

## Maths Assessment Year 6 Term 3: Addition, Subtraction, Multiplication and Division

## This Assessment is divided into 3 sections should teachers wish to spread it over 2 or 3 sessions.

Section **A** is mental calculations; **B** is mainly division and multiplication; **C** is mainly addition and subtraction.

### Section A

1. Perform mental calculations, including with mixed operations and large numbers.

### Section B

- 2. Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.
- 3. Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.
- 4. Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.
- 5. Identify common factors, common multiples and prime numbers.
- 6. Use their knowledge of the order of operations to carry out calculations involving the four operations.

### Section C

- 7. Solve addition and subtraction multi-step problems in contexts, deciding which operations to use and why.
- 8. Solve problems involving addition, subtraction, multiplication and division.
- 9. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

Name: Date:





# Maths Assessment Year 6 Term 3: Addition, Subtraction, Multiplication and Division

### Section A

Perform mental calculations, including with mixed operations and large numbers.
 Answer the questions your teacher reads out and write the answers in the spaces below.

(a)	k)
b)	l) people
c)	m) pencils
d)	n) £
e)	0)
f)	p)
g)	q) £
h)	r) m
i)	s)
j)	t)



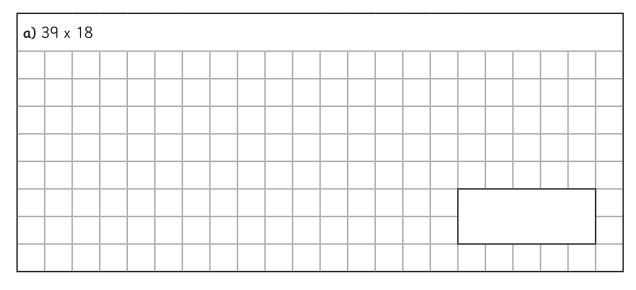


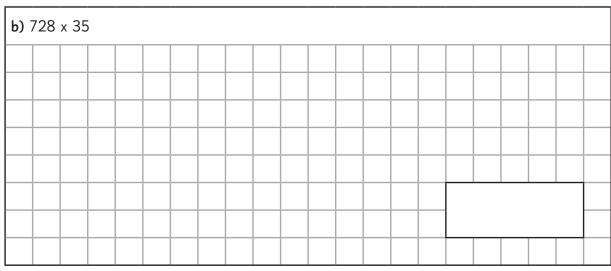
### Section B

2. Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.

Use a  $\mbox{\bf written method}$  to find the answer to these calculations:

Show your working out.







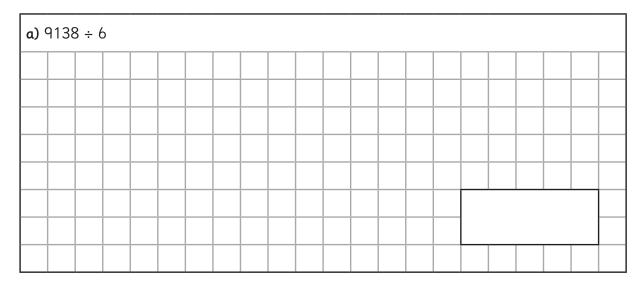




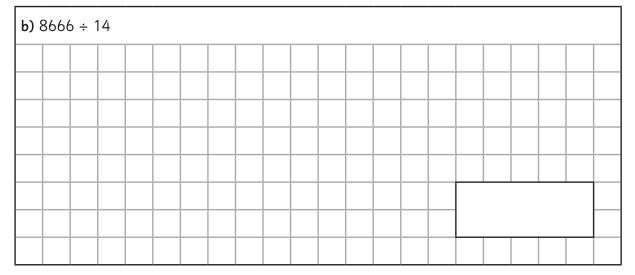
**3.** Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.

Use **long division** to find the answer to these calculations:

Show your working out.









c) Find the answer to this calculation. Show the remainder as a fraction.

407	407 ÷ 7 =																

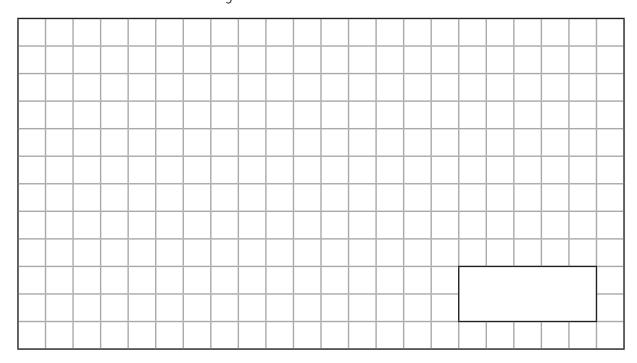




d) An ice-cream van operator makes a profit of £181.86 in one day.

She makes 18p profit on every cone and 24p profit on each lolly.

She sells 509 cones. How many lollies does she sell?





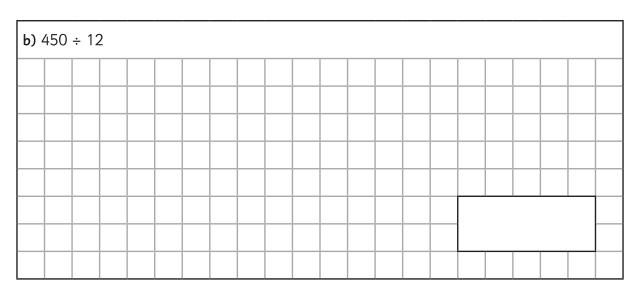
**4.** Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.

Use the **written method** of short division to calculate these answers, giving the answers as a decimal number.

a) 2	a) 295 ÷ 4																

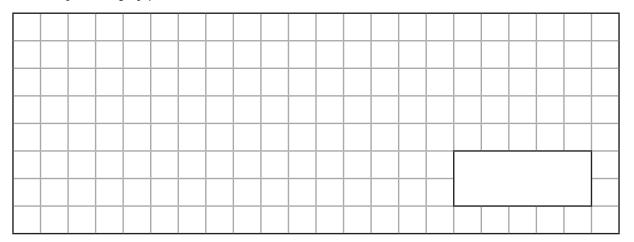








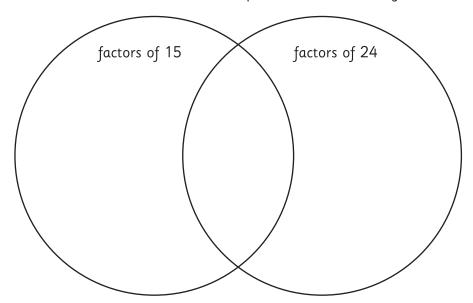
c) A manufacturer makes plastic models. Each model weighs 32g. How many models can be made from 1kg of plastic?





 ${\bf 5.}\ \ Identify\ \ common\ \ factors,\ common\ \ multiples\ \ and\ \ prime\ \ numbers.$ 

a) Put these numbers in the correct places in this Venn diagram: 2, 3, 5, 8, 12





b) Identify the common factors of 12 and 18.





c) Circle all the numbers that are common multiples of 3 and 7.

13

21

37

42

63

72



d) What is the lowest common multiple of 4 and 9?





e) Write all the prime numbers between 60 and 80.





**6.** Use their knowledge of the order of operations to carry out calculations involving the four operations

a) Find the answers to these calculations:

$4 + 5 \times 6 - 4 =$	30 ÷ (5 x 2) =
7 x 12 ÷ 2 =	(9-3)+11=



**b)** Circle the calculation that would give the answer 18:

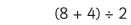
6 +	(3	Х	2)

$$(6 + 3) \times 2$$



c) Jack has 8 football cards in his pocket and 4 in his bag. He shares them equally between his two friends.

Circle the calculation that correctly shows the order of steps in this problem:



$$8 + 4 \div 2$$

$$8 + (4 \div 2)$$



d) Use these numbers to make the calculation correct:

3 2 9	( ) ÷ = 3
5 3 8	( ) x = 25

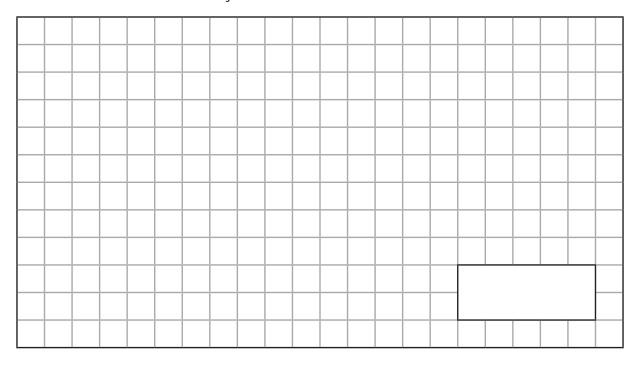




### Section C

- **7.** Solve addition and subtraction multi-step problems in contexts, deciding which operations to use and why.
- a) Peter buys a drink and a piece of fruit. The fruit costs half as much as the drink. He pays for the drink and fruit with a  $\pounds 2$  coin and gets 20p change.

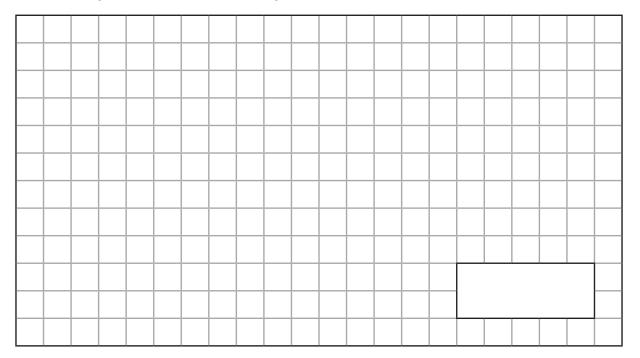
How much will the drink and fruit cost?





- **b)** At a school there are 117 children in Key Stage 2. The children record how they travelled to school. Twice as many children walked as came by car. The rest of the children came by bus.
  - 36 children came to school by car.

How many children came to school by bus?







c) At a school fair the total taken in each area is recorded on a table. Complete the table.

Area	Money at the end	Float	Profit
Hall	£108.45	£25	£83.45
Classrooms	£172.35	£40	
Playground		£20	£78.52
		Total Profit	£294.32



d) On Children in Need day, the children collect money for not wearing uniform and selling cakes. The 2 amounts raised are £45.50 and £23.35. The headteacher offers to match the children's donations.

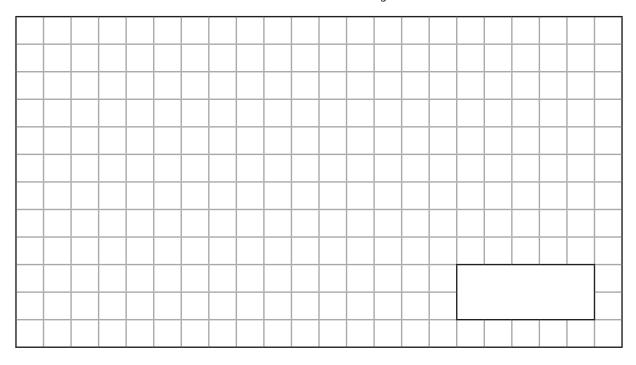
How much money will the school donate to Children in Need?





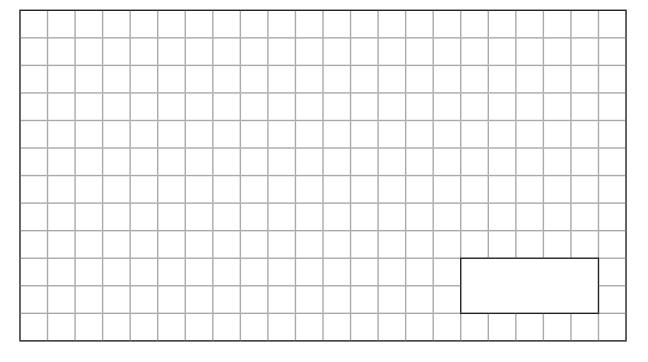
e) Johanna is on a training regime for running a marathon. She is advised not to run more than 60 km each week. On Monday she runs 13.4 km and on Tuesday she runs 4.8 km. She repeats this over the next four days.

What is the maximum distance she can run on Sunday?





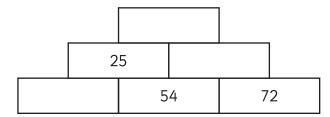
f) The cost of the accommodation on a school residential visit is £152.00 per child. The cost of the coach is £32 per child. Amit has paid £85 towards the trip already. How much more does he need to pay?





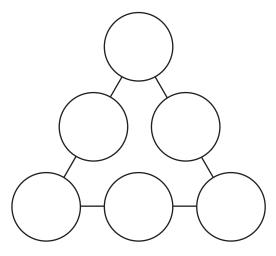


- 8. Solve problems involving addition, subtraction, multiplication and division.
- **a)** In the following grid each number is the difference between the 2 numbers beneath. Complete the grid.

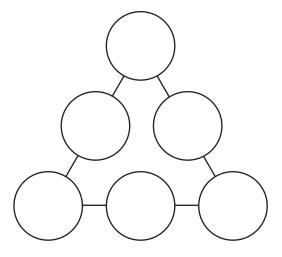




**b)** Use the numbers 1, 2, 3, 4, 5, 6 once in each pattern so that each side of the triangle adds up to the same number.



Now use the same digits to complete the pattern with the same rule, but a different total.





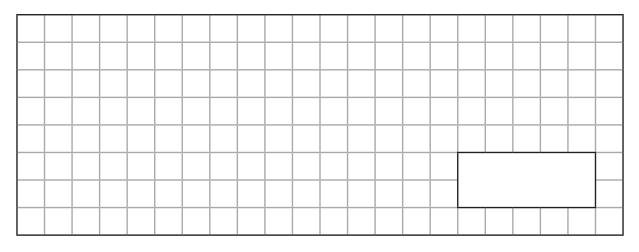


c) Hannah starts with a number:

She divides the number by 6, then subtracts 7 from the answer.

She multiplies the resulting number by 9 and adds 27 to the answer.

She is left with the number with which she started. What number did Jan start with?





d) Use the symbols + and - to make this calculation correct:

26		16		12	19	=	40
	ı		I .				

e) Circle 3 numbers that total 200.

78

34

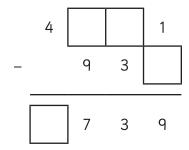
89

43

13

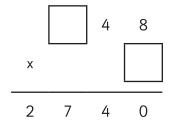
79

f) Write the missing digits to make this subtraction calculation correct.





**g)** Write the missing digits to make this multiplication correct.









about 300.			
Explain what you think	of Sam's estimation.		
			2
A hay of wood costs C	7.05. A builder buus 12 nachs	of wood. Estimate the cost	2
of the wood.	7.95. A builder buys 12 packs	of wood. Estimate the cost	
			7
			2
Circle the most sensible	estimate to this calculation:		
0.712 x 9			
3 12	6 9		1
		the highest attendance.	1
This table shows the 5	football clubs in England with	the highest attendance.	1
This table shows the 5	football clubs in England with  Highest attendance	the highest attendance.	1
This table shows the 5  Club  Manchester United	football clubs in England with  Highest attendance  75 415	the highest attendance.	1
This table shows the 5  Club  Manchester United  Arsenal	football clubs in England with  Highest attendance  75 415  60 084	the highest attendance.	1
This table shows the 5  Club  Manchester United	football clubs in England with  Highest attendance  75 415	the highest attendance.	1
This table shows the 5  Club  Manchester United  Arsenal	football clubs in England with  Highest attendance  75 415  60 084	the highest attendance.	1
Club  Manchester United  Arsenal  Manchester City	football clubs in England with  Highest attendance  75 415  60 084  54 523	the highest attendance.	1
Club  Manchester United  Arsenal  Manchester City  Newcastle United  Liverpool	football clubs in England with  Highest attendance  75 415  60 084  54 523  51 682  44 228	the highest attendance.	1
Club  Manchester United  Arsenal  Manchester City  Newcastle United  Liverpool	football clubs in England with  Highest attendance  75 415  60 084  54 523  51 682	the highest attendance.	1
Club  Manchester United  Arsenal  Manchester City  Newcastle United  Liverpool	football clubs in England with  Highest attendance  75 415  60 084  54 523  51 682  44 228	the highest attendance.	1
Club  Manchester United  Arsenal  Manchester City  Newcastle United  Liverpool	football clubs in England with  Highest attendance  75 415  60 084  54 523  51 682  44 228	the highest attendance.	2

e) Here is a receipt for some shopping:

Soy Sauce	0.47
Leeks	0.89
Apples	1.19
Olive Spread	0.79
Peppers	1.17
Tomatoes	0.79
Yoghurt	0.69
Cheese	1.59
Blueberries	1.89

Estimate the total cost of the items.





### **Teacher Script and Answer Sheet: Maths Assessment Year 6:**

Addition, Subtraction, Multiplication and Division



Section A (Q1): Involves the teacher reading out questions for children to calculate mentally, with no written working out.

question	script	marks	answer
1. Perform	mental calculations, including with mixed operations and large num	nbers.	
Read the	se questions to the class:		
a	Subtract 108 from 417.	1	309
b	Calculate the sum of 478 and 123.	1	601
С	What is twice 516?	1	1032
d	Multiply 99 by 6.	1	594
е	Divide 132 by 12 and subtract 9.	1	2
f	How many fours are there in 208?	1	52
g	What number is 50 more than 2951?	1	3001
h	Multiply 50 by 80.	1	4000
i	Add 15 to the product of 6 and 9.	1	69
j	What is the remainder when you divide 212 by 25?	1	12
k	If I halve a number, the answer is 83. What is the number?	1	166
I	One Saturday at a swimming pool, 109 adults and 165 children went swimming. How many people went to the swimming pool that day?	1	274
m	Out of a box of 240 pencils, there are 178 left. How pencils have been taken out of the box?	1	62
n	Alex buys a t-shirt for £2.99 and a cap for £2.50. She pays with a £10 note. How much change will she get?	1	£4.51
0	94 than a number is 320. What is the number?	1	414
р	Add 4.5 to 18.	1	22.5
q	Three pairs of shin pads cost £8. How much will 9 pairs of shin pads cost?	1	£24
r	The perimeter of a regular hexagon is 36m What is the length of one side?	1	6m
S	What is 100 add 350, subtract 75?	1	375
t	Harmony is playing a game and needs to score 100 to win. Her score is 67, how many more does she need?	1	33



**Section B (Q2-6):** Is for children to complete independently.

question	answer	marks	notes			
2. Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.						
a	702	2	2 marks for correct answer. 1 mark if only 1 arithmetical error.			
b	25 480	2	2 marks for correct answer. 1 mark if only 1 arithmetical error.			
division, ar	<b>3.</b> Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.					
а	1523	2	2 marks for correct answer. 1 mark if only 1 arithmetical error			
b	619	2	2 marks for correct answer. 1 mark if only 1 arithmetical error			
С	58 <del>1</del> 7	1				
d	376	3	3 marks for the correct answer. 2 or 1 marks available for correct method with 1 or 2 mistakes.			
	<b>4.</b> Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.					
а	73.75	2	2 marks for each correct answer. 1 mark if only 1 arithmetical error.			
b	37.5	2	2 marks for each correct answer. 1 mark if only 1 arithmetical error.			
С	31 models	1				
5. Identify common factors, common multiples and prime numbers.						
a	factors of 15 factors of 24  5 3 2 12 8	2	2 marks for all correct 1 mark for only 1 error but the rest correct.			



question	answer				marks	notes	
b	1, 2, 3, 6				1		
С	21, 42 and 63	21, 42 and 63				1	
d	36					1	
е	61, 67, 71, 73,	61, 67, 71, 73, 79				1	
6. Use their knowledge of the order of operations to carry out calculations involving the four operations.							
a	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				4		
b	6 + (3 × 2) (6 + 3) × 2 6 + 3 × 2				1		
С	(8 + 4) ÷ 2			1			
d				2			
7. Solve ad	dition and subtra	action multi-s	step problems	in contexts, d	leciding wl	nich oper	rations to use and why.
a	a Drink £1.20 and the fruit 60p			2	2 marks for a correct answer. 1 mark for an incorrect answer using a correct method.		
b	9 children came by bus				2	2 marks for a correct answer. 1 mark for an incorrect answer using a correct method.	
	Area	Money at the end	Float	Profit	2	2 marks for all 3 answers correct. 1 mark for 2 answers correct	
С	Hall	£108.45	£25	£83.45			
	Classrooms	£172.35	£40	£132.35			
	Playground	£98.52	£20	£78.52			
			Total Profit	£294.32	J		
d	£137.70					2	2 marks for a correct answer. 1 mark for an incorrect answer using a correct method.



question	answer	marks	notes			
е	5.4km (She runs (13.4 + 4.8) km x 3 = 54.6 km) on the first 6 days.	2	2 marks for a correct answer. 1 mark for an incorrect answer using a correct method.			
f	£99	1				
8. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.						
a	7 25 18 29 or 79 54 72	1				
d	1 6 5 2 4 3 6 1 2 5 3 4	3	3 marks for both correct. 2 marks for 1 correct.			
C	72	2	2 marks for correct answer.  1 mark for correct method with only 1 mistake.			
d	26 <b>+</b> 16 <b>-</b> 12 <b>+</b> 19 = 49	1				
е	78 34 89 43 13 79	1				
f	4 6 7 1 - 9 3 2 	1				
g	2 4 8 x 5 2 7 4 0	1				



question	answer	marks	notes		
9. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.					
а	Give 2 marks for any reasonable explanation that Sam's explanation is too high. Good answers may say 40 x 7 = 280 so 300 is too high.	2	1 mark for a single calculation representing an estimate e.g. 40 x 7 = 280, but no written explanation.		
b	£96	2	2 marks for £96, which is 12 x £8. 1 mark for writing 12 x £8 but incorrectly calculating the answer. No marks for calculating 12 x £7.95.		
С	6	1			
d	285 000	2	2 marks for an estimate in the region of 285 000		
е	£11	3	3 marks for an estimate of £11 2 marks for an estimate between £10 and £12 inclusive but not £11 and 1 mark for an estimate between £9 and £9.99 or £12.01 and £13 inclusive.  No marks for a calculation to get an exact answer (£11.06) Children may note down rounding / estimates of each item.		
		Total 82			