

## 'Learning by Heart'

Developing children's knowledge of mathematical facts so that they know them 'by heart' is a valuable tool to support calculation strategies, and also helps to build confidence. Regular practice is needed to secure knowledge and help children instantly recall facts.

We encourage children to think 'Can I do this in my head?' Having a range of number facts at their fingertips really empowers the children and enables them to approach tasks with confidence.

### Spring Term 1: Know multiplication and division facts for the 9x and 12x table

$0 \times 9 = 0$	$9 \times 0 = 0$		
$1 \times 9 = 9$	$9 \times 1 = 9$	$9 \div 9 = 1$	$9 \div 1 = 9$
$2 \times 9 = 18$	$9 \times 2 = 18$	$18 \div 9 = 2$	$18 \div 2 = 9$
$3 \times 9 = 27$	$9 \times 3 = 27$	$27 \div 9 = 3$	$27 \div 3 = 9$
$4 \times 9 = 36$	$9 \times 4 = 36$	$36 \div 9 = 4$	$36 \div 4 = 9$
$5 \times 9 = 45$	$9 \times 5 = 45$	$45 \div 9 = 5$	$45 \div 5 = 9$
$6 \times 9 = 54$	$9 \times 6 = 54$	$54 \div 9 = 6$	$54 \div 6 = 9$
$7 \times 9 = 63$	$9 \times 7 = 63$	$63 \div 9 = 7$	$63 \div 7 = 9$
$8 \times 9 = 72$	$9 \times 8 = 72$	$72 \div 9 = 8$	$72 \div 8 = 9$
$9 \times 9 = 81$	$9 \times 9 = 81$	$81 \div 9 = 9$	$81 \div 9 = 9$
$10 \times 9 = 90$	$9 \times 10 = 90$	$90 \div 9 = 10$	$90 \div 10 = 9$
$11 \times 9 = 99$	$9 \times 11 = 99$	$99 \div 9 = 11$	$99 \div 11 = 9$
$12 \times 9 = 108$	$9 \times 12 = 108$	$108 \div 9 = 12$	$108 \div 12 = 9$

[www.mathszone.co.uk](http://www.mathszone.co.uk) has lots of links to interactive games e.g., 'hit the button' – doubles, halves, multiplication, division facts to select



$0 \times 12 = 0$	$12 \times 0 = 0$		
$1 \times 12 = 12$	$12 \times 1 = 12$	$12 \div 12 = 1$	$12 \div 1 = 12$
$2 \times 12 = 24$	$12 \times 2 = 24$	$24 \div 12 = 2$	$24 \div 2 = 12$
$3 \times 12 = 36$	$12 \times 3 = 36$	$36 \div 12 = 3$	$36 \div 3 = 12$
$4 \times 12 = 48$	$12 \times 4 = 48$	$48 \div 12 = 4$	$48 \div 4 = 12$
$5 \times 12 = 60$	$12 \times 5 = 60$	$60 \div 12 = 5$	$60 \div 5 = 12$
$6 \times 12 = 72$	$12 \times 6 = 72$	$72 \div 12 = 6$	$72 \div 6 = 12$
$7 \times 12 = 84$	$12 \times 7 = 84$	$84 \div 12 = 7$	$84 \div 7 = 12$
$8 \times 12 = 96$	$12 \times 8 = 96$	$96 \div 12 = 8$	$96 \div 8 = 12$
$9 \times 12 = 108$	$12 \times 9 = 108$	$108 \div 12 = 9$	$108 \div 9 = 12$
$10 \times 12 = 120$	$12 \times 10 = 120$	$120 \div 12 = 10$	$120 \div 10 = 12$
$11 \times 12 = 132$	$12 \times 11 = 132$	$132 \div 12 = 11$	$132 \div 11 = 12$
$12 \times 12 = 144$	$12 \times 12 = 144$	$144 \div 12 = 12$	$144 \div 12 = 12$

### Practical ideas to help your child

Chanting is still an effective way to learn multiplication tables. Musical times tables CDs are also quite useful – children often learn the 'rhythm and rhyme' of a song quite quickly and therefore learn to recite and recall the facts.

It is really important that children are as confident with division facts as they are with multiplication facts.

- Practice the idea of 'Family of facts' e.g. if I know that  $9 \times 5 = 45$  .....  
I also know  $5 \times 9 = 45$ , that  $45 \div 5 = 9$  and that  $45 \div 9 = 5$

### Vocabulary

times	multiply	multiple of	
lots of	groups of	divided by	shared

Great computer programs:

Times table rock star



[www.multiplication.com](http://www.multiplication.com)



<https://www.topmarks.co.uk/maths-games/hit-the-button>

Spring Term 2: Know the doubles and halves of:

Numbers to 50

Multiples of 10 to 500

Multiples of 100 to 500

Doubles and corresponding halves for all whole numbers from 1 – 50 → start with even numbers as easier to halve. When halving odd numbers there will always be  $\frac{1}{2}$  or 0.5 in the answer e.g.,  $\frac{1}{2}$  of 45 = 22 $\frac{1}{2}$ .

Doubles and halves of all multiples of 10 to 500 → remind children about identifying multiples of 10: all multiples of 10 end in a 0 e.g., 60, 130, 270, 440, etc

Doubles and halves of all multiples of 100 to 500 e.g., 100, 200, 300, 400, 500.

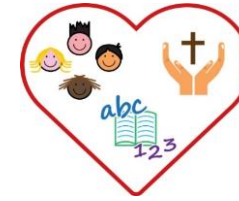
Halves	Number	Doubles
50	100	200
100	200	400
150	300	600
200	400	800
250	500	1000

- Encourage children to make links:  
Doubling → multiplying by 2  
Halving → dividing by 2
- Regular 5 / 10 minutes practice, quick-fire questions.
- 'Speed challenge': how many doubles and halves can you get right in 3 minutes? (using kitchen timer).
- Progress to 'Beat your record': can you get 5 more right than yesterday?

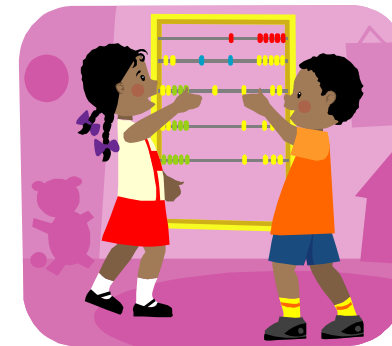
Vocabulary

double	multiply by 2	times by 2	x2
half	divide by 2	÷ 2	partition
hundreds	tens	ones	derive

St Matthew's C.E. School and Nursery



# Help your child to learn maths facts Year 4



Parent's and carer's guide to support  
children with the 'Learning by Heart'  
programme