

Math Magic: The Amazing Nines: Patterns, to Hints

Issue 2: Strategies for Learning the 9x Tables (grades 4-8)

A free publication—pass it on to other interested parties

PATTERNS IN THE 9X TABLES

Look at the tables below and write what notice below. Some are more obvious than others.

$2 \times 9 = 18$	$1 + 8 = \underline{\quad}$
$3 \times 9 = 27$	$2 + 7 = \underline{\quad}$
$4 \times 9 = 36$	$3 + 8 = \underline{\quad}$
$5 \times 9 = 45$	$4 + 9 = \underline{\quad}$
$6 \times 9 = 54$	$\underline{\quad}$
$7 \times 9 = 63$	$\underline{\quad}$
$8 \times 9 = 72$	$\underline{\quad}$



THE RULE: *First, take one less than the non-nine multiplier, and write it down as the first part of your answer. The second digit in the answer will be whatever adds to the first digit to equal nine.*

YOU TRY ONE FILL-IN

in $3 \times 9 = ?$ One less than 3 is $\underline{\quad}$, so $\underline{\quad}$ is the first part of the answer.

$3 \times 9 = \underline{\quad}$ Next ask, “ $\underline{\quad} + \text{what adds to 9?}$ ”
 $\underline{\quad} + \underline{\quad}$ is 9, so $\underline{\quad}$ is the second part of the answer.

$3 \times 9 = \underline{\quad}$

TRY SOME MORE FOR PRACTICE. Do the steps mentally (in your head). *Caution: lower non-nine part first, except when both 9 as in 9×9 .

$2 \times 9 =$

$9 \times 4 =$

$5 \times 9 =$

$9 \times 6 =$

$7 \times 9 =$

$9 \times 9 =$



There are many math activities in the index below which will give you more practice. No worries, you will get it eventually.

$2 \times 9 = 18$	<p>What do you notice?</p>
$3 \times 9 = 27$	
$4 \times 9 = 36$	
$5 \times 9 = 45$	
$6 \times 9 = 54$	
$7 \times 9 = 63$	
$8 \times 9 = 72$	
$9 \times 9 = 81$	

ADVANCED METHOD OF SOLVING MULTIPLICATION BY A NUMBER (N) BY 9

Look at these examples below and see if you can see what the rule might be.

EXAMPLE 1:

in $6 \times 9 = ?$ One less than 6 is 5, so 5 is the first part of the answer.

$6 \times 9 = \underline{5}\underline{\quad}$ Next ask, “5 + what adds to 9?”
 $5 + \underline{4}$ is 9, so 4 is the second part of the answer. $\rightarrow 6 \times 9 = \underline{5}\underline{4}$

EXAMPLE 2:

in $8 \times 9 = ?$ One less than 8 is 7, so 7 is the first part of the answer, and $8 \times 9 = \underline{7}\underline{\quad}$

ANOTHER WAY to remember a 9 multiplication fact or any is to use a multiplication chart, but the best way is just to memorize these and practice these with your flash cards by yourself or with a partner, or on computer game or app. You probably know most of them anyway.

[Index of all Math Magic Activities](#)