

Year 5 Programme of Study

Multiplication and Division

Statutory Requirements	Activity Sheet
Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.	Common Factors
Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.	Finding Prime Factors
Establish whether a number up to 100 is prime	Identifying Prime Numbers to 100
and recail prime numbers up to 19.	Recalling Prime Numbers 0-19
Multiply numbers up to 4 digits by a one or	Long Multiplication Practice – 3 Digits × 2 Digits
including long multiplication for 2-digit numbers.	Long Multiplication Practice – 4 Digits × 2 Digits
	Multiplication Grids
Multiply and divide numbers mentally drawing	Halving to Divide by 4, 8 and 16
	Doubling to Multiply by 4, 8 and 16
	Dividing Multiples of 10 by 1-Digit Numbers
	Dividing Multiples of 10
	Multiplying Multiples of 10 by 1-Digit Numbers
Divide numbers up to 4 digits by a 1-digit	Short Division
of short division and interpret remainders	Short Division Practice 4 Digits Divided By One Digit
	Division Word Problems – Interpreting Answers
Multiply and divide whole numbers and those	Multiplying Whole Numbers by 10
	Multiplying and Dividing by 100 and 1000
	Dividing Whole Numbers by 10
Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3).	Using and Recognising Square and Cube Numbers
Solve problems involving multiplication and	Missing Number Multiplication and Division
division, including using their knowledge of factors and multiples, squares and cubes.	Crack the Code with Factors, Multiples, Square Numbers and Cube Numbers
Solve problems involving addition, subtraction, multiplication and division and a combination of	Solving Problems Involving an Understanding of Equals
these, including understanding the meaning of the equals sign.	Understanding the Equals Sign
Solve problems involving multiplication and	Multiplication and Division Piggy Bank Problems
division, including scaling by simple fractions and problems involving simple rates.	Solving problems Involving Simple Rates

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	4
	6
	7
	8
× 2 Digits	9
× 2 Digits	10
	11
	12
	13
mbers	14
	15
Numbers	16
	18
d By 1 Digit	19
Answers	20
	22
	23
1000	24
	26
e Numbers	27
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Common Factors

Can you find the common factors of the following pairs of number?





4. 21 42



The common factors are: _____



The common factors are: _____







Finding Prime Factors

Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.

Every number has a unique set of prime factors. (Prime numbers can be multiplied together to make the number.) These can be found using a "Factor Tree". Find any factors of the number, then the factors of those numbers until you can't go any further – the resulting numbers will be the prime factors.



Identifying Prime Numbers to 100

Establish whether a number up to 100 is prime and recall prime numbers up to 19.

Use any method you wish to find all the prime numbers between **0 and 100**, and then check your answers. Did you make any mistakes? Can you see where you went wrong?

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
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Don't forget that not all odd numbers are prime numbers - use your times table knowledge to help you!



Recalling Prime Numbers 0-19

Establish whether a number up to 100 is prime and recall prime numbers up to 19.

Knowing the first few prime numbers can give you a real advantage when answering questions and calculating prime factors. Complete this sheet to deepen your familiarisation.

Allow yourself some time to look at the prime numbers. Look carefully for the odd numbers which are missing and think about why. When you are ready fold the sheet over on the fold line and complete the tasks below...

2, 3, 5, 7, 11, 13, 17, 19

A. Write out the prime numbers between 0-19 with your weaker hand!

B. Write the prime numbers out in descending order (highest to lowest).

C. Which three prime numbers are missing?

17

13, 7, 19, 2, 5, _____, ____, ____,

one

15

D. Circle the prime numbers.

fifteen

7

six

Multiplication-and-Division-Learning-from-Home - Learning From Home Workbook

19

Ж

nine

thirteen





5.			
	7	4	0
×		9	6

6.			
	3	6	2
×		5	8

9.			
	5	8	4
×		1	5

10.	 		
	8	5	1
×		8	9

13.			
	6	4	6
×		1	0

14.	 		
	7	0	9
×		1	7

3.					
		6	1	4	
×			1	8	

4.					
		9	6	9	
×			9	5	

7.						
		3	0	5		
×			7	1		

8.					
		3	7	0	
×			6	4	

11.					
		7	4	9	
×			9	8	

15.						
		9	1	4		
×			5	7		

12.						
		4	8	2		
×			2	3		

16.						
		7	1	8		
×			4	5		

Long Multiplication Practice -4 Digits × 2 Digits

Multiplication Grids

1.				
	2	1	9	0
×			6	9

4.					
		1	1	4	3
×				3	4
	4. ×	4. ×	4.	4. 1 1 × - - - - - - - - - - - - -	4. x 1 1 4 x

7.	 			
	1	4	6	2
×			7	0

10.	 			
	2	1	2	7
×			4	8



5.

×

8.

×

11.

x



5
6

9.	 			
	1	3	5	9
×			7	7

	 				-
12.					
	2	2	9	1	
×			4	0	
					-

	7				
2.	×	6000	900	70	5
	3				

1.

×

3.	×	8000	200	80	3
	5				

4.	×	5000	600	20	0	9.	×	1000	900	40	5
	5						7				

5.	×	2000	400	00	7	10.	×	5000	800	50	6
	9						5				

1.	6586 × 5	=
2.	6682 × 9	=
3.	9870 × 4	=
4.	1476 × 4	=
5.	4217 × 7	=

Multiplying 4-Digit Numbers by 1-Digit Numbers Using the Grid Method

6.	×	3000	900	20	2
	5				

7.	×	3000	300	40	9
	7				

8.	×	8000	400	80	2
	5				

6.	1815	×	6	=
7.	8292	×	8	=
8.	8940	×	8	=
9.	5512	×	5	=
10.	9706	×	8	=

Halving to Divide by 4, 8 and 16

Halve the starting number each time to divide the starting number by 4, 8 or 16.

Doubling to Multiply by 4, 8 and 16

Double the previous number each time to multiply the starting number by 4, 8 or 16.

	halve (÷2)	÷4	÷8	÷16	
848					21
864					76
224					63
1488					58
784					92
192					85
1072					91
480					95
528					40
320					47
3392					157
15 344					311
13 264					959
15 264					341
10 768					174
3376					724
7936					532
12 288					975
10 448					731
3952					826
107 216					1818
39 296					4759
126 480					1369

	Double (×2)	×4	×8	×16
21				
76				
63				
58				
92				
85				
91				
95				
40				
47				
157				
311				
959				
341				
174				
724				
532				
975				
731				
826				
1818				
4759				
1369				



Dividing Multiples of 10 by 1-Digit Numbers

Dividing Multiples of 10

16.	1200 ÷ 30 =
17.	1200 ÷ 60 =
18.	4500 ÷ 90 =
19.	1600 ÷ 20 =
20.	400 ÷ 10 =
21.	1200 ÷ 60 =
22.	2400 ÷ 80 =
23.	2400 ÷ 60 =
24.	1000 ÷ 20 =
25.	3200 ÷ 80 =
26.	2400 ÷ 80 =
27.	600 ÷ 20 =
28.	900 ÷ 30 =
29.	600 ÷ 30 =
30.	8100 ÷ 90 =



Multiplying Multiples of 10 by **1-Digit Numbers**

Multiplying Multiples of 10 by **1-Digit Numbers**

					\frown
16.	50	×	3	=	
17.	50	×	5	=	
18.	70	×	8	=	
19.	30	×	8	=	
20.	30	×	7	=	
21.	20	×	3	=	
22.	80	×	4	=	
23.	20	×	2	=	
24.	30	×	6	=	
25.	20	×	2	=	
26.	80	×	9	=	
27.	70	×	4	=	
28.	90	×	5	=	
29.	10	×	7	=	
30.	90	×	3	=	

Short Division

1.				
2	4	1		

2.					
8	2	5	7		

5.

7

5

4

5

3.						
9	3	9	9			
				-	-	

6.

9 8

6 7

Short Division Practice 4 Digits Divided By 1 Digit

Divide the numbers up to four digits by a one-digit number using the formal written method of short division. Some of the answers will have a remainder.

1.					
2	2	9	5	2	

2.					
4	6	8	0	8	

5.					
8	5	0	9	6	

6.					
9	1	3	3	2	
					ĺ
					Γ

9.					
4	7	6	4	3	

10).				
7	6	9	2	1	

14	۰.				
9	6	4	3	7	

4.						
5	2	1	4			
	4. 5	4. 5 2	4. 5 2 1	4. 5 2 1 4 5 2 1 4 6 6 6 6 7 7 7 7 8 6 7 7 9 7 7 7 9 7 7 7 9 7 7 7 9 7 7 7 9 7 7 7 9 7 7 7 9 7 7 7 9 7 7 7 9 7 7 7 9 7 7 7 9 7 7 7 9 7 7 7 9 7 7 7 9 7 7 7 9 7 7 7 9 7 7 7 9 7 7 7 9 7 7 7 </td <td>4. 5 2 1 4 5 2 1 4 6 6 6 6 6 6 6 6 7 6 6 6 7 6 6 6 8 6 6 6 9 6 6 6 10 6 6 6 10 6 6 6 10 6 6 6 10 6 6 6 11 6 6 6 12 6 6 6 13 6 6 6 14 6 6 6 15 6 6 6 16 6 6 6 6 17 6 6 6 6 16 7 6 7 6 17 7 7 7 7 18 7 7 7 7</td> <td>4. 5 2 1 4 </td>	4. 5 2 1 4 5 2 1 4 6 6 6 6 6 6 6 6 7 6 6 6 7 6 6 6 8 6 6 6 9 6 6 6 10 6 6 6 10 6 6 6 10 6 6 6 10 6 6 6 11 6 6 6 12 6 6 6 13 6 6 6 14 6 6 6 15 6 6 6 16 6 6 6 6 17 6 6 6 6 16 7 6 7 6 17 7 7 7 7 18 7 7 7 7	4. 5 2 1 4

7.					
5	4	3	3		

8.									
5	1	3	7						

9.				 	
7	4	3	9		

10.					
8	4	8	9		

	11.					
	1	1	3	4	2	

12.									
1	2	2	9	8					

						_					
13	8.						14	١.			
7	3	4	3	6			9	6	4	3	7

3.									
	2	7	6	9	4				

4.									
6	9	7	9	2					

7.									
8	9	6	8	8					

11.									
9	4	5	3	2					

8.								
5	3	4	6	2				

12.								
3	8	6	5	3				



Division Word Problems – Interpreting Answers

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

Complete the necessary calculation, and then decide if your answer needs to be rounded up or down.

1. Each glass of fresh apple juice made at the café requires the juice of four apples. If they have 391 apples, how many full glasses of juice can they make?



Bilal and Georgina are planting seeds. They have 863 to plant and they decide to plant 2. eight in each pot. How many pots will they need altogether?



It's a busy night at the hostel – beds are arranged four to a room and there are 279 guests 2. wishing to stay. How many rooms will the hotel need to ensure everyone gets a bed?



4. packet, how many full packets will they be able to make?



5. make bracelets for?



Each dragon boat team consists of nine members and each member must have two oars. If 6.



A factory produces 3361 chocolate cookies per day. If there are nine cookies in each

Aimee and Lucy want to make bracelets for everyone. They need nine big rubber bands to make each bracelet. They buy a box containing 1390 bands. How many friends can they

there are a total of 1561 oars on the river bank, how many dragon boat teams can be made?

Multiplying Whole Numbers by 10



Dividing Numbers by 10

16.	779	÷	10	=	
17.	398	÷	10	=	
18.	761	÷	10	=	
19.	797	÷	10	=	
20.	427	÷	10	=	
21.	402	÷	10	=	
22.	224	÷	10	=	
23.	998	÷	10	=	
24.	354	÷	10	=	
25.	336	÷	10	=	
26.	276	÷	10	=	
27.	384	÷	10	=	
28.	901	÷	10	=	
29.	711	÷	10	=	
30.	943	÷	10	=	

Multiplying and Dividing by 100 and 1000

Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.

Drive the lorries forward two spaces on a place value grid to multiply by 100 and three spaces to multiply them by 1000. Reverse them two spaces to divide by 100 and three spaces to divide them by 1000.



	÷ 100
18 000	
458 000	
7600	
950	
516	

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths



Dividing Whole Numbers by 10





Using and Recognising Square and Cube Numbers

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

Square Numbers

The product of a number multiplied by itself.

Can be illustrated as a square, e.g

 $2^2 = 2$ squared = $2 \times 2 = 4$

A. Complete the table.

1 ²	1 × 1	1
2 ²		4
3 ²	3 × 3	
	4 × 4	16
5 ²		
		36
	7 × 7	
8 ²		
10 ²		100

C. Calculate the missing numbers.

a) $7^2 + 4^3 =$	b) $8^2 + 10^2 =$	c) $5^3 - 5^2 =$
d) 5 ² + = 89	e) 8 ² = 17	f) $3^2 \times 2^3 =$
g) $3^2 + __= 5^2$	h) $6^3 \div 2^2 =$	i) 13 ² =
j) 10 ³ - 2 ² =	k) 100 ² =	l)2 = 144

Cube Numbers

The product of multiplying a digit by itself three times.

Can be illustrated as a cube, e.g.

 $2^3 = 2$ cubed = $2 \times 2 \times 2 = 8$



B. Complete the table.

1 ³	1 × 1 × 1	1
2 ³	2 × 2 × 2	
3 ³		27
	4 × 4 × 4	64
5 ³	5 × 5 × 5	
6 ³	6 × 6× 6	
		343
8 ³		512
	9 × 9 × 9	729
10 ³		

Missing Number Multiplication and Division

Estimate first, then calculate the missing number.

1	× 3 = 2661	21	÷ 2 = 1500
2	÷ 6 = 646	22	× 7 = 55 965
3	÷ 2 = 380	23	÷ 9 = 2585
4	× 3 = 2247	24	÷ 7 = 1659
5	× 2 = 1144	25	× 8 = 55 480
6	÷ 3 = 321	26	× 2 = 8856
7	× 4 = 2448	27	÷ 6 = 4251
8	÷ 2 = 874	28	× 9 = 11 196
9	÷ 5 = 685	29	÷ 4 = 3493
10	× 4 = 1864	30	÷ 7 = 6705
11	÷ 3 = 616		
12	× 7 = 4781	1.5	47 (
13	÷ 8 = 494		. ?>
14	× 4 = 1116		19 52
15	÷ 6 = 392		11
16	÷ 4 = 707		
17	× 6 = 22 812		
18	× 5 = 8460		
19	× 4 = 29 080		
20	× 9 = 10 287		
		(has	

22	× 7 = 55 965
23	÷ 9 = 2585
24	÷ 7 = 1659
25	× 8 = 55 480
26	×2 = 8856
27	÷ 6 = 4251
28	× 9 = 11 196
29	÷ 4 = 3493
30	÷7 = 6705



Crack the Code with Factors, Multiples, **Square Numbers and Cube Numbers**

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

Each answer to the questions below will be a number. Match the number to a letter in the grid below. If your answers are correct, your letters will spell out a phrase.

1	2	3	4	5	6	7	8	9	10	11	12	13
A	В	С	D	E	F	G	Н	I	J	K	L	М
14	15	16	17	18	19	20	21	22	23	24	25	26
N	0	Р	Q	R	S	Т	U	V	W	Х	Y	Z

Which number?	Notes/Number	Letter
This number is a multiple of seven and two and is a factor of 28.		
This number is a square number, a multiple of three and one more than a cube number.		
This number is a prime number and a factor of 36.		
When this number is squared, the answer is the largest square number in the list above.		
This prime number is > 19 and < 29.		
This number is a multiple of five and three.		
This multiple of nine is in between two prime numbers.		
This number is the difference between 5^2 and 6^2 .		

Solving Problems Involving an **Understanding of Equals**

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

Solve each problem and write out your answer as an equation – the first one has been done for you.

E.g. Dan saves 90p every week for 9 weeks. If Diana saves 45p per week, how long will it take her to save the same amount?



Mary needs 2200g of flour for her baking. She would need 22 of the packets containing 1. 100g but how many of the packets containing 440g would she need?



2. widths will he need to swim?



3.



4. each team need to make?



Sam and Ahmed are training for their 1000m swimming badge. Sam is going to swim 40 lengths of 25 metres. Ahmed wants to swim his distance in widths. How many 10 metre

Effie's sunflower grows 6cm a week for 23 weeks. Ethan's sunflower reaches exactly the same height, but it takes 46 weeks to grow. How much does his sunflower grow per week?

The Blue Team and the Red Team are having a water race. They each need to move 8000ml of water from one end of the course to the other. The Blue Team have a beaker which holds 200 ml. The Red Team have a beaker which holds 250ml of water. How many trips will

Understanding the Equals Sign

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

Answer these questions by remembering that = means 'the same as' or 'is equal to' and not 'the answer is...'.



Write some balanced equations using the = sign to show that both sides of your equation are equal. The number to make is given.

1.	24	
	=	
2.	50	
	=	
3.	76	
	=	
4.	172	
	=	

Multiplication and Division Piggy Bank Problems

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





C. How many of each coin <u>could be</u> in the piggy bank?



D. How do these circumstances affect the amounts in these savers' piggy banks?

Sonia gives half of her money to Krystal.

They both save until they have doubled their money.

They add their money together and share it between themselves equally.



Solving Problems Involving Simple Rates

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

1. If a car travels 300 miles in six hours, how far would we expect it to travel in two hours?



A teacher can mark seven pieces of work every ten minutes. How many could they mark in 2. an hour and a half?

3. The school kitchen makes two meals every five minutes. How long will they need to prepare food for the 120 children eating dinner?



4. If a rocket uses 20 000 litres of fuel to fly for two minutes, how much fuel will it burn in five and a half minutes?



5. Who is driving the fastest on average?



6. A supermarket has two offers on free range eggs: 6 for £1.20 and 15 for £3.30 Which is the best deal?



Tamsin runs 12 miles in two hours and Julie runs 6.5 miles in an hour. 7. Who is running faster?

				•											
	- - - - -														
••••••	••••••	••••••	••••••	•••••••	••••••		••••••	•••••••					 	 	

If an object has a velocity of five kilometres per minute, how long will it take to 8. travel 500km?

-										
3										
1										
3										
÷										
3										
÷	 									
3										:
-										
÷.										
3										
3										:
-										
÷	 	 ••••••	÷							
3										
3									:	
1										
<u>.</u>	 				 	 				

Ben drives 210 kilometres in three hours, and Darius drives 300 kilometres in five hours.









