



3 Multiplication tables

Target

- To recall multiplication facts up to 10×10 , such as 9×7

Current understanding

Pupils should already be able to:

- recall multiplication facts in the 2, 5 and 10 times tables.

Common errors

Pupils may calculate:

- $8 \times 7 = 54$ instead of 56 (to avoid this, think $7 \times 7 = 49$, and 7 more is 56);
- $0 \times 9 = 9$ instead of 0.

What to do

Vocabulary

multiply
multiplication
product (the product of 6 and 7 is $6 \times 7 = 42$)

What you need

Flash cards for key multiplication facts

Written lists of tables (sheet 3.1)

Tricky facts (sheet 3.2)

Make sure that the pupil understands the target.

To find a starting point, check what the pupil already knows. The suggested order for learning the tables is 2, 10, 5, 3, 4, 6, 8, 9, 7.

Concentrate initially on **one table** at a time. Give the pupil a copy of the table, cut from **sheet 3.1**.

- Chant the table, e.g. $1 \times 8 = 8$, $2 \times 8 = 16$, $3 \times 8 = 24$, ...
- Chant the sequence, e.g. 7, 14, 21, 28, ...
- Highlight square numbers, e.g. $9 \times 9 = 81$
- Build up understanding that $3 \times 4 = 4 \times 3$ etc.

To check each table

Prepare flash cards or write down key facts, for example:

$$8 \times 7 = ?$$

$$\square \times 7 = 42$$

Ask table facts in a jumbled order.

To check several tables

Prepare random lists of multiplication facts for the pupil either to answer orally or to complete in a timed session.

Strategies

Help the pupil to reduce the work by using **links between tables**.

- The 2, 5 and 10 times tables should already be known.
- The 3 times table needs to be learned.

- The 4 times table is double the 2 times table.
- The 6 times table is double the 3 times table.
- The 8 times table is double the 4 times table.
- The 9 times table follows from the 3 times table.
- The 7 times table needs to be learned, but because $3 \times 7 = 7 \times 3$, much of it is already done when learning other tables.

Encourage the pupil to **work out the ones they don't know from the ones they do**. For example: '*I don't know 8×6 , but $6 \times 6 = 36$ and $2 \times 6 = 12$, so $8 \times 6 = 48$.*'

Use **doubling**. For example:

7×8 Double 7 to get 14 (7×2)

Double 14 to get 28 (7×4)

Double 28 to get 56 (7×8)

Sheet 3.2 may help the pupil **learn the tricky tables**; give them a copy when they think they know most of the tables.

At the end, use the key questions to check that the pupil has reached the target and is confident.

Key questions

$$8 \times 7$$

$$7 \times 6$$

$$9 \times 8$$

How many 8s are in 48?

I have 60p. How many 7p pens can I buy?

Did you know the answer?

How did you work it out?

Multiplication tables

$1 \times 3 = 3$ $2 \times 3 = 6$ $3 \times 3 = 9$ $4 \times 3 = 12$ $5 \times 3 = 15$ $6 \times 3 = 18$ $7 \times 3 = 21$ $8 \times 3 = 24$ $9 \times 3 = 27$ $10 \times 3 = 30$	$1 \times 4 = 4$ $2 \times 4 = 8$ $3 \times 4 = 12$ $4 \times 4 = 16$ $5 \times 4 = 20$ $6 \times 4 = 24$ $7 \times 4 = 28$ $8 \times 4 = 32$ $9 \times 4 = 36$ $10 \times 4 = 40$	$1 \times 6 = 6$ $2 \times 6 = 12$ $3 \times 6 = 18$ $4 \times 6 = 24$ $5 \times 6 = 30$ $6 \times 6 = 36$ $7 \times 6 = 42$ $8 \times 6 = 48$ $9 \times 6 = 54$ $10 \times 6 = 60$
$1 \times 7 = 7$ $2 \times 7 = 14$ $3 \times 7 = 21$ $4 \times 7 = 28$ $5 \times 7 = 35$ $6 \times 7 = 42$ $7 \times 7 = 49$ $8 \times 7 = 56$ $9 \times 7 = 63$ $10 \times 7 = 70$	$1 \times 8 = 8$ $2 \times 8 = 16$ $3 \times 8 = 24$ $4 \times 8 = 32$ $5 \times 8 = 40$ $6 \times 8 = 48$ $7 \times 8 = 56$ $8 \times 8 = 64$ $9 \times 8 = 72$ $10 \times 8 = 80$	$1 \times 9 = 9$ $2 \times 9 = 18$ $3 \times 9 = 27$ $4 \times 9 = 36$ $5 \times 9 = 45$ $6 \times 9 = 54$ $7 \times 9 = 63$ $8 \times 9 = 72$ $9 \times 9 = 81$ $10 \times 9 = 90$

Tricky facts

×	1	2	3	4	5	6	7	8	9	10
1	Easy!									
2	Easy!	Square, double								
3	Easy!	Double	Square							
4	Easy!	Double	Double double	Square						
5	Easy!	Easy double	Easy!	Easy!	Easy square					
6	Easy!	Double	Learn	Double double	Easy!	Square				
7	Easy!	Double	Learn	Double double	Easy!	42	Square			
8	Easy!	Double	Learn	Double double	Easy!	48	56	Square		
9	Easy!	Double	Learn	Double double	Easy!	54	63	72	Square	
10	Easy!	Easy double	Easy!	Easy!	Easy!	Easy!	Easy!	Easy!	Easy!	Easy square

Remember: $0 \times 7 = 0$