

Maths Assessment Year 5: 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:

Maths Assessment Year 5: Multiplication and Division

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

a) Tick or cross to show if the numbers are multiples of the given number (the first one is done for you).

number	multiple of 3	multiple of 5	multiple of 6	multiple of 8
24	✓	x	✓	✓
75				
120				
82				

3 marks

b) List all of the factors of these numbers:

number	factors
12	
20	
36	

3 marks

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

numbers	factors
12 and 18	
20 and 24	
20 and 30	

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) Draw a circle around all **prime** numbers up to 50;

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
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

b) Choose a number which is a prime number and explain why it is a prime number:

c) What are the prime factors of these numbers?

numbers	prime factors
12	
30	

.....

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:

245 x 8	3,353 x 6
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3 marks



1 mark



2 marks



2 marks



Total for this page

483×24

$1,832 \times 45$

2 marks

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

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

$600 \times 500 =$

$1,500 \div 30 =$

$80 \times 20 \times 60 =$

$3,000 \div 60 =$

$1,600 \times 40 =$

$200,000 \div 400 =$

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:

$456 \div 6$

$1,264 \div 8$

2 marks

Total for
this page

b) Solve this problem:

A Primary school has 124 pupils. They are having a party and calculate that they will need a jug of juice for every 5 pupils. How many jugs of juice will they need to buy? Show your working out.



2 marks

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

a) Multiply the following:

number	$\times 10$	$\times 100$	$\times 1,000$
54			
8.3			

6 marks

b) Divide the following:

number	$\div 10$	$\div 100$	$\div 1,000$
3876			
123.9			
1478.3			

9 marks

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

a) What is the next square number after 36?

b) What is the cubed number between 8 and 64?

2 marks

Total for this page

c) Draw a line to the correct answer:

$$3^2$$

$$64$$

$$5^3$$

$$36$$

$$6^2$$

$$9$$

$$4^3$$

$$125$$



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 multiples of 10 are multiples of 2 and 5	true / false
$5^2 + 4^3 > 3^3 + 6^2$	true / false
The third squared number added to the fourth cubed number is an even number.	true / false
All factors of 45 are 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:

$$70 \times \boxed{} = 4,900$$

$$(\boxed{} \times \boxed{}) + 80 = 110$$

$$\boxed{} \div 100 = 0.06$$



3 marks



Total for this page

b) Solve these problems, show your working out:

Here are the costs of holidays to Spain



Month	Return Flight cost per adult	Return Flight cost per child	Room cost per room for 1 week
June	£120	£99	£100
July	£145	£115	£130
August	£165	£125	£150
September	£135	£110	£125

i. The Smith family go on holiday to Spain for 1 week in July. There are 2 adults and 3 children. They need 2 rooms. How much will the holiday cost? Show your working out.

2 marks

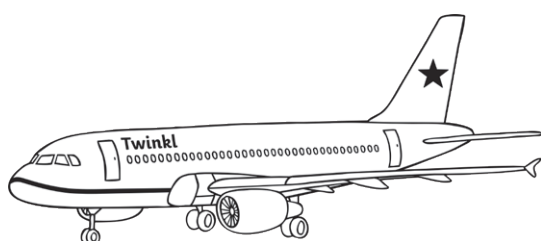
ii. The Patels have two adults and two children in their family and need two rooms. How much more would it cost for the Patel Family to go on holiday to Spain for 1 week in August than it would cost them in July?

2 marks

iii. The aeroplane that the Griffiths family go on to Spain holds 240 passengers and seats are arranged in rows of 8. How many rows are there?

1 mark

Total for this page



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

Here are the ingredients to make 12 cupcakes:



110g butter
110g caster sugar
110g plain flour
2 table spoons baking powder
 $\frac{1}{4}$ teaspoon salt
2 medium eggs
1 teaspoon vanilla extract

For their class party, Jodie wants to make 48 cakes. She already has baking powder, salt and vanilla extract in her cupboard. She needs to buy butter, caster sugar, flour and eggs.

a) Work out the cost of those items.

Butter: £1.50 for 250g pack
Caster sugar: £1 for a 200g bag
Plain flour: 75p for 500g bag
Eggs: 6 for £2

Remember you need to have enough of the ingredients!!!



2 marks



Total for
this page

1 Euro is equivalent to £1.26



b) Complete this chart:

Pound	Euro
£1.26	€1
£	€10
£	€30
£	€50
£126	€

This chart converts metres to feet:

1 metre	3.28 feet
10 metres	32.8 feet
100 metres	328 feet

c) How many feet are there in 12 metres?

d) How many feet are there in $7 \frac{1}{2}$ metres?



4 marks



1 marks



1 marks



Total for
this page

question	answer					marks	notes								
1. Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.															
a	75	✓	✓	x	x	3	1 mark per correct row								
	120	✓	✓	✓	✓										
	82	x	x	x	x										
b	<table><tr><th>Number</th><th>Factors</th></tr><tr><td>12</td><td>1, 2, 3, 4, 6, 12</td></tr><tr><td>20</td><td>1, 2, 4, 5, 10, 20</td></tr><tr><td>36</td><td>1, 2, 3, 4, 6, 9, 12, 18, 36</td></tr></table>					Number	Factors	12	1, 2, 3, 4, 6, 12	20	1, 2, 4, 5, 10, 20	36	1, 2, 3, 4, 6, 9, 12, 18, 36	3	1 mark for all factors given per number
Number	Factors														
12	1, 2, 3, 4, 6, 12														
20	1, 2, 4, 5, 10, 20														
36	1, 2, 3, 4, 6, 9, 12, 18, 36														
c	<table><tr><th>Numbers</th><th>Factors</th></tr><tr><td>12 ad 18</td><td>1, 2, 3, 6</td></tr><tr><td>20 and 24</td><td>1, 2, 4</td></tr><tr><td>20 and 30</td><td>1, 2, 5, 10</td></tr></table>					Numbers	Factors	12 ad 18	1, 2, 3, 6	20 and 24	1, 2, 4	20 and 30	1, 2, 5, 10	3	1 mark for all common factors given per pair
Numbers	Factors														
12 ad 18	1, 2, 3, 6														
20 and 24	1, 2, 4														
20 and 30	1, 2, 5, 10														
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	Circles drawn around: 2; 3; 5; 7; 11; 13; 17; 19; 23; 29; 31; 37; 41; 43; 47					up to 3 marks	3 marks for all numbers identified and no errors If 13 out of 15 identified and no errors award 2 marks If 12 or more identified and 1 error award 1 mark								
b	Give a correct example of a Prime number and an explanation such as ` it is a prime number because it can only be divided by one and itself` or `it has only one and itself as factors`					1									
c	<table><tr><td>12</td><td>2, 2, 3</td></tr><tr><td>30</td><td>2, 3, 5</td></tr></table>					12	2, 2, 3	30	2, 3, 5	2	1 mark for each number correct, any order can be accepted				
12	2, 2, 3														
30	2, 3, 5														
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.															
	245 x 8 = 1,960 3,353 x 6 = 20,118 483 x 24 = 11,592 1,832 x 45 = 82,440					4	Do not accept the answer only, working out must show evidence of a formal written method.								
4. Multiply and divide numbers mentally drawing upon known facts.															
	<table><tr><td>600 x 500 = 300,000</td><td>1,500 ÷ 30 = 50</td></tr><tr><td>80 x 20 x 60 = 96,000</td><td>3,000 ÷ 60 = 50</td></tr><tr><td>1,600 x 40 = 64,000</td><td>200,000 ÷ 400 = 500</td></tr></table>					600 x 500 = 300,000	1,500 ÷ 30 = 50	80 x 20 x 60 = 96,000	3,000 ÷ 60 = 50	1,600 x 40 = 64,000	200,000 ÷ 400 = 500	6	1 mark per question correct.		
600 x 500 = 300,000	1,500 ÷ 30 = 50														
80 x 20 x 60 = 96,000	3,000 ÷ 60 = 50														
1,600 x 40 = 64,000	200,000 ÷ 400 = 500														

question	answer	marks	notes												
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	$456 \div 6 = \mathbf{76}$ $1,264 \div 8 = \mathbf{158}$	2	Do not accept the answer only, working out must show evidence of a formal short method.												
b	25 jugs	2	Award 1 mark for an incorrect answer but demonstration of a correct method, including rounding up. Do not accept an answer with a remainder or decimal.												
6. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000.															
a	<table border="1"> <tr> <td>54</td><td>540</td><td>5,400</td><td>54,000</td></tr> <tr> <td>8.3</td><td>83</td><td>830</td><td>8,300</td></tr> </table>	54	540	5,400	54,000	8.3	83	830	8,300	6	1 mark per correct answer				
54	540	5,400	54,000												
8.3	83	830	8,300												
b	<table border="1"> <tr> <td>3,876</td><td>387.6</td><td>38.76</td><td>3.876</td></tr> <tr> <td>123.9</td><td>12.39</td><td>1.239</td><td>0.1239</td></tr> <tr> <td>1,478.3</td><td>147.83</td><td>14.783</td><td>1.4783</td></tr> </table>	3,876	387.6	38.76	3.876	123.9	12.39	1.239	0.1239	1,478.3	147.83	14.783	1.4783	9	1 mark per correct answer
3,876	387.6	38.76	3.876												
123.9	12.39	1.239	0.1239												
1,478.3	147.83	14.783	1.4783												
7. Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³).															
a	49	1													
b	27	1													
c		4													
8. Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes.															
	True True False True	4													

question	answer	marks	notes										
9. Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.													
a	$70 \times 70 = 4900$ $(6 \times 5) + 80 = 110$ or (3×10) or (2×15) $6 \div 100 = 0.06$	3	1 mark per correct answer										
b i	£895	2	Award 1 mark for an incorrect answer but demonstration of a correct method.										
b ii	£100	2											
b iii	30	1											
10. Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.													
a	£10.75	2	Award 1 mark for an incorrect answer but demonstration of a correct method.										
b	<table><tr><td>£1.26</td><td>€1</td></tr><tr><td>£12.6(0)</td><td>€10</td></tr><tr><td>£37.8(0)</td><td>€30</td></tr><tr><td>£63</td><td>€50</td></tr><tr><td>£126</td><td>€100</td></tr></table>	£1.26	€1	£12.6(0)	€10	£37.8(0)	€30	£63	€50	£126	€100	4	Accept £12.6 or £12.60 Accept £37.8 or £37.80
£1.26	€1												
£12.6(0)	€10												
£37.8(0)	€30												
£63	€50												
£126	€100												
c	39.36 feet	1	Accept without feet										
d	24.6 feet	1											
		Total 70											