

Varied Fluency

Step 4: Efficient Multiplication

National Curriculum Objectives:

Mathematics Year 4: (4C6a) [Recall multiplication and division facts for multiplication tables up to \$12 \times 12\$](#)

Mathematics Year 4: (4C6b) [Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers](#)

Mathematics Year 4: (4C6c) [Recognise and use factor pairs and commutativity in mental calculations](#)

Mathematics Year 4: (4C8) [Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as \$n\$ objects are connected to \$m\$ objects](#)

Differentiation:

Developing Questions to support using factors, partitioning, addition and subtraction to efficiently multiply 2-digit numbers less than 20 by 2, 3, 4, and 5; where the 2-digit numbers can be partitioned into known facts up to $12x$.

Expected Questions to support using factors, partitioning, addition and subtraction to efficiently multiply 2-digit numbers more than 20 by 6, 7, 8 and 9; where the 2-digit numbers can be partitioned more than once into known facts up to $12x$.

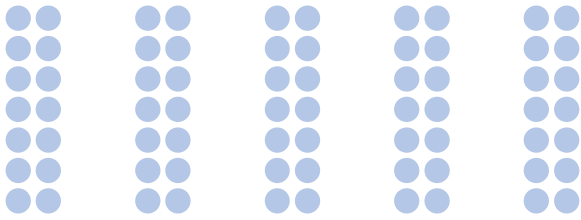
Greater Depth Questions to support using factors, partitioning, addition and subtraction to efficiently multiply 2-digit numbers by 6, 7, 8, 9, 10, 11 and 12 using known facts

More [Year 4 Multiplication and Division](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Efficient Multiplication

1a. Kara is using an array to calculate 14×5 . Which multiplication fact matches the array below?



- a. $2 \times 5 \times 5$ b. $7 \times 2 \times 5$ c. $5 \times 7 \times 3$

Calculate the answer.



VF

Efficient Multiplication

1b. Jack is using an array to calculate 15×3 . Which multiplication fact matches the array below?



- a. $3 \times 5 \times 5$ b. $3 \times 5 \times 4$ c. $3 \times 5 \times 3$

Calculate the answer.



VF

2a. Use partitioning to efficiently multiply 18×5 .

$$10 \times 5 = \square$$

$$5 \times 5 = \square$$

$$3 \times 5 = \square$$

So, $18 \times 5 = \square$



VF

2b. Use partitioning to efficiently multiply 16×4 .

$$10 \times 4 = \square$$

$$5 \times 4 = \square$$

$$1 \times 4 = \square$$

So, $16 \times 4 = \square$



VF

3a. Match the multiplication to the efficient calculation and work out the answer.

a. 19×3

$12 \times 4 + 5 \times 4$

b. 17×4

$20 \times 3 - 1 \times 3$

c. 18×5

$20 \times 5 - 2 \times 5$



VF

3b. Match the multiplication to the efficient calculation and work out the answer.

a. 13×5

$20 \times 5 - 1 \times 5$

b. 18×4

$10 \times 5 + 3 \times 5$

c. 19×5

$20 \times 4 - 2 \times 4$



VF

4a. True or false?

$$90 = 16 \times 5$$



VF

4b. True or false?

$$64 = 15 \times 4$$



VF

Efficient Multiplication

5a. Josh is using written representations to calculate 25×6 . Which multiplication fact matches the representation below?

5×5	5×5	5×5
5×5	5×5	5×5

- a. $5 \times 6 \times 6$ b. $6 \times 5 \times 6$ c. $5 \times 5 \times 6$

Calculate the answer.



VF

Efficient Multiplication

5b. Amy is using written representations to calculate 35×8 . Which multiplication fact matches the representation below?

7×5	7×5	7×5	7×5
7×5	7×5	7×5	7×5

- a. $7 \times 5 \times 6$ b. $7 \times 5 \times 8$ c. $7 \times 5 \times 5$

Calculate the answer.



VF

6a. Use partitioning to efficiently multiply 34×8 .

10	x	8	=		
10	x	8	=		
10	x	8	=		
4	x	8	=		
So,	34	x	8	=	



VF

6b. Use partitioning to efficiently multiply 39×7 .

10	x	7	=		
10	x	7	=		
10	x	7	=		
9	x	7	=		
So,	39	x	7	=	



VF

7a. Match the multiplication to the efficient calculation and work out the answer.

a. 21×6	$40 \times 9 - 2 \times 9$
b. 29×4	$30 \times 4 - 1 \times 4$
c. 38×9	$20 \times 6 + 1 \times 6$



VF

7b. Match the multiplication to the efficient calculation and work out the answer.

a. 31×8	$30 \times 6 - 3 \times 6$
b. 27×6	$50 \times 7 - 1 \times 7$
c. 49×7	$30 \times 8 + 1 \times 8$



VF

8a. True or false?

$$294 = 42 \times 7$$



VF

8b. True or false?

$$377 = 43 \times 9$$



VF

Efficient Multiplication

9a. Amina is using written representations to calculate 54×7 . Which multiplication fact matches the representation below?

54	54	54	54
54	54	54	

- a. $8 \times 6 \times 7$ b. $9 \times 6 \times 7$ c. $6 \times 7 \times 7$

Calculate the answer.



VF

Efficient Multiplication

9b. Max is using written representations to calculate 48×8 . Which multiplication fact matches the representation below?

48	48	48	48
48	48	48	48

- a. $4 \times 8 \times 8$ b. $9 \times 6 \times 8$ c. $8 \times 6 \times 8$

Calculate the answer.



VF

10a. Use partitioning to efficiently multiply 67×12 . Use the space below.



VF

10b. Use partitioning to efficiently multiply 89×7 . Use the space below.



VF

11a. Match the multiplication to the efficient calculation and work out the answer.

a. 59×8	Sixty times six add one times six.
b. 61×6	$60 \times 8 - 1 \times 8$
c. 78×4	Eighty times four minus two times four.



VF

11b. Match the multiplication to the efficient calculation and work out the answer.

a. 91×6	$90 \times 8 - 2 \times 8$
b. 49×11	Ninety times six add one times six.
c. 88×8	$50 \times 11 - 1 \times 11$



VF

12a. True or false?

$$728 = 40 \times 9 + 40 \times 9 + 2 \times 9$$



VF

12b. True or false?

$$576 = 50 \times 9 + 10 \times 9 + 4 \times 9$$



VF

Varied Fluency Efficient Multiplication

Developing

1a. B. $7 \times 2 \times 5 = 70$

2a. $10 \times 5 = 50$; $5 \times 5 = 25$; $3 \times 5 = 15$; $18 \times 5 = 90$

3a. $A = 20 \times 3 - 1 \times 3 = 57$; $B = 12 \times 4 + 5 \times 4 = 68$; $C = 20 \times 5 - 2 \times 5 = 90$

4a. False, it is 80.

Expected

5a. C. $5 \times 5 \times 6 = 150$

6a. $10 \times 8 = 80$; $10 \times 8 = 80$; $10 \times 8 = 80$; $4 \times 8 = 32$; $34 \times 8 = 272$

7a. $A = 20 \times 6 + 1 \times 6 = 126$; $B = 30 \times 4 - 1 \times 4 = 116$; $C = 40 \times 9 - 2 \times 9 = 342$

8a. True

Greater Depth

9a. B. $9 \times 6 \times 7 = 378$

10a. Various answers, for example:
 $60 \times 10 = 600$; $60 \times 2 = 120$; $7 \times 10 = 70$; $7 \times 2 = 14$; $600 + 120 + 70 + 14 = 804$ or 30×10 ; 300 ; 30×10 ; 300 ; $30 \times 2 = 60$; $30 \times 2 = 60$; $7 \times 10 = 70$; $7 \times 2 = 14$; $300 + 300 + 60 + 60 + 70 + 14 = 804$

11a. $A = 60 \times 8 - 1 \times 8 = 472$; B = Sixty times six add one times six = 366; C = Eighty times four minus two times four = 312

12a. False, it is 738.

Varied Fluency Efficient Multiplication

Developing

1b. C. $3 \times 5 \times 3 = 45$

2b. $10 \times 4 = 40$; $5 \times 4 = 20$; $1 \times 4 = 4$; $16 \times 4 = 64$

3b. $A = 10 \times 5 + 3 \times 5 = 65$; $B = 20 \times 4 - 2 \times 4 = 72$; $C = 20 \times 5 - 1 \times 5 = 95$

4b. False, it is 60.

Expected

5b. B. $7 \times 5 \times 8 = 280$

6b. $10 \times 7 = 70$; $10 \times 7 = 70$; $10 \times 7 = 70$; $9 \times 7 = 63$; $39 \times 7 = 273$

7b. $A = 30 \times 8 + 1 \times 8 = 248$; $B = 30 \times 6 - 3 \times 6 = 162$; $C = 50 \times 7 - 1 \times 7 = 343$

8b. False, it is 387.

Greater Depth

9b. C. $8 \times 6 \times 8 = 384$

10b. Various answers, for example:
 $80 \times 7 = 560$; $9 \times 7 = 63$; $560 + 63 = 623$ or $40 \times 7 = 280$; $40 \times 7 = 280$; $9 \times 7 = 63$; $280 + 280 + 63 = 623$ or $50 \times 7 = 350$; $30 \times 7 = 210$; $9 \times 7 = 63$; $350 + 210 + 63 = 623$

11b. A = Ninety times six add one times six = 546; B = $50 \times 11 - 1 \times 11 = 539$; C = $90 \times 8 - 2 \times 8 = 704$

12b. True