Name:

Maths Assessment Year 5 Term 3: Multiplication and Division

1. Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.
2. Know and use the vocabulary of prime numbers, prime factors and composite (non- prime) numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19.
3. Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.
4. Multiply and divide numbers mentally drawing upon known facts.
5. Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.
6. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000.
7. Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}).
8. Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes.
9. Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
10. Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Name: Date:

70 total marks

Maths Assessment Year 5 Term 3: Multiplication and Division

1. Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.

a) Complete the table below, where a tick is placed in the relevant row and column to identify if the number on the left is a multiple of the number at the top of the column.

number	multiple of 3	multiple of 4	multiple of 7	multiple of 8
16	x	✓	x	✓
36				
56				
	✓	x	✓	x

3 marks

b) List all of the factors of these numbers:

number	factors
15	
28	
72	

3 marks

c) Write all the **common** factors of each pair of numbers:

numbers	factors
9 and 21	
12 and 42	
10 and 35	

3 marks

Total for this page

2. Know and use the vocabulary of prime numbers, prime factors and composite (non- prime) numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19.

a) Write all prime numbers between 50 and 90;

3 marks

b) Choose a composite number and explain why it is a composite number:

1 mark

c) What are the prime factors of these numbers?

numbers	prime factors
24	
42	

2 marks

3. Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.

Multiply these numbers, using a formal written method:

696 x 3	5903 x 6

2 marks

Total for this page

892 x 31	4517 x 47

2 marks

4. Multiply and divide numbers mentally drawing upon known facts.

Use your knowledge of place value to multiply and divide the following:

800 x 300 =	2100 ÷ 70 =
60 x 50 x 40 =	7200 ÷ 90 =
1800 x 30 =	400 000 ÷ 500 =

6 marks

5. Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.

a) Divide the following, using a formal short method:

1065 ÷ 5	4864 ÷ 8

2 marks

Total for this page

b) Solve this problem:

A school is buying new books for classrooms and will spend £4000 in total for the 4 classes and the Nursery. If £650 is spent on the books for the Nursery and the remaining money is divided equally, how much will be spent on each class? Show your working out.

2 marks

6. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000.

a) Complete the following table:

number	x 1000	÷ 100	
5.7			57
		0.453	
109.3			
	30 912		
			1003

15 marks

7. Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}).

a) Which square number comes before 49?

1 mark

b) Circle the cubed numbers:

8 16 18 49 121 125

1 mark

Total for this page

c) Draw a line to the correct answer:

1^2	64
6^3	27
8^2	1
3^3	216

4 marks

8. Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes.

Circle whether each statement is true or false (use the space in the box to work out the answers):

All numbers have odd and even factors.	true / false
All multiples of 12 are multiples of 3, 6 and 9.	true / false
64 is a squared number and a cubed number.	true / false
The difference between consecutive and square numbers is always odd.	true / false

4 marks

9. Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.

a) Fill in the missing boxes:

2500 ÷ 50 = ☐ - 90

(☐ + 8) x ☐ = 100

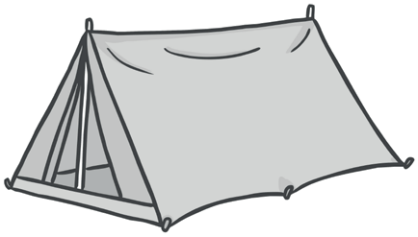
20.01 ÷ ☐ = 2.001

3 marks

Total for this page

b) Solve these problems, show your working out:

Here are the costs of using a campsite:



Train	Adult camping	Child camping	Pitch hire
per week	£70	£40	£92
per night	£12	£7	£15

i. The Murray family want to go camping for 10 nights. There are 2 adults and 2 children. Calculate the cost of the trip. The family need to pay for the pitch and for each camper for all 10 nights. Show your working out.

3 marks

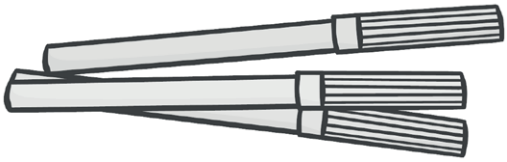
ii. The Wilson family join the Murray family for 5 nights. There are 2 adults and 4 children. How much more or less do they pay for their camping holiday?

2 marks

Total for this page

10. Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Packs of pens come in sets of 10:



a) Packs of felt pens contain 6 coloured and 4 black pens. If a school buys enough packs so there are 90 black felt pens, how many coloured pens will be bought?

2 marks

Total for this page

£1 is equivalent to 149 pakistani rupees.

b) Complete this chart:

Pound	**Rupee**
£1	149 Rupees
£10	__ Rupees
£ __	4470 Rupees
£50	__ Rupees
£ __	14 900 Rupees

4 marks

This chart converts litres to pints and gallons:

1 litre	1.76 pint
1 litre	0.22 gallons

c) Convert 1.5 litres into pints:

1 mark

d) Convert 1 gallon into litres to the nearest half litre:

1 mark

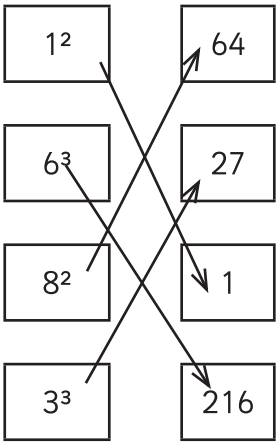
Total for this page

<table>
<tr><th>question</th><th>answer</th><th>marks</th><th>notes</th></tr>
<tr><td colspan="4">1. Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</td></tr>
<tr><td>a</td><td>
<table>
<tr><td>36</td><td>✓</td><td>✓</td><td>x</td><td>x</td></tr>
<tr><td>56</td><td>x</td><td>✓</td><td>✓</td><td>✓</td></tr>
<tr><td>21</td><td>✓</td><td>x</td><td>✓</td><td>x</td></tr>
</table>
</td><td>3</td><td>1 mark per correct row

Allow other correct answers in the final row (e.g. 42, 63 – not 84)</td></tr>
<tr><td>b</td><td>
<table>
<tr><td>Number</td><td>Factors</td></tr>
<tr><td>15</td><td>1, 3, 5, 15</td></tr>
<tr><td>28</td><td>1, 2, 4, 7, 14, 28</td></tr>
<tr><td>72</td><td>1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72</td></tr>
</table>
</td><td>3</td><td>1 mark for all factors given per number</td></tr>
<tr><td>c</td><td>
<table>
<tr><td>Numbers</td><td>Factors</td></tr>
<tr><td>9 and 21</td><td>1, 3</td></tr>
<tr><td>12 and 42</td><td>1, 2, 6, 3</td></tr>
<tr><td>10 and 35</td><td>1, 5</td></tr>
</table>
</td><td>3</td><td>1 mark for all common factors given per pair</td></tr>
<tr><td colspan="4">2. Know and use the vocabulary of prime numbers, prime factors and composite (non- prime) numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19.</td></tr>
<tr><td>a</td><td>53, 59, 61, 67, 71, 73, 79, 83, 89</td><td>up to 3 marks</td><td>3 marks for all numbers identified and no errors
If 5 out of 6 identified and no errors award 2 marks
If 4 or more identified and 1 error award 1 mark</td></tr>
<tr><td>b</td><td>A composite number is not a prime number, so is divisible by numbers other than 1 and itself. An example might be "4 is a composite number because it is divisible by 2, (which is not 1 or itself)."</td><td>1</td><td></td></tr>
<tr><td>c</td><td>
<table>
<tr><td>24</td><td>2,3</td></tr>
<tr><td>42</td><td>2,3,7</td></tr>
</table>
</td><td>2</td><td>1 mark for each number correct, any order can be accepted</td></tr>
<tr><td colspan="4">3. Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.</td></tr>
<tr><td></td><td>696 x 3 = 2088
5903 x 6 = 35 418
892 x 31 = 27 652
4517 x 47 = 212 299</td><td>4</td><td>Do not accept the answer only, working out must show evidence of a formal written method.</td></tr>
<tr><td colspan="4">4. Multiply and divide numbers mentally drawing upon known facts.</td></tr>
<tr><td></td><td>
<table>
<tr><td>800 x 300 = 240 000</td><td>2100 ÷ 70 = 30</td></tr>
<tr><td>60 x 50 x 40 = 120 000</td><td>7200 ÷ 90 = 80</td></tr>
<tr><td>1800 x 30 = 54 000</td><td>400 000 ÷ 500 = 800</td></tr>
</table>
</td><td>6</td><td>1 mark per question correct.</td></tr>
</table>

<table>
<tr><th>question</th><th>answer</th><th>marks</th><th>notes</th></tr>
<tr><td colspan="4">5. Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.</td></tr>
<tr><td>a</td><td>1065 ÷ 5 = 213
4864 ÷ 8 = 608</td><td>2</td><td>Do not accept the answer only, working out must show evidence of a formal short method.</td></tr>
<tr><td>b</td><td>£837.50</td><td>2</td><td>Award 1 mark for correct method and only one mistake calculation</td></tr>
<tr><td colspan="4">6. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000.</td></tr>
<tr><td>a</td><td><table><tr><td>number</td><td>x 1000</td><td>÷ 100</td><td>x10</td></tr><tr><td>5.7</td><td>5700</td><td>0.057</td><td>57</td></tr><tr><td>45.3</td><td>45 300</td><td>0.453</td><td>453</td></tr><tr><td>109.3</td><td>109 300</td><td>1.093</td><td>1093</td></tr><tr><td>30.912</td><td>30 912</td><td>0.30912</td><td>309.12</td></tr><tr><td>100.3</td><td>100 300</td><td>1.003</td><td>1003</td></tr></table></td><td>6</td><td>1 mark per correct answer

Allow no zero before a decimal point (e.g. 0.09 or .09)

Allow a zero after other digits in a decimal (e.g. 4.7 or 4.70)</td></tr>
<tr><td colspan="4">7. Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³).</td></tr>
<tr><td>a</td><td>36</td><td>1</td><td></td></tr>
<tr><td>b</td><td>8 and 125</td><td>1</td><td></td></tr>
<tr><td>c</td><td> 
</td><td>4</td><td></td></tr>
<tr><td colspan="4">8. Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes.</td></tr>
<tr><td></td><td>False
False
True
True</td><td>4</td><td></td></tr>
</table>

<table>
<tr><th>question</th><th>answer</th><th>marks</th><th>notes</th></tr>
<tr><td colspan="4">9. Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.</td></tr>
<tr><td>a</td><td>2500 ÷ 50 = 140 - 90
Various answers are possible
eg (2 + 8) x 10 = 100, (12 + 8) x 5 = 100,
or (17 + 8) x 4 = 100

20.01 ÷ 10 = 2.001</td><td>3</td><td>Allow any correct answer including use of negative numbers:
eg (-7 + 8) x 100 = 100</td></tr>
<tr><td>b i</td><td>£471
(Adults £70 + £12x3 = £106 each = £212
(Children £40 + £7x3 = £61 each = £122)
(Pitch = £92 +£15x3 = £137)</td><td>3</td><td>Correct answer is awarded 3 marks. Lose 1 mark for each mistake in calculating as long as the method is correct.</td></tr>
<tr><td>b ii</td><td>£136 less (Cost is £335)</td><td>2</td><td>I mark for correct method with only 1 mistake in calculation.</td></tr>
<tr><td colspan="4">10. Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</td></tr>
<tr><td>a</td><td>138 coloured pens
(23 packs would mean 92 black pens)</td><td>2</td><td>Award 1 mark for an incorrect answer but demonstration of a correct method with only 1 error.</td></tr>
<tr><td>b</td><td><table><tr><td>£10</td><td>1490 rupees</td></tr><tr><td>£30</td><td>4470 rupees</td></tr><tr><td>£50</td><td>7450 rupees</td></tr><tr><td>£100</td><td>14 900 rupees</td></tr></table></td><td>4</td><td></td></tr>
<tr><td>c</td><td>2.64 pints</td><td>1</td><td>Accept without pints.</td></tr>
<tr><td>d</td><td>4.5 litres</td><td>1</td><td>Accept without litres.</td></tr>
<tr><td></td><td></td><td>Total
70</td><td></td></tr>
</table>