

[https://www.mathnook.com/math/skill/primecompositegames.php#google\\_vignette](https://www.mathnook.com/math/skill/primecompositegames.php#google_vignette)



<https://www.topmarks.co.uk/Search.aspx?q=prime%20numbers>



<https://wordwall.net/resource/359010/maths/square-numbers>



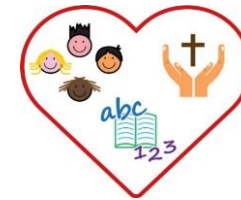
<https://www.mathspad.co.uk/teach/worksheets/surds/squareCubeNumbersPuzzle.pdf>



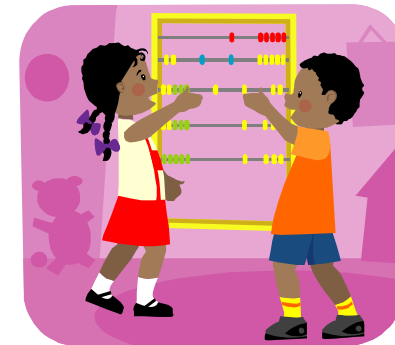
<https://mathszone.co.uk/category/number-facts-x%C3%B7/doubling-and-halving/>



St Matthew's C.E. Primary Academy



Help your child to learn maths facts.  
Year 6



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

## '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.

Young children need to work practically using apparatus like toys, small objects, coins, etc, this will help children to check their mental work with real materials.

Summer Term 1: Know the doubles and halves of all whole numbers and multiples of 10, 100, 1,000 10,000, 100,000 to 1 million.

Double and corresponding halves for all whole numbers from 1 – 100 → 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.

Doubles and halves of all multiples of 100 to 10,000 → remind children about identifying multiples of 100:

all multiples of 100 end in 00 such as all 'hundred' and all 'thousand' numbers e.g., 500, 900, 1100, 1500, 7400, 9800, etc

Practical ideas to help your child.

Encourage children to make links:

Doubling → multiplying by 2

Halving → dividing by 2

Partitioning is a useful aid to doubling and halving e.g. doubling 39 is the same as double 30 + double 9

halving 78 is the same as half of 70 + half of 8

Encourage children to make links with known facts to derive (work out) unknown facts e.g. if double 7 is 14 → double 70 is 140 then double 700 is 1400

Regular 5 / 10 minute 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?

Deriving facts: If you know that double 6 is 12, what else do you know? E.g. half of 12 is 6, double 60 is 120, half of 120 is 60, double 600 is 1200, half of 1200 is 600, double 6000 is 12000, half of 12000 is 6000, etc

Vocabulary

double multiply by 2 times by 2  $\times 2$  halve divide by 2  
 $\div 2$  partition hundreds tens ones derive

Summer Term 1: To recall prime, composite, square and cube numbers.

Prime numbers

Prime numbers have only TWO factors.

The factors of 12 are: 1, 2, 3, 4, 6, 12	Factors of 7 are: 1, 7
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12 is NOT prime 7 IS prime.

Composite numbers

Numbers which are not prime numbers are called COMPOSITE numbers.

Prime numbers to 20

The numbers in red are prime numbers.

The numbers in black are composite numbers.

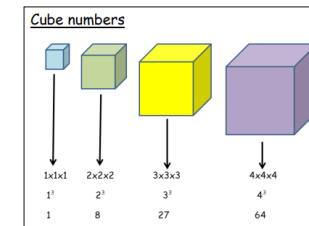
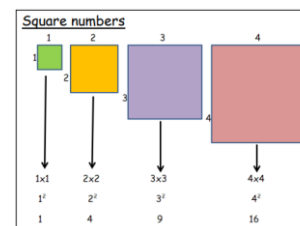
Number 1

The number '1' is NOT prime.

<del>1</del>	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20

Square numbers are the answer when you multiply a number by itself, e.g.  $1 \times 1$ ,  $2 \times 2$ ,  $3 \times 3$  etc

Cube numbers are the answer when you multiply a number by itself and then by itself again, e.g.  $1 \times 1 \times 1$ ,  $2 \times 2 \times 2$ ,  $3 \times 3 \times 3$  etc.



Activities:

Match the squared and cube numbers.

$2^2$	49	$1^3$
$6^2$	25	$4^3$
$3^2$	121	$6^3$
$7^2$	216	$3^3$
$11^2$	16	$2^3$
$9^2$	64	$5^3$
$12^2$	125	
$1^2$	1	
$4^2$	81	
$5^2$	9	
$8^2$	27	
	36	
	8	
	6	

Circle all the prime numbers below.

3 9 10 2 11 30 13 25 42 40 41  
 18 93 7 16 19 50 52 99 65 79 81

Circle all the composite numbers below.

2 5 6 9 15 33 100 91 56 12 98  
 14 19 45 60 88 13 34 90 22 31 3

Vocabulary

prime composite factors multiples  
 square (multiply by itself) cube (multiply by itself and itself again)