thousand, six hundred and seventy-five adults.
- 2 Six thousand, nine-hundred and ninety-five children and two hundred and eighteen adults.
- 3 Three thousand, four hundred and forty-three children and six thousand, three hundred and fifty-four adults.
- 4 Seven thousand, six hundred and sixty-eight children and eight thousand, nine hundred and eighty-five adults.



Arrange the cards 1–8 to make an addition of two 4-digit numbers. What is the largest odd total you can make? What is the smallest? What is the largest even total you can make? What is the smallest?

Copy and complete, then write your answer in words.



- 5  $4783 + 5878 =$      6  $6786 + 8595 =$      7  $3642 + 6272 =$  
- 8  $8872 + 3569 =$      9  $7535 + 8169 =$      10  $1368 + 9453 =$  



# Subtracting

How much further to go?

1.	6	1		
	3	7	2	
	-	1	6	8
	2	0	4	miles




**1** Journey 372 miles  
Done 168 miles



**2** Journey 683 miles  
Done 329 miles



**3** Journey 492 miles  
Done 227 miles

**4** Journey 871 miles  
Done 436 miles

**5** Journey 683 miles  
Done 325 miles

**6** Journey 792 miles  
Done 244 miles

**7** Journey 983 miles  
Done 826 miles

**8** Journey 674 miles  
Done 238 miles

**9** Journey 462 miles  
Done 219 miles

How far has the hot air balloon fallen?



**10** Was 816 m  
Now 542 m

**11**



Was 907 m  
Now 261 m

**12**



Was 828 m  
Now 453 m

**13**



Was 719 m  
Now 256 m



**14** Was 836 m  
Now 382 m

**15**



Was 948 m  
Now 295 m

**16**



Was 827 m  
Now 586 m

**17**



Was 639 m  
Now 265 m



What is the largest 3-digit number that can be added to two other 3-digit numbers to make 999?





# Adding

Complete these additions.

$$\begin{array}{r} 1 \quad 4683 \\ \quad 742 \\ \quad 3604 \\ + \quad 28 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \quad 3568 \\ \quad 47 \\ + \quad 362 \\ \hline \end{array}$$

1.	4	6	8	3
		7	4	2
	3	6	0	4
+			2	8
	9	0	5	7
	2	1	1	

3  $1462 + 556 + 98 + 1134 =$

4  $2673 + 843 + 62 + 359 =$

5  $6437 + 362 + 12 + 1794 =$

6  $38 + 691 + 3742 + 6438 =$

7 Choose four trips. Add the prices to find the total cost. Repeat 10 times.

Fly to Paris  
£87



Weekend in  
Monte Carlo  
£368

Las Vegas  
£2565



Sun & Surf  
Down Under  
£5677

Wildlife Galore  
in South Africa  
£1858

Icelandic cruise  
£4667

Tour  
America  
£8874



5-day break in  
Amsterdam  
£475

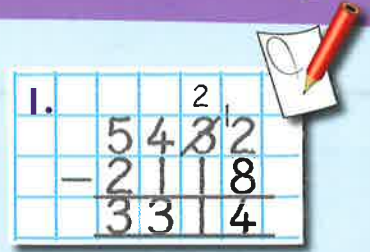


You have £5000. Which of these trips could you choose?



# Subtracting

Subtract the smaller from the larger number.



$5432 - 2118 =$

**2**  $4826 - 1452 =$

$6128 - 4029 =$

**4**  $7269 - 3542 =$

**5**  $7636 - 2172 =$

$6583 - 4128 =$

**7**  $5296 - 2734 =$

**8**  $4831 - 3614 =$

Work out the differences between the two distances. Then write your answer in words.

**9**  $3175 \text{ km} - 1432 \text{ km}$

**10**  $5647 \text{ km} - 2518 \text{ km}$

**11**  $4361 \text{ km} - 9628 \text{ km}$

**12**  $8496 \text{ km} - 3753 \text{ km}$

**13**  $3271 \text{ km} - 7632 \text{ km}$

**14**  $2219 \text{ km} - 9438 \text{ km}$

**15**  $5296 \text{ km} - 2534 \text{ km}$

**16**  $5272 \text{ km} - 8635 \text{ km}$

Arrange the digits 1–8 in this calculation:

$\square \square \square \square - \square \square \square \square =$

to give the largest possible answer.

# Subtracting

Write the difference between the two amounts.

1.		3		7	
	£	4	2	8	4
-	£		7	6	8
	£	3	5	1	6

1

£4284
-------

£768
------

2

£5506
-------

£1285
-------

3

£2816
-------

£4381
-------

4

£3706
-------

£1375
-------

5

£3527
-------

£1643
-------

6

£837
------

£7645
-------

7

£5463
-------

£976
------

8

£3697
-------

£7985
-------

9

£5728
-------

£6473
-------

10

£5342
-------

£683
------

11

£5835
-------

£2348
-------

12

£892
------

£6437
-------



Work with a partner. Choose two of the subtractions each. Check your partner's answers by adding the answer to the smaller number.

Copy and complete.

13

$$\begin{array}{r} 53146 \\ - 2817 \\ \hline \\ \hline \end{array}$$

14

$$\begin{array}{r} 3881 \\ - 1976 \\ \hline \\ \hline \end{array}$$

15

$$\begin{array}{r} 64378 \\ - 2769 \\ \hline \\ \hline \end{array}$$

16

$$\begin{array}{r} 5436 \\ - 1787 \\ \hline \\ \hline \end{array}$$

17

$$\begin{array}{r} 33265 \\ - 1678 \\ \hline \\ \hline \end{array}$$

18

$$\begin{array}{r} 6384 \\ - 2637 \\ \hline \\ \hline \end{array}$$



Write the difference between the mountain heights.

Mont Blanc  
4810 m

Eiger  
3974 m

Matterhorn  
4478 m

Weisshorn  
4505 m

Silberhorn  
3695 m

1 Mont Blanc and Eiger

2 Matterhorn and Weisshorn

3 Silberhorn and Matterhorn

4 Weisshorn and Mont Blanc

5 Eiger and Matterhorn

6 Mont Blanc and Silberhorn

7 Weisshorn and Silberhorn

8 Eiger and Weisshorn

9 Mont Blanc and Matterhorn

10 Silberhorn and Eiger



Use an atlas to work out the differences in height between Mount Everest and some of the other mountains in the Himalayas.

Copy and complete. Then check your answers with a calculator.

1  $46\,831 - 7\,994 =$

12  $5218 - 3\,961 =$

13  $7\,654 - 379 =$

4  $64\,382 - 5\,317 =$

15  $47\,932 - 8\,364 =$

16  $6\,431 - 3\,786 =$

7  $32\,465 - 6\,374 =$

18  $4\,261 - 1\,794 =$

19  $47\,653 - 24\,278 =$

20  $22\,643 - 1\,875 =$

21  $34\,652 - 26\,741 =$

22  $18\,567 - 9\,379 =$



# Multiplying

Complete these multiplications.

1.	20	3			
5				$(5 \times 20) + (5 \times 3)$	
				100	+ 15
	← 23 →				= 115

Hint: Multiply the nearest multiple of 10 first. Then choose whether to count on or count back to find your answer.

- 1  $23 \times 5 =$
- 2  $52 \times 7 =$
- 3  $99 \times 4 =$
- 4  $101 \times 6 =$
- 5  $51 \times 3 =$
- 6  $49 \times 8 =$

7 Jason scores 23 points in each match and he plays 9 matches in a season. How many points does he score?



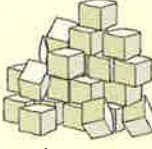
8 Parvati has 13 shots on target each game and she plays 8 games. How many shots on target does she have in all?



Oranges are packed in boxes of 49. Write the total number of oranges.

9   
4 boxes

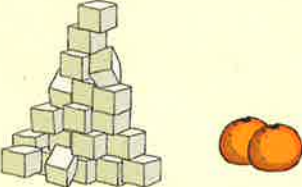
10   
6 boxes

11   
7 boxes

12   
2 boxes

13   
9 boxes

14   
8 boxes

15   
3 boxes

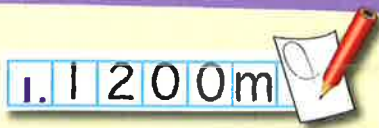
16   
5 boxes

17   
11 boxes



# Multiplying by multiples of 10

Children are having a sponsored remote control car challenge around their gardens. How far has each car gone after 40 laps?



Which method will you choose?

Grid:

	10	10	10
10	100	100	100
10	100	100	100
10	100	100	100
10	100	100	100
	1200		


or partition:  $4 \times 30 = 4 \times 10 \times 3 \times 10$   
 $= 4 \times 3 \times 10 \times 10$   
 $= 12 \times 100$   
 $= 1200$




1   
1 lap = 30 m

2   
1 lap = 40 m

3   
1 lap = 60 m

4   
1 lap = 70 m


5   
1 lap = 20 m

6   
1 lap = 90 m

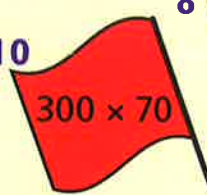


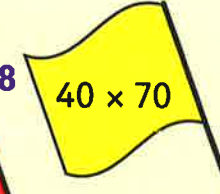
Children put long-life batteries in their cars. How far has each one travelled after 80 laps? What do you notice about your answers?

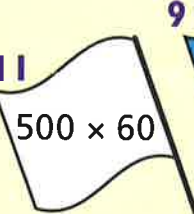
Copy and complete.

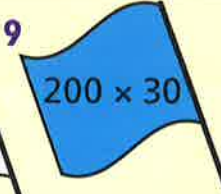
10.  $30 \times 50 = 1500$  


7   $30 \times 50$

10   $300 \times 70$

8   $40 \times 70$

11   $500 \times 60$

9   $200 \times 30$

12   $800 \times 50$



Your friend does not know how to solve  $800 \times 50$ . How would you teach them to do this?

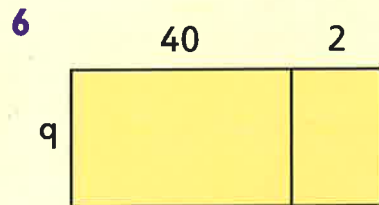
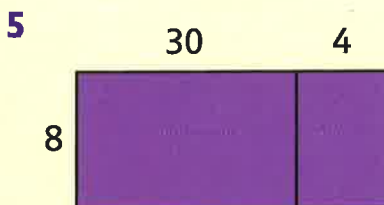
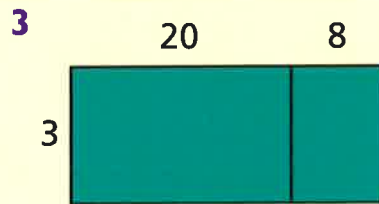
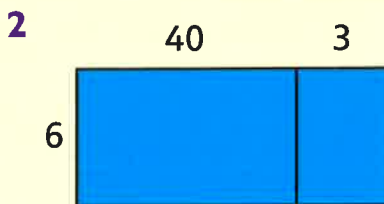
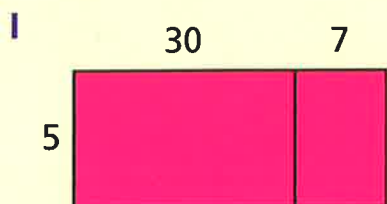


I can use my knowledge of table facts and multiplying by ten to work out new facts

# Multiplying

Copy and complete these multiplication grids. Write a multiplication for each one.

1.		30	7		150	
					+ 35	
	5	150	35		185	
$5 \times 37 = 185$						



Complete these multiplications. Estimate first, then draw a grid.



**7. estimate:**  $3 \times 30 = 90$

		20	7
3	60	21	
$3 \times 27 = 81$			

7  $3 \times 27 =$

8  $4 \times 43 =$

9  $5 \times 38 =$

10  $6 \times 74 =$

11  $7 \times 33 =$

12  $8 \times 29 =$



Can you find a multiplication like this that has an answer near to 236?

1 Copy and complete this multiplication table.

$\times$	40	200	60	700	90	300
5	200					
7						
3						
8						

Investigate what multiplications will have an answer of 2400.

Copy and complete.

2.	200	70	5			600
3	600	210	15			210
						15
						825
	$275 \times 3 = 825$					

2 200 70 5

3			
---	--	--	--

$275 \times 3 = \star$

5  $158 \times 6 = \star$

8  $264 \times 4 = \star$

11  $482 \times 6 = \star$

14  $659 \times 4 = \star$

3 300 40 2

4			
---	--	--	--

$342 \times 4 = \star$

6  $439 \times 5 = \star$

9  $397 \times 4 = \star$

12  $279 \times 5 = \star$

15  $354 \times 3 = \star$

4 400 20 3

5			
---	--	--	--

$423 \times 5 = \star$

7  $618 \times 2 = \star$

10  $561 \times 3 = \star$

13  $845 \times 2 = \star$

16  $415 \times 6 = \star$



# Multiplying

Are these answers correct? Check using the grid method.  
Write the correct answer.

1  $348 \times 6 = 2188$

2  $562 \times 3 = 1686$

3  $238 \times 7 = 1466$

4  $618 \times 5 = 3095$

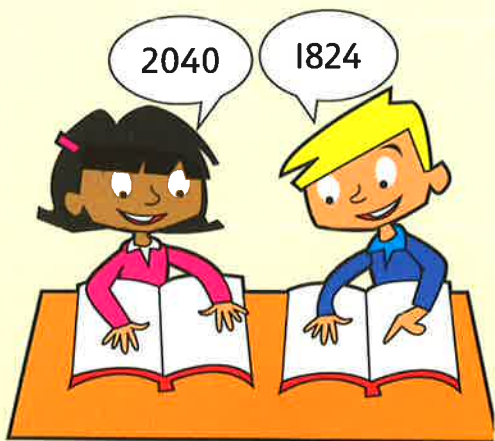
5  $279 \times 7 = 1956$

6  $328 \times 4 = 1312$

7  $597 \times 4 = 3628$

8  $592 \times 3 = 1786$

9  $283 \times 6 = 1698$



James and Padma are talking about their maths. James did  $340 \times 6$  and got the answer 1824. Padma got 2040. Who is correct and what mistake was made?

Now try these.

10  $209 \times 8 =$

11  $380 \times 7 =$

12  $406 \times 7 =$

13  $705 \times 8 =$

14  $470 \times 3 =$

15  $608 \times 4 =$

16  $504 \times 9 =$

17  $307 \times 4 =$

18  $790 \times 8 =$

- 19 Paving slabs are 108 cm wide. Nine slabs are laid in a row. How wide will this be? The slabs are meant to fill a space 10 m wide. Ten metres is the same as 1000 centimetres. How much space is left to fill?





violin  
£86



horn  
£28



drum  
£32



trumpet  
£47

flute  
£43

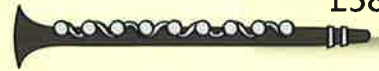
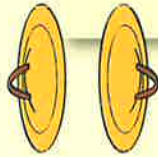
cymbals  
£24

cello  
£63

clarinet  
£58



saxophone  
£74



Find the cost of:

- |                    |                |
|--------------------|----------------|
| 1 six violins      | 2 three drums  |
| 3 four trumpets    | 4 two flutes   |
| 5 six clarinets    | 6 three cellos |
| 7 seven saxophones | 8 four horns   |
| 9 two cymbals      |                |

1.		86		
	x	6		
		480	6 × 80	
		36	6 × 6	
	£	516		



Use these cards:

3

4

5

6

Arrange three of them like this:

$$\square \square \times \square$$

Explore the largest and smallest possible answers.

Do the same with these cards:

6

7

8

9

# Multiplying

Copy and complete these multiplications. Write an estimate first.

$$\begin{array}{r} 900 \\ 314 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{l} 3 \times 300 \\ 3 \times 10 \\ 3 \times 4 \end{array}$$

$$\begin{array}{r} 800 \\ 186 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{l} 4 \times 100 \\ 4 \times 80 \\ 4 \times 6 \end{array}$$

3  $786 \times 2 =$

4  $274 \times 5 =$

5  $327 \times 6 =$

6  $643 \times 6 =$

7  $512 \times 3 =$

8  $487 \times 4 =$

9  $356 \times 2 =$

10  $274 \times 4 =$

11  $563 \times 2 =$

12  $623 \times 2 =$

13  $335 \times 6 =$

14  $422 \times 3 =$

Find the cost of these holidays for a: 4 people, b: 5 people, c: 7 people.



£346 each



£543 each



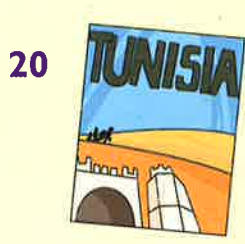
£236 each



£318 each



£274 each



£437 each



Put digits in the boxes to make the calculation correct. How many different ways can you find?

$$\square \square \square \times \square = 648$$



Copy and complete these multiplications. Write an estimate first.

$$\begin{array}{r} 1 \quad \textcircled{1500} \\ 528 \\ \times 3 \\ \hline 1500 \\ 60 \\ 24 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 2 \quad \textcircled{2000} \\ 464 \\ \times 4 \\ \hline 1600 \\ 240 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 3 \quad \textcircled{4200} \\ 732 \\ \times 6 \\ \hline 4200 \\ \hline \\ \hline \end{array}$$

Now try these.

$$\begin{array}{r} 4 \quad 326 \\ \times 4 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 5 \quad 458 \\ \times 3 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 6 \quad 724 \\ \times 6 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 7 \quad 562 \\ \times 4 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 8 \quad 395 \\ \times 5 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 9 \quad 643 \\ \times 4 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 10 \quad 527 \\ \times 7 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 11 \quad 741 \\ \times 3 \\ \hline \\ \hline \end{array}$$

Doughnuts are sold in boxes of four. Calculate how many doughnuts were sold each week.

12 Week 1  
426 boxes

13 Week 2  
148 boxes



14 Week 3  
276 boxes

15 Week 4  
325 boxes



16 Week 5  
542 boxes

17 Week 6  
441 boxes



If a doughnut costs 5p to make, and a box of four doughnuts is sold for 45p, investigate how much profit the company makes each week.

# Multiplying

Complete the multiplications.  
Use the shorter method if you can.

1.	2	7	6				
x		3					
6	0	0		3	x	2	0
2	1	0		3	x	7	0
		1	8	3	x	6	
8	2	8					

1.	2	7	6
x		3	
8	2	8	
2	1		

$$\begin{array}{r} 1 \quad 276 \\ \times \quad 3 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \quad 436 \\ \times \quad 4 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \quad 147 \\ \times \quad 6 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \quad 382 \\ \times \quad 6 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \quad 247 \\ \times \quad 5 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \quad 523 \\ \times \quad 3 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \quad 193 \\ \times \quad 6 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \quad 318 \\ \times \quad 7 \\ \hline \end{array}$$



- 9 What is the difference between the cost of 3 season tickets at £425 each for City and 4 season tickets at £316 each for Rovers?



- 10 Jason has won a prize. He can choose between £178 each month for 6 months or £235 each month for 4 months. Which should he choose to get the most money?



Use the digit cards

3

4

5

6

Make a 3-digit number and a 1-digit number, and multiply them together.

What is the largest answer?

What is the smallest answer?

How many different answers can you make between 2000 and 3000?

Work out how much the coach company will receive on each trip.



1.	30	2			
20	600	40		640	
				+ 224	
7	210	14		£864	



**1** Mystery tour £32



27 people

**2** Sea and sand £42



18 people

**3** Lakes and mountains £56



33 people

**4** Famous gardens £33



32 people

**5** City of London £63



41 people

**6** Ancient castles £29



24 people

**7** National parks £28



38 people

**8** Birdwatching £42



26 people

**9** Theme park £34



54 people

True or false?

**10**  $38 \times 23 = 23 \times 38$

**11**  $41 \times 25 = (41 \times 20) + (41 \times 5)$

**12**  $26 \times 30 < 36 \times 20$

**13**  $36 \times 27 > 37 \times 26$



# Multiplying

Calculate the total cost of these flights.

1.	200	30	8					
	20	4000	600	160		4	7	60
					+		9	52
	4	800	120	32		£	5	712



**1** Vienna tickets £238 party of 24

**2** Barcelona tickets £149 party of 28



**3** Paris tickets £117 party of 23

**4** Nice tickets £137 party of 18

**5** Berlin tickets £246 party of 25

**6** Krakow tickets £324 party of 19



Investigate the total cost for your whole class and your teacher to go on each flight.



Choose how to solve the calculations.

- 7**  $427 \times 21 =$
- 8**  $316 \times 32 =$
- 9**  $235 \times 43 =$
- 10**  $547 \times 54 =$
- 11**  $189 \times 26 =$
- 12**  $237 \times 33 =$
- 13**  $347 \times 48 =$
- 14**  $526 \times 29 =$
- 15**  $637 \times 36 =$
- 16**  $483 \times 23 =$
- 17**  $615 \times 44 =$
- 18**  $384 \times 21 =$





Copy and complete these multiplications.

**1**  $274 \times 23$

	200	70	4	
20	4000	1400	80	5480
3	600			+ ...
				_____

**2**  $156 \times 32$

	100	50	6	
30	3000	1500		...
2				+ ...
				_____

**3**

	300	20	6
10	3000		
8			

**4**

	400	30	8
20			
6			

**5**

	200	60	7
30			
4			

Write the total miles each aeroplane flies.

**6**

London to Paris  
213 miles  
14 trips



**7**

Paris to Madrid  
652 miles  
23 trips



**8**

Vienna to Dublin  
821 miles  
32 trips



**9**

Rome to Berlin  
734 miles  
26 trips



**10**

Milan to Amsterdam  
513 miles  
19 trips



**11**

Barcelona to Zurich  
525 miles  
24 trips





Investigate approximately how many trips each aeroplane needs to make to cover 5000 miles.





# Multiplying

Write an estimate by rounding each number to the nearest 10.

$$1.20 \times 30 = 600$$



1  $23 \times 31$

2  $42 \times 29$

3  $38 \times 22$

4  $47 \times 18$

Copy and complete. Write your estimate first.

5

$$\begin{array}{r} 43 \\ \times 18 \\ \hline \end{array}$$
 $43 \times 8$   
 $43 \times 10$   
 \_\_\_\_\_  
 \_\_\_\_\_

6

$$\begin{array}{r} 37 \\ \times 23 \\ \hline \end{array}$$
 $37 \times 3$   
 $37 \times 20$   
 \_\_\_\_\_  
 \_\_\_\_\_

7

$$\begin{array}{r} 56 \\ \times 33 \\ \hline \end{array}$$
 $56 \times 6$   
 $56 \times 30$   
 \_\_\_\_\_  
 \_\_\_\_\_

8 
$$\begin{array}{r} 53 \\ \times 16 \\ \hline \\ \hline \end{array}$$

9 
$$\begin{array}{r} 47 \\ \times 22 \\ \hline \\ \hline \end{array}$$

10 
$$\begin{array}{r} 39 \\ \times 33 \\ \hline \\ \hline \end{array}$$

11 
$$\begin{array}{r} 52 \\ \times 19 \\ \hline \\ \hline \end{array}$$

- 12 Amy has 1000 sweets. She gives 24 sweets to each child in her class. There are 31 children. How many sweets are left?



- 13 Janine is 34 years old. How many more weeks until she has lived for 2000 weeks?



- 14 Craig has 48 pieces of pipe, each 36 cm long. He joins them together. How long is the pipeline? There are 100 cm in a metre. How much longer to reach 20 m?



Write your own word problem using multiplication of 2-digit numbers.

Complete these multiplications. Estimate first!

1.	1	5	0	0	
		4	6		
	x	2	7		
		1	2	4	2

1  $\begin{array}{r} 46 \\ \times 27 \\ \hline \end{array}$

2  $\begin{array}{r} 28 \\ \times 34 \\ \hline \end{array}$

3  $\begin{array}{r} 56 \\ \times 29 \\ \hline \end{array}$

4  $\begin{array}{r} 52 \\ \times 43 \\ \hline \end{array}$

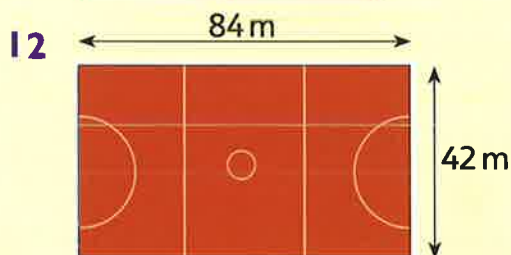
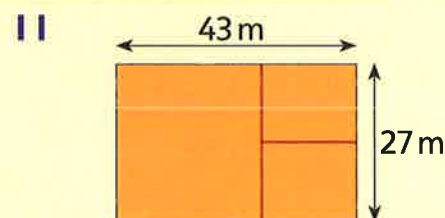
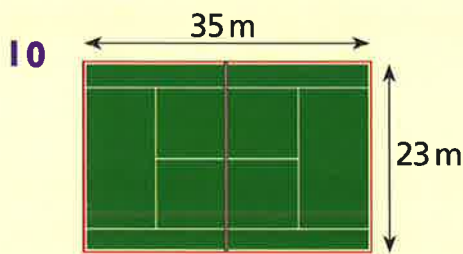
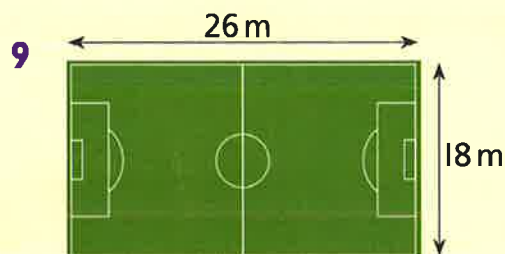
5  $\begin{array}{r} 28 \\ \times 37 \\ \hline \end{array}$

6  $\begin{array}{r} 53 \\ \times 17 \\ \hline \end{array}$

7  $\begin{array}{r} 64 \\ \times 27 \\ \hline \end{array}$

8  $\begin{array}{r} 63 \\ \times 32 \\ \hline \end{array}$

Write the area of these courts.



Use these place-value cards to make two 2-digit numbers.

20

30

40

3

4

7

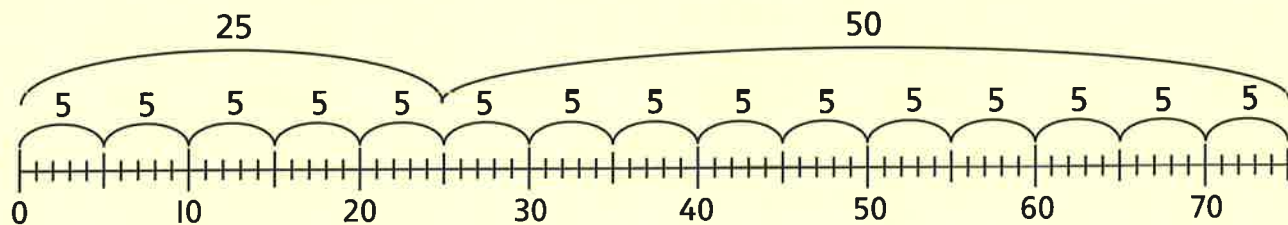
Multiply them together.

Can you make a product over 2000?

Can you make a product that is a multiple of 3?

# Dividing using 10s

Do the divisions by chunking in 10s. You can use a number line to help you.



1  $75 \div 5 =$  75

$$\begin{array}{r} - 50 \\ \hline 25 \end{array} \quad (10) \times 5$$

$$\begin{array}{r} - 25 \\ \hline 0 \end{array} \quad (5) \times 5$$

remainder 0

$$75 \div 5 = 15 \text{ r } 0$$

2  $49 \div 3 =$  49

$$\begin{array}{r} - 30 \\ \hline 19 \end{array} \quad (10) \times 3$$

$$\begin{array}{r} - 18 \\ \hline 1 \end{array} \quad (6) \times 3$$

remainder 1

$$49 \div 3 = 16 \text{ r } 1$$

3  $52 \div 4 =$

4  $42 \div 3 =$

5  $56 \div 4 =$

6  $85 \div 5 =$

7  $42 \div 2 =$

8  $39 \div 3 =$

9  $96 \div 3 =$

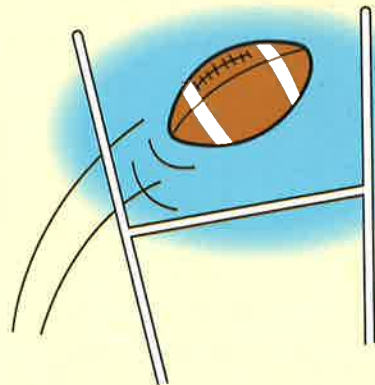
10  $79 \div 4 =$



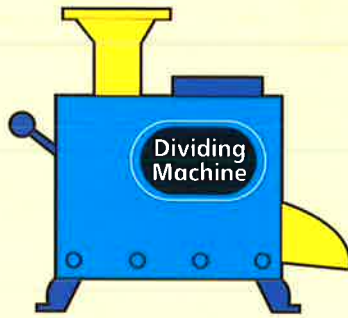
Lucas uses doubling and halving to work out mentally that  $64 \div 4 = 16$ . Explain how he might have done this.

- 11 Jan shares 72 football cards between 6 friends. How many cards has he given to each friend?

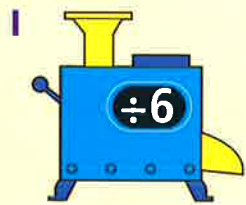
- 12 Miss Damico is taking her class to a rugby match. She has collected £84 from the class. Tickets cost £6 each. How many children are going?



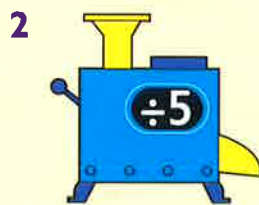
Do these divisions.



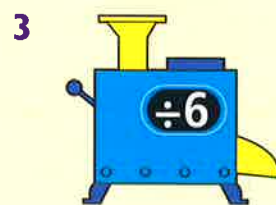
1.	96	÷	6		
	9	6			
	-	6	0		10 × 6
		3	6		
	-	3	6		6 × 6
			0		
	96	÷	6	=	16



$$96 \div 6$$



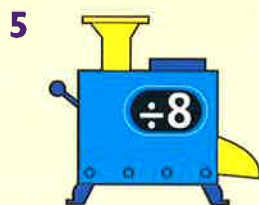
$$85 \div 5$$



$$78 \div 6$$



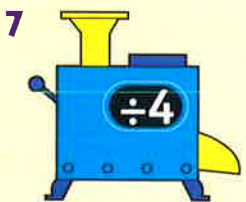
$$84 \div 7$$



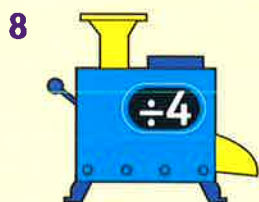
$$96 \div 8$$



$$54 \div 3$$



$$76 \div 4$$



$$92 \div 4$$



$$64 \div 4$$



Which numbers between 80 and 100 can be divided exactly by 8? What other numbers can they be divided by?

Find the answers.

10  $95 \div 5 =$

11  $57 \div 3 =$

12  $69 \div 3 =$

13  $75 \div 3 =$

14  $56 \div 2 =$

15  $92 \div 4 =$



I can divide a big number by taking away chunks

# Remainders

Do these divisions.



1.	75	÷	4				
	75						
	-60			(15) × 4			
	15						
	-12			(3) × 4			
	3						
	75	÷	4	=	18	r	3

- 1 75 ÷ 4 =
- 2 39 ÷ 2 =
- 3 47 ÷ 3 =
- 4 58 ÷ 5 =
- 5 97 ÷ 6 =
- 6 54 ÷ 5 =
- 7 37 ÷ 7 =
- 8 67 ÷ 3 =
- 9 74 ÷ 3 =

10 Johan is planting tulips in 12 rows. He has 98 tulips. How many are in each row?



- 11 87 ÷ 5 =
- 12 55 ÷ 3 =
- 13 79 ÷ 4 =
- 14 73 ÷ 3 =
- 15 58 ÷ 8 =
- 16 86 ÷ 4 =



'Divisible by' means 'divides exactly with no remainder'. Investigate and complete these statements.

- \* A number is divisible by 2 when the number is even.
- \* A number is divisible by 5 when \_\_\_\_.
- \* A number is divisible by 10 when \_\_\_\_.
- \* A number is divisible by 3 when \_\_\_\_.
- \* A number is divisible by 9 when \_\_\_\_.



Copy and complete these divisions.

1

$$\begin{array}{r} 4 \overline{) 48} \\ \underline{\quad} \\ \underline{\quad} \end{array}$$

\_\_\_\_\_  $10 \times 4$   
 \_\_\_\_\_  $2 \times 4$

1.

	1	2		
4	4	8		
	4	0	10	$\times 4$
		8	2	$\times 4$
		0		

2

$$\begin{array}{r} 5 \overline{) 85} \\ \underline{\quad} \\ \underline{\quad} \end{array}$$

$\times 5$   
 \_\_\_\_\_  $\times 5$

3

$$\begin{array}{r} 3 \overline{) 51} \\ \underline{\quad} \\ \underline{\quad} \end{array}$$

$\times 3$   
 \_\_\_\_\_  $\times 3$

4

$$\begin{array}{r} 8 \overline{) 96} \\ \underline{\quad} \\ \underline{\quad} \end{array}$$

$\times 8$   
 \_\_\_\_\_  $\times 8$

Each freezer is packed with ready meals.  
 Cara needs to eat 3 meals a day.  
 For how many days could Cara survive?



5.

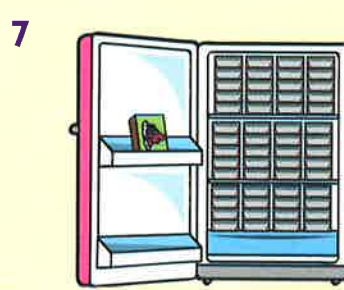
	1	6	days	
3	4	8		
	3	0	10	$\times 3$
		18	6	$\times 3$
		0		



48 ready meals



54 ready meals



57 ready meals



For each freezer, how many days could Big Colin survive eating 4 meals a day?





Kirsty thinks it will take her 4 days to read a book with 33 pages if she reads 8 pages each day. Hannah thinks it will take 5 days. Who is right? Explain your answer.

How many days will it take to finish each book?

1



72 pages  
4 pages a day

2



51 pages  
3 pages a day

1.	18		
4	72		
	40	(10) × 4	
	32	(8) × 4	
	0		
	18	days	

3



84 pages  
6 pages a day

4



98 pages  
4 pages a day

5



85 pages  
3 pages a day

- 6 The people in questions 1 to 4 all agree to read 8 pages a day. How long will each person take over their book? Can you find a quick way to work out how long Person 1 will take? And Person 4?





Copy and complete.

1

$$\begin{array}{r} 34 \text{ r} \\ 4 \overline{) 138} \\ \underline{120} \quad (30) \times 4 \\ 18 \\ \underline{\quad} \quad \dots \times 4 \end{array}$$

2

$$\begin{array}{r} \text{r} \\ 5 \overline{) 196} \\ \underline{150} \quad (30) \times 5 \\ \quad \quad \dots \times 5 \end{array}$$

3

$$\begin{array}{r} \text{r} \\ 5 \overline{) 223} \\ \underline{\quad} \quad (40) \times 5 \\ \quad \quad \dots \times 5 \end{array}$$

4  $6 \overline{) 191}$

5  $4 \overline{) 173}$

6  $3 \overline{) 221}$

7  $5 \overline{) 316}$

8  $4 \overline{) 190}$

9  $6 \overline{) 487}$

10  $4 \overline{) 363}$

11  $3 \overline{) 284}$

12  $5 \overline{) 367}$



Write how many weeks it takes to save:

13 £165 at £3 a week



14 £233 at £4 a week



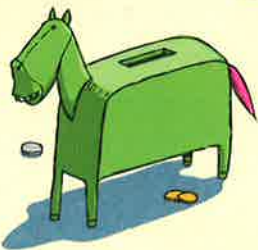
15 £191 at £7 a week



16 £346 at £5 a week



17 £213 at £6 a week



18 £471 at £8 a week



Investigate how many weeks it takes to save £500 at each different rate.



# Dividing



Crackers are packed in boxes. Find how many boxes. Write an estimate first.

1 557 crackers



boxes of 4

2 613 crackers



boxes of 5

3 513 crackers



boxes of 3

4 728 crackers



boxes of 6

6 922 crackers  
boxes of 6

7 742 crackers  
boxes of 3

5 873 crackers



boxes of 7

8 937 crackers  
boxes of 7

9 925 crackers  
boxes of 7

10 496 crackers  
boxes of 3

11 870 crackers  
boxes of 3



One eighth of all crackers don't make a bang. How many of the total number of crackers are faulty?

Complete these divisions. Estimate first.

12  $4 \overline{)913}$

13  $7 \overline{)854}$

14  $3 \overline{)726}$

15  $5 \overline{)681}$

16  $2 \overline{)739}$

17  $6 \overline{)904}$

18  $3 \overline{)858}$

19  $4 \overline{)703}$

20  $2 \overline{)937}$

1. 
$$\begin{array}{r} 140 \\ 4 \overline{)557} \end{array} \begin{array}{l} r 1 \\ 400 \\ 157 \\ 120 \\ 37 \\ 36 \\ 1 \end{array}$$

$100 \times 4$

$30 \times 4$

$9 \times 4$

12. 
$$\begin{array}{r} 200 \\ 4 \overline{)913} \end{array} \begin{array}{l} r 1 \\ 800 \\ 113 \\ 80 \\ 33 \\ 32 \\ 1 \end{array}$$

$200 \times 4$

$20 \times 4$

$8 \times 4$



Copy and complete these divisions.



1 
$$\begin{array}{r} 3 \overline{)428} \\ \underline{300} \\ 128 \\ \underline{120} \\ 8 \\ \underline{\quad} \end{array}$$

- (100) × 3
- (40) × 3
- (2) × 3

2 
$$\begin{array}{r} 4 \overline{)573} \\ \underline{400} \\ 173 \\ \underline{\quad} \end{array}$$

- (100) × 4
- (40) × 4

3 
$$\begin{array}{r} 5 \overline{)826} \\ \underline{500} \\ 326 \\ \underline{\quad} \end{array}$$

- (100) × 5

4 
$$\begin{array}{r} 4 \overline{)464} \\ \underline{\quad} \\ \quad \end{array}$$

5 
$$\begin{array}{r} 5 \overline{)578} \\ \underline{\quad} \\ \quad \end{array}$$

6 
$$\begin{array}{r} 3 \overline{)369} \\ \underline{\quad} \\ \quad \end{array}$$

7 
$$\begin{array}{r} 5 \overline{)106} \\ \underline{\quad} \\ \quad \end{array}$$

How many newspapers are there in each delivery?




8   
432 papers  
3 deliveries

9   
517 papers  
4 deliveries

10   
643 papers  
5 deliveries

11   
974 papers  
5 deliveries

12   
588 papers  
3 deliveries

13   
724 papers  
4 deliveries

14   
537 papers  
3 deliveries

15   
821 papers  
5 deliveries

16   
627 papers  
4 deliveries



A newsagent has four paper girls and 636 papers to deliver. If one paper girl is ill, how many extra papers does each one deliver?



Copy and complete using remainders.

1  $489 \div 20 =$

2  $574 \div 30 =$

3  $957 \div 50 =$

4  $849 \div 70 =$

5  $508 \div 20 =$

6  $714 \div 30 =$

7  $438 \div 50 =$

8  $258 \div 70 =$

9  $645 \div 40 =$



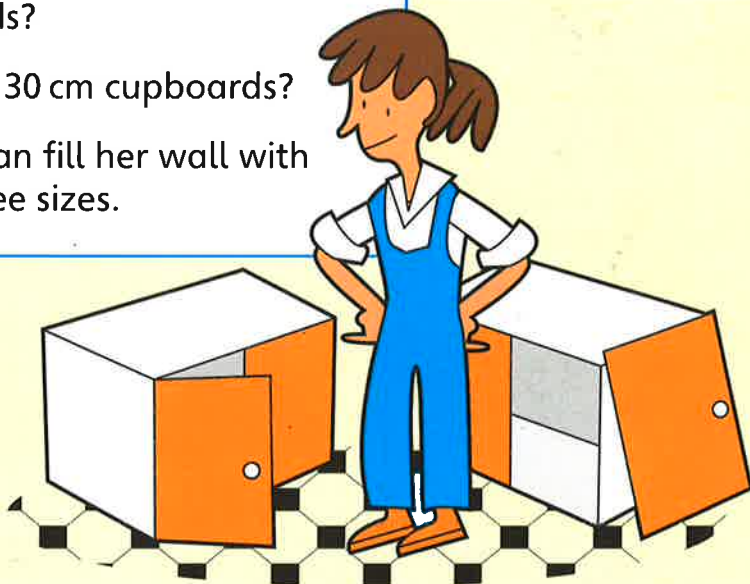
Hilary is planning a new kitchen. Her wall is 579 cm wide. In the shop, cupboards are 60 cm, 40 cm or 30 cm wide.

How many cupboards can she have, and how much space would be left, if she buys only 60 cm cupboards?

How many cupboards can she have, and how much space would be left, if she buys only 40 cm cupboards?

And if she buys only 30 cm cupboards?

Suggest a way she can fill her wall with cupboards of all three sizes.



10  $396 \div 40 =$

11  $904 \div 80 =$

12  $857 \div 30 =$

13  $478 \div 80 =$

14  $709 \div 40 =$

15  $1009 \div 20 =$





Copy and complete using remainders.

1.				28	r7
	30	84	7		

1  $30 \overline{)847}$

2  $40 \overline{)903}$

3  $30 \overline{)890}$

4  $912 \div 30 =$

5  $40 \overline{)607}$

6  $350 \div 60 =$

7  $70 \overline{)904}$

8  $70 \overline{)935}$

9  $893 \div 20 =$

10  $20 \overline{)289}$

11  $30 \overline{)752}$

12  $20 \overline{)989}$

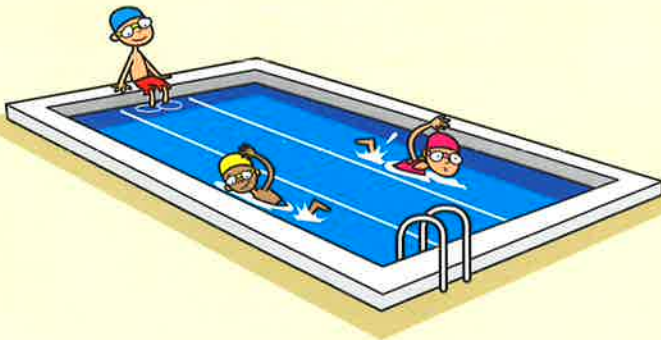


What digits could go in the boxes below?

Hint: think about how multiplication is connected to division.

$$\begin{array}{r} \square 0 \overline{) \square \square \square} \\ \quad \quad \quad 4 \quad 9 \quad r4 \end{array}$$

- 13 A lorry is 20 m long. How many similar lorries could fit on a street that is 584 m long?



- 14 Stuart is going to swim a mile. The swimming pool is 50 m long. One mile is about 1609 m. How many lengths will Stuart need to swim?



# Dividing

Copy and complete.

1  $\underline{2} \overline{)33}$

2  $41 \div 2 =$

3  $\underline{2} \overline{)57}$

4  $47 \div 3 =$

5  $\underline{5} \overline{)69}$

6  $71 \div 6 =$

7  $\underline{8} \overline{)94}$

8  $88 \div 6 =$

9  $\underline{8} \overline{)93}$

10  $97 \div 9 =$

11  $\underline{7} \overline{)94}$

12  $97 \div 6 =$

Selma keeps hens. She puts eggs in boxes of 6.  
How many boxes can she fill each day?



13 Sunday 73 eggs

14 Monday 79 eggs

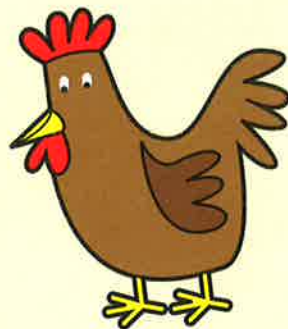
15 Tuesday 65 eggs

16 Wednesday 70 eggs

17 Thursday 74 eggs

18 Friday 71 eggs


19 Snow White won £75 worth of book tokens. She shared them equally among the seven dwarves and kept what was left for herself. How much did each get?



Louise has saved £122 for her holiday. She had £8 in her bank to start with and has saved £6 every week. How many weeks has she been saving?



Write an estimate for the cost of each call.

$$1.80\text{p} \div 4 = 20\text{p}$$


1 83p for  
4 calls



2 67p for  
3 calls



3 97p for  
5 calls



4 72p for  
6 calls



5 91p for  
4 calls



6 93p for  
7 calls



7 107p for  
5 calls



8 125p for  
6 calls



9 157p for  
8 calls




Write some divisions that will have an estimated answer of 20.

Copy and complete.

10  $63 \div 4 =$

11  $55 \div 3 =$

12  $87 \div 5 =$

13  $75 \div 4 =$

14  $55 \div 4 =$

15  $91 \div 6 =$

16  $96 \div 8 =$

17  $59 \div 3 =$

18  $66 \div 5 =$



# Dividing



Write how long it takes to finish reading these books.

1.		25	r 2		25	r 2
	5	12	7		1	27
			or		100	
					27	
					25	
					2	

rounds to 26 days

1 127 pages



5 pages a day

2 197 pages



4 pages a day

3 188 pages



3 pages a day

4 113 pages



6 pages a day

5 154 pages



9 pages a day

6 173 pages  
7 pages a day

7 129 pages  
5 pages a day

8 185 pages  
8 pages a day

9 203 pages  
6 pages a day

10 187 pages  
4 pages a day

11 206 pages  
8 pages a day



Find some long books. Work out how long it will take to read them at 4 pages per day.

Complete these divisions.

12  $177 \div 3 =$

13  $113 \div 4 =$

14  $123 \div 5 =$

15  $147 \div 6 =$

16  $183 \div 7 =$

17  $107 \div 4 =$

18  $121 \div 5 =$

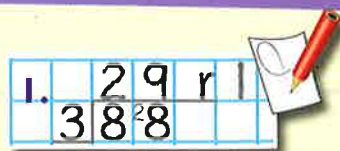
19  $203 \div 8 =$

20  $164 \div 3 =$

21  $139 \div 6 =$



Complete these divisions using sharing.



1  $88 \div 3 =$



2  $104 \div 6 =$

3  $167 \div 7 =$

4  $5 \overline{)183}$



5  $8 \overline{)241}$

6  $4 \overline{)175}$

7  $119 \div 5 =$

8  $7 \overline{)213}$

9  $204 \div 9 =$

10  $143 \div 8 =$

11  $163 \div 9 =$

12  $372 \div 7 =$



The answer to a division is 23 r 2.

If the number you divide by is a 1-digit number, what could the division be?

- 13 A taxi can take 4 passengers. How many taxis are needed for 71 children?



- 14 A number divided by 6 gives an answer of 5. What is the number?



- 15 Anna has 143 photos. An album holds 28 photos. How many albums does she need?



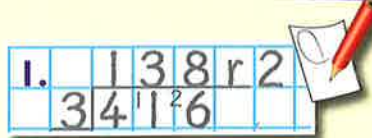
- 16 The CD rack can fit 7 CDs in each section. Shami has 165 CDs. How many sections will she fill?





# Dividing

Copy and complete using sharing.



1  $3 \overline{)416}$       2  $5 \overline{)627}$       3  $4 \overline{)739}$       4  $726 \div 3 =$

5  $943 \div 4 =$       6  $827 \div 3 =$       7  $623 \div 5 =$       8  $4 \overline{)862}$

If there were the same number of visits to these websites each day, what would the average be?

9

Mon	131
Tues	87
Weds	226
Thurs	148

10

Wed	347
Thurs	228
Fri	373

11

Sat	263
Sun	147
Mon	95
Tues	182
Wed	88

12

Sat	263
Sun	203
Mon	349
Tues	209

13

Tues	228
Wed	94
Thurs	109
Fri	156
Sat	172
Sun	213

14

Thurs	147
Fri	240
Sat	174

15

Mon	423
Tues	327
Wed	99

16

Fri	89
Sat	124
Sun	173
Mon	96
Tues	248

17

Mon	133
Tues	147
Wed	109
Thurs	94
Fri	135
Sat	126



Investigate how many visits each website could expect in the month of June.



I can use sharing to solve a division problem and make sure my answer is sensible

# How do we solve it?

- 1 Chang had 25p pocket money. Her dad doubled it. She spent 10p on a lolly. Her uncle doubled what she had left. How much does she have now?



- 2 Jane has saved £282 and Afram has saved £378. Find the total amount saved. How much more does Afram have than Jane?



- 3 Sean had collected 121 football cards. He gave Jason 68. How many did he have left?



- 4 The train travelled 328 miles on its journey. The last 162 miles were without heating! For how many miles was the heating on?



- 5 Ian runs 460 m in his first race and 280 m in his second race. How much longer was the first race and how far did he run in total?



A plane flies 3258 miles to London and 2469 miles to Athens. How far does it fly in total? What is the difference between the two distances?



# How do we solve it?

- 1 A rucksack weighs 350 g. Jamal adds a jacket weighing 280 g and boots weighing 490 g. What is the total weight?



- 2 Sarita weighed out 320 g of butter. When she turned her back, the cat ate 178 g. How much was left?



- 3 Ling had a satin ribbon that was 226 cm long. She cut off 152 cm. What length did she have left? How much less than half is that?

- 4 Tony had worked 328 days in 2009 and 287 days in 2010. How many days had he worked in all?



- 5 Tom the builder bought 5000 staples to fix the tiles on the roof. He used 4892. How many did he have left?



Anjilee has saved £360 towards a holiday costing £600. She thinks she can save £20 a week from now on. How long will it take her before she has enough money to pay for the holiday?



- 1 At a concert there were 546 women and 484 men. How many people in all attended? If 128 people came after the interval, how many were there then?



- 2 Nick climbs 214 feet up a cliff. The top is 512 feet above the sea. He started at 28 feet above sea level. How far has he yet to climb? How far will he climb in total?

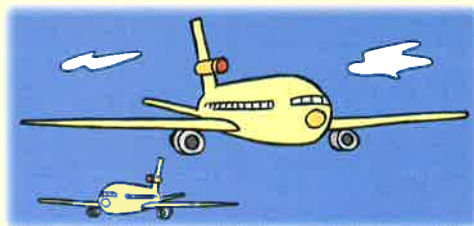


- 3 In one savings account Mr Rich had £4017. In another he had £3925. How much more did he have in the first account?

- 4 Sarita cycled 176 miles on her first cycling holiday and 158 miles on her second cycling holiday. How many miles did she cycle in total?



- 5 One aeroplane flew 4036 miles and a second one flew 3975 miles. How much further did the first plane fly?



The Chang family saved £1746 for the family holiday. It actually cost £2108. How much more did they have to pay?



# How do we solve it?

- 1 90 footballers arrive for a 5-a-side competition. How many teams can be made, and how many matches can be played in the first round?



- 2 Ling has 72 stickers, and can put 4 on each page in her album. How many pages can she fill?



- 3 Spring Water bottles are packed in sixes. 834 bottles are sent to the supermarket. How many packs of bottles is this?



- 4 Three friends go out for dinner, and the bill comes to £81. They share the bill and give a tip of £2.50 each. How much does each pay?



The three friends in question 4 go out for dinner again, and again share the bill. They each leave a tip of £3.50. Altogether they paid £102. How much did one meal cost?

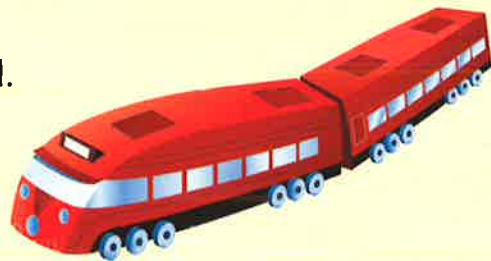
- 1 Bina drinks lots of water. Last year she drank 937 pints of water. How many gallons is this? There are 8 pints in 1 gallon.



- 2 8692 people attended Rovers' last match. They all gave 5p to a charity. How much was collected? How much more would have been collected if they had given 8p instead?



- 3 It is 132 miles from London to Sheffield. Neelaksh makes 18 return trips in a year. How far has he travelled?



- 4 Last month the store sold 18 washing machines at £324 each and 21 dishwashers at £426 each. How much did they take altogether for these two items?



Next month, the store in question 4 plans to reduce the price on their washing machines to £300. They expect to sell 21 machines at this cheaper price.

If they manage this, how much more money will they make than last month?



# How do we solve it?

- 1 4732 people attended the theatre last week, each paying £8 for a ticket. The theatre company were hoping to receive takings of £40 000. How much more or less than this did they take?



- 2 Which is the greater prize: one-third of £828 or one-quarter of £948, and by how much?



- 3 Six years ago a new ship was built to travel round the Caribbean. The captain was told it would need an overhaul in 30 000 miles. Every year it has sailed 2768 miles. How many more miles can it do before it needs an overhaul?

- 4 Kate's number, divided by 3, gives an answer of 279 r 1. Paul's number, divided by 4, gives an answer of 236 r 3. What are the numbers? Which is larger and by how much?



A 'Round the World' holiday costs £4286. Children travel half-price. What is the cost for a family of four adults and three children?





Author Team:  
Peter Gorrie, Lynda Keith, Lynne McClure and Amy Sinclair



Heinemann is an imprint of Pearson Education Limited, a company incorporated in England and Wales, having its registered office at Edinburgh Gate, Harlow, Essex, CM20 2JE. Registered company number: 872828

[www.pearsonschools.co.uk](http://www.pearsonschools.co.uk)

Heinemann is a registered trademark of Pearson Education Limited

Text © Pearson Education Limited 2010

First published 2010

4 13 12 11 10  
0 9 8 7 6 5 4 3 2 1

### British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

ISBN 978 0 435 04337 7

### Copyright notice

All rights reserved. No part of this publication may be reproduced in any form or by any means (including photocopying or storing it in any medium by electronic means and whether or not transiently or incidentally to some other use of this publication) without the written permission of the copyright owner, except in accordance with the provisions of the Copyright, Designs and Patents Act 1988 or under the terms of a licence issued by the Copyright Licensing Agency, 90 Tottenham Court Road, London W1P 0LP. Applications for the copyright owner's written permission should be addressed to the publisher.

Layout design by Debbie Oatley @ room9design

Illustrations © Harcourt Education Limited 2006-2007, Pearson Education Limited 2010

Illustrated by Piers Baker, Fred Blunt, Emma Brownjohn, Tom Cole, Jonathan Edwards, Stephen Elford, Andy Hammond, John Haslam, Andrew Hennessey, Nigel Kitching, Sim Marriott, Q2A Media, Debbie Oatley, Andrew Painter, Tom Percival, Mark Ruffle, Anthony Rule, Eric Smith, Dale Sullivan and Gary Swift

Cover design by Pearson Education Limited

Cover illustration Volker Beisler © Pearson Education Limited

Printed in the UK by Scotprint

### Acknowledgements

Every effort has been made to contact copyright holders of material reproduced in this book. Any omissions will be rectified in subsequent printings if notice is given to the publishers.