

Multiplication and Division

Learning From Home



Workbook

Year 5/6 Unit of Work

Multiplication and Division

Australian Curriculum	Worksheet
Solve problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental, written strategies and appropriate digital technologies (ACMNA100)	Multiplication Grids Doubling to Multiply by 4, 8 and 16 Multiplying Multiples of 10 by 1-Digit Numbers
Solve problems involving division by a one-digit number, including those that result in a remainder (ACMNA101)	Halving to Divide by 4, 8 and 16 Short Division Short Division Practice 4 Digits Divided by 1 Digit Division Word Problems – Interpreting Answers
<p>Exploring factors and multiples using number sequences (ACMNA098)</p> <p>Representing composite numbers as a product of their prime factors and using this form to simplify calculations by cancelling common primes (ACMNA122)</p> <p>Understanding that if a number is divisible by a composite number then it is also divisible by the prime factors of that number (ACMNA122)</p>	Common Factors Find Prime Factors Identifying Prime Numbers to 100 Recalling Prime Numbers 0-19
Using simple divisibility (ACMNA098)	Dividing Multiples of 10 by 1-Digit Numbers Dividing Multiples of 10
Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers (ACMNA123)	Long Multiplication Practice 3 Digits x 2 Digits Long Multiplication Practice 4 Digits x 2 Digits Missing Number Multiplication and Division Solving Problems Involving an Understand of equals
Multiply decimals by whole numbers and perform divisions by non-zero whole numbers where the results are terminating decimals, with and without digital technologies (ACMNA129)	Multiplying and Dividing Decimals by 10, 100, and 1000
Multiply and divide decimals by powers of 10 (ACMNA130)	Multiplying Whole Numbers by 10 Dividing Numbers by 10 Multiplying and Dividing by 100 and 1000 Dividing Whole Numbers by 10

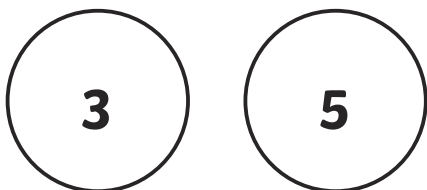
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Common Factors

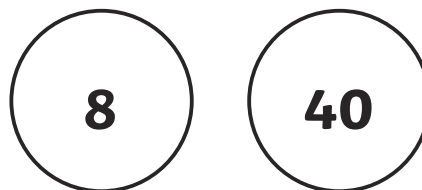
Can you find the common factors of the following pairs of numbers?

1.



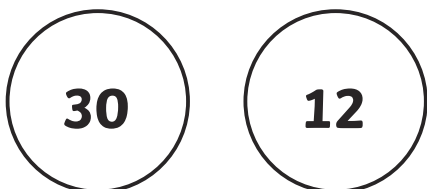
The common factors are: _____

2.



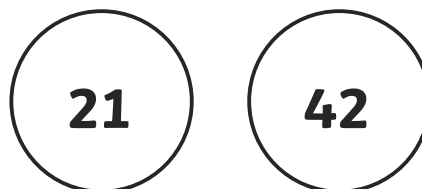
The common factors are: _____

3.



The common factors are: _____

4.



The common factors are: _____

5.



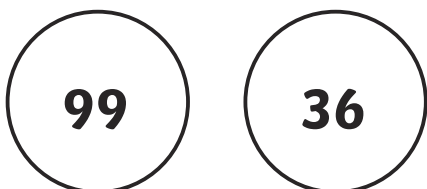
The common factors are: _____

6.



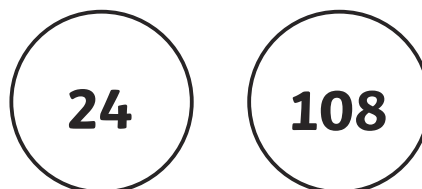
The common factors are: _____

7.



The common factors are: _____

8.



The common factors are: _____

Can you find the common factors of the following trios of numbers?

1.

10

25

75

The common factors are: _____

2.

6

42

84

The common factors are: _____

3.

28

36

64

The common factors are: _____

4.

27

54

90

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.

<p>A.</p> <pre> 48 / \ 8 6 / \ / \ 4 2 3 2 / \ 2 2 </pre>	<p>B.</p> <pre> 24 / \ 6 4 / \ 2 3 </pre>	<p>c.</p> <pre> 44 / \ 11 4 </pre>
<p>$2 \times 2 \times 2 \times 3 \times 2 = 48$</p>		
<p>D.</p> <p style="text-align: center;">42</p>	<p>E.</p> <p style="text-align: center;">60</p>	<p>F.</p> <p style="text-align: center;">88</p>
<p>G.</p> <p style="text-align: center;">96</p>	<p>H.</p> <p style="text-align: center;">72</p>	<p>I.</p> <p style="text-align: center;">105</p>

Try a larger number!



<p>J.</p> <p style="text-align: center;">462</p>

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?

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

D. Circle the prime numbers.

six

fifteen

7

17

one

15

19



nine

thirteen



Long Multiplication Practice – 3 Digits × 2 Digits

1.

		1	6	1
×			2	3
<hr/>				
<hr/>				

2.

		2	3	2
×			2	6
<hr/>				
<hr/>				

3.

		6	1	4
×			1	8
<hr/>				
<hr/>				

4.

		9	6	9
×			9	5
<hr/>				
<hr/>				

5.

		7	4	0
×			9	6
<hr/>				
<hr/>				

6.

		3	6	2
×			5	8
<hr/>				
<hr/>				

7.

		3	0	5
×			7	1
<hr/>				
<hr/>				

8.

		3	7	0
×			6	4
<hr/>				
<hr/>				

9.

		5	8	4
×			1	5
<hr/>				
<hr/>				

10.

		8	5	1
×			8	9
<hr/>				
<hr/>				

11.

		7	4	9
×			9	8
<hr/>				
<hr/>				

12.

		4	8	2
×			2	3
<hr/>				
<hr/>				

13.

		6	4	6
×			1	0
<hr/>				
<hr/>				

14.

		7	0	9
×			1	7
<hr/>				
<hr/>				

15.

		9	1	4
×			5	7
<hr/>				
<hr/>				

16.

		7	1	8
×			4	5
<hr/>				
<hr/>				

Long Multiplication Practice – 4 Digits × 2 Digits

1.

		2	1	9	0
×				6	9
<hr/>					

2.

		1	3	4	2
×				5	2
<hr/>					

3.

		1	5	2	1
×				7	3
<hr/>					

4.

		1	1	4	3
×				3	4
<hr/>					

5.

		2	4	6	8
×				2	7
<hr/>					

6.

		1	8	9	5
×				4	6
<hr/>					

7.

		1	4	6	2
×				7	0
<hr/>					

8.

		1	2	3	9
×				1	9
<hr/>					

9.

		1	3	5	9
×				7	7
<hr/>					

10.

		2	1	2	7
×				4	8
<hr/>					

11.

		1	9	2	0
×				1	2
<hr/>					

12.

		2	2	9	1
×				4	0
<hr/>					

Multiplication Grids

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

1.

×	6000	100	30	9
7				

6.

×	3000	900	20	2
5				

2.

×	6000	900	70	5
3				

7.

×	3000	300	40	9
7				

3.

×	8000	200	80	3
5				

8.

×	8000	400	80	2
5				

4.

×	5000	600	20	0
5				

9.

×	1000	900	40	5
7				

5.

×	2000	400	00	7
9				

10.

×	5000	800	50	6
5				

1. $6586 \times 5 =$

6. $1815 \times 6 =$

2. $6682 \times 9 =$

7. $8292 \times 8 =$

3. $9870 \times 4 =$

8. $8940 \times 8 =$

4. $1476 \times 4 =$

9. $5512 \times 5 =$

5. $4217 \times 7 =$

10. $9706 \times 8 =$

Halving to Divide by 4, 8 and 16

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

	halve ($\div 2$)	$\div 4$	$\div 8$	$\div 16$
848				
864				
224				
1488				
784				
192				
1072				
480				
528				
320				
3392				
15 344				
13 264				
15 264				
10 768				
3376				
7936				
12 288				
10 448				
3952				
107 216				
39 296				
126 480				

Doubling to Multiply by 4, 8 and 16

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

	Double ($\times 2$)	$\times 4$	$\times 8$	$\times 16$
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

- $250 \div 5 =$
- $100 \div 5 =$
- $80 \div 1 =$
- $720 \div 8 =$
- $180 \div 9 =$
- $70 \div 1 =$
- $420 \div 6 =$
- $60 \div 6 =$
- $200 \div 4 =$
- $270 \div 3 =$
- $450 \div 5 =$
- $60 \div 3 =$
- $240 \div 8 =$
- $300 \div 6 =$
- $150 \div 5 =$
- $50 \div 1 =$
- $200 \div 4 =$
- $120 \div 2 =$
- $60 \div 3 =$
- $180 \div 3 =$
- $200 \div 5 =$
- $90 \div 3 =$
- $250 \div 5 =$
- $630 \div 7 =$
- $120 \div 6 =$
- $560 \div 8 =$
- $40 \div 4 =$
- $160 \div 8 =$
- $810 \div 9 =$
- $40 \div 4 =$

Dividing Multiples of 10

1. $4000 \div 50 =$
2. $3600 \div 60 =$
3. $1800 \div 90 =$
4. $400 \div 20 =$
5. $1000 \div 20 =$
6. $1600 \div 20 =$
7. $1400 \div 70 =$
8. $1800 \div 60 =$
9. $1800 \div 90 =$
10. $2500 \div 50 =$
11. $4500 \div 90 =$
12. $1800 \div 60 =$
13. $300 \div 10 =$
14. $2800 \div 70 =$
15. $1000 \div 50 =$
16. $1200 \div 30 =$
17. $1200 \div 60 =$
18. $4500 \div 90 =$
19. $1600 \div 20 =$
20. $400 \div 10 =$
21. $1200 \div 60 =$
22. $2400 \div 80 =$
23. $2400 \div 60 =$
24. $1000 \div 20 =$
25. $3200 \div 80 =$
26. $2400 \div 80 =$
27. $600 \div 20 =$
28. $900 \div 30 =$
29. $600 \div 30 =$
30. $8100 \div 90 =$

Multiplying Multiples of 10 by 1-Digit Numbers

1. $80 \times 7 =$
2. $10 \times 8 =$
3. $70 \times 1 =$
4. $50 \times 3 =$
5. $70 \times 5 =$
6. $50 \times 5 =$
7. $70 \times 7 =$
8. $60 \times 2 =$
9. $20 \times 8 =$
10. $90 \times 2 =$
11. $30 \times 2 =$
12. $60 \times 5 =$
13. $50 \times 2 =$
14. $70 \times 9 =$
15. $50 \times 6 =$
16. $30 \times 2 =$
17. $90 \times 3 =$
18. $80 \times 1 =$
19. $70 \times 8 =$
20. $60 \times 2 =$
21. $80 \times 3 =$
22. $40 \times 7 =$
23. $10 \times 2 =$
24. $60 \times 3 =$
25. $10 \times 2 =$
26. $30 \times 9 =$
27. $10 \times 4 =$
28. $40 \times 2 =$
29. $80 \times 7 =$
30. $30 \times 3 =$

Multiplying Multiples of 10 by 1-Digit Numbers

- $40 \times 8 =$
- $20 \times 5 =$
- $70 \times 2 =$
- $60 \times 4 =$
- $80 \times 4 =$
- $20 \times 7 =$
- $80 \times 7 =$
- $40 \times 9 =$
- $20 \times 8 =$
- $60 \times 2 =$
- $90 \times 2 =$
- $80 \times 5 =$
- $70 \times 2 =$
- $60 \times 9 =$
- $20 \times 6 =$
- $50 \times 3 =$
- $50 \times 5 =$
- $70 \times 8 =$
- $30 \times 8 =$
- $30 \times 7 =$
- $20 \times 3 =$
- $80 \times 4 =$
- $20 \times 2 =$
- $30 \times 6 =$
- $20 \times 2 =$
- $80 \times 9 =$
- $70 \times 4 =$
- $90 \times 5 =$
- $10 \times 7 =$
- $90 \times 3 =$

Short Division

1.

2	4	1					

2.

8	2	5	7				

3.

9	3	9	9				

4.

5	2	1	4				

5.

7	5	4	5				

6.

9	8	6	7				

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			

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

3.

4	9	6	7	2

4.

6	9	7	9	2

5.

8	5	0	9	6

6.

9	1	3	3	2

7.

8	9	6	8	8

8.

5	3	4	6	2

9.

4	7	6	4	3

10.

7	6	9	2	1

11.

9	4	5	3	2

12.

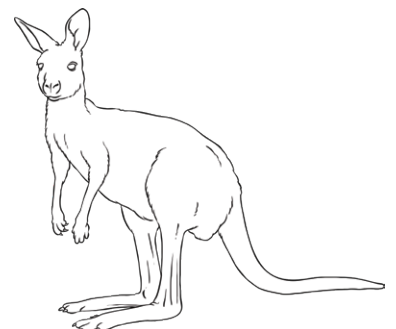
3	8	6	5	3

13.

7	3	4	3	6

14.

9	6	4	3	7



4. A factory produces 3361 chocolate cookies per day. If there are nine cookies in each packet, how many full packets will they be able to make?

Answer:

5. 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 make bracelets for?

Answer:

6. Each dragon boat team consists of nine members and each member must have two oars. If there are a total of 1561 oars on the river bank, how many dragon boat teams can be made?

Answer:

Multiplying Whole Numbers by 10

1. $82 \times 10 =$
2. $66 \times 10 =$
3. $14 \times 10 =$
4. $58 \times 10 =$
5. $42 \times 10 =$
6. $56 \times 10 =$
7. $63 \times 10 =$
8. $42 \times 10 =$
9. $54 \times 10 =$
10. $93 \times 10 =$
11. $60 \times 10 =$
12. $53 \times 10 =$
13. $32 \times 10 =$
14. $79 \times 10 =$
15. $37 \times 10 =$
16. $816 \times 10 =$
17. $711 \times 10 =$
18. $287 \times 10 =$
19. $224 \times 10 =$
20. $567 \times 10 =$
21. $302 \times 10 =$
22. $879 \times 10 =$
23. $440 \times 10 =$
24. $379 \times 10 =$
25. $231 \times 10 =$
26. $488 \times 10 =$
27. $507 \times 10 =$
28. $547 \times 10 =$
29. $319 \times 10 =$
30. $179 \times 10 =$












Dividing Numbers by 10












1. $79 \div 10 =$
2. $87 \div 10 =$
3. $75 \div 10 =$
4. $23 \div 10 =$
5. $43 \div 10 =$
6. $26 \div 10 =$
7. $43 \div 10 =$
8. $39 \div 10 =$
9. $69 \div 10 =$
10. $13 \div 10 =$
11. $45 \div 10 =$
12. $98 \div 10 =$
13. $95 \div 10 =$
14. $71 \div 10 =$
15. $87 \div 10 =$
16. $779 \div 10 =$
17. $398 \div 10 =$
18. $761 \div 10 =$
19. $797 \div 10 =$
20. $427 \div 10 =$
21. $402 \div 10 =$
22. $224 \div 10 =$
23. $998 \div 10 =$
24. $354 \div 10 =$
25. $336 \div 10 =$
26. $276 \div 10 =$
27. $384 \div 10 =$
28. $901 \div 10 =$
29. $711 \div 10 =$
30. $943 \div 10 =$

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.

× 1000	× 100	
 		12
		157
		1425
		4.5
		0.25

	$\div 100$	$\div 1000$
18 000		
		
458 000		
7600		
950		
516		

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

Dividing Whole Numbers by 10

- $820 \div 10 = \boxed{}$
- $630 \div 10 = \boxed{}$
- $170 \div 10 = \boxed{}$
- $950 \div 10 = \boxed{}$
- $210 \div 10 = \boxed{}$
- $930 \div 10 = \boxed{}$
- $560 \div 10 = \boxed{}$
- $530 \div 10 = \boxed{}$
- $440 \div 10 = \boxed{}$
- $180 \div 10 = \boxed{}$
- $340 \div 10 = \boxed{}$
- $940 \div 10 = \boxed{}$
- $230 \div 10 = \boxed{}$
- $460 \div 10 = \boxed{}$
- $150 \div 10 = \boxed{}$
- $7200 \div 10 = \boxed{}$
- $3680 \div 10 = \boxed{}$
- $7950 \div 10 = \boxed{}$
- $7410 \div 10 = \boxed{}$
- $2800 \div 10 = \boxed{}$
- $3030 \div 10 = \boxed{}$
- $5520 \div 10 = \boxed{}$
- $3650 \div 10 = \boxed{}$
- $2290 \div 10 = \boxed{}$
- $7450 \div 10 = \boxed{}$
- $7650 \div 10 = \boxed{}$
- $2680 \div 10 = \boxed{}$
- $8610 \div 10 = \boxed{}$
- $5070 \div 10 = \boxed{}$
- $7300 \div 10 = \boxed{}$

Missing Number Multiplication and Division

Estimate first, then calculate the missing number.

1. _____ $\times 3 = 2661$

21. _____ $\div 2 = 1500$

2. _____ $\div 6 = 646$

22. _____ $\times 7 = 55\,965$

3. _____ $\div 2 = 380$

23. _____ $\div 9 = 2585$

4. _____ $\times 3 = 2247$

24. _____ $\div 7 = 1659$

5. _____ $\times 2 = 1144$

25. _____ $\times 8 = 55\,480$

6. _____ $\div 3 = 321$

26. _____ $\times 2 = 8856$

7. _____ $\times 4 = 2448$

27. _____ $\div 6 = 4251$

8. _____ $\div 2 = 874$

28. _____ $\times 9 = 11\,196$

9. _____ $\div 5 = 685$

29. _____ $\div 4 = 3493$

10. _____ $\times 4 = 1864$

30. _____ $\div 7 = 6705$

11. _____ $\div 3 = 616$

12. _____ $\times 7 = 4781$

13. _____ $\div 8 = 494$

14. _____ $\times 4 = 1116$

15. _____ $\div 6 = 392$

16. _____ $\div 4 = 707$

17. _____ $\times 6 = 22\,812$

18. _____ $\times 5 = 8460$

19. _____ $\times 4 = 29\,080$

20. _____ $\times 9 = 10\,287$

45 47 63
19 32
11 7
89
72

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

$$90 \times 9 = 810 - \$8.10$$

$$810 \div 45 = 18$$

$$\text{Equation: } 90 \times 9 = 45 \times 18$$

Answer: 18 weeks

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


Answer:

Multiplication and Division

Piggy Bank Problems


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

A. How many of each coin is in the piggy bank?




5c coin _____

85c



5c coin _____


\$1.45




20c coin _____

\$7.60


B. How many of each coin is in the piggy bank?



\$1.70 20




\$9.20 50




\$10.60 16


C. How many of each coin could be in the piggy bank?



\$1.65



\$3.05



\$35.10

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



Sonia
\$8.20



Krystal
\$2.70

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.

Multiplying and Dividing Decimals by 10, 100 and 1000

Aim: Multiply and Divide decimal numbers by 10, 100 and 1000

Multiply the following numbers by 10, 100 and 1000 to complete the table.

	x 10	x 100	x 1000
5.7			
23.02			
0.92			
0.306			
24.67			

Divide the following numbers by 10, 100 and 1000 to complete the table.

	÷ 10	÷ 100	÷ 1000
43			
219			
703			
64.8			
2560			

Complete the following table.

	x 10	÷ 10	÷ 100
507			
17.6			
			0.063
	2037		
		0.193	

Aim: Multiply and Divide decimal numbers by 10, 100 and 1000

Multiply the following numbers by 10, 100 and 1000 to complete the table.

	x 10	x 100	x 1000
4.02			
0.045			
34.094			
209.817			
0.006			

Divide the following numbers by 10, 100 and 1000 to complete the table.

	÷ 10	÷ 100	÷ 1000
56.9			
209			
4.56			
709.6			
0.072			

Complete the following table.

	x 1000	x 10	÷ 100
607			
4 901			
		0.8	
	17 809		
			0.37

