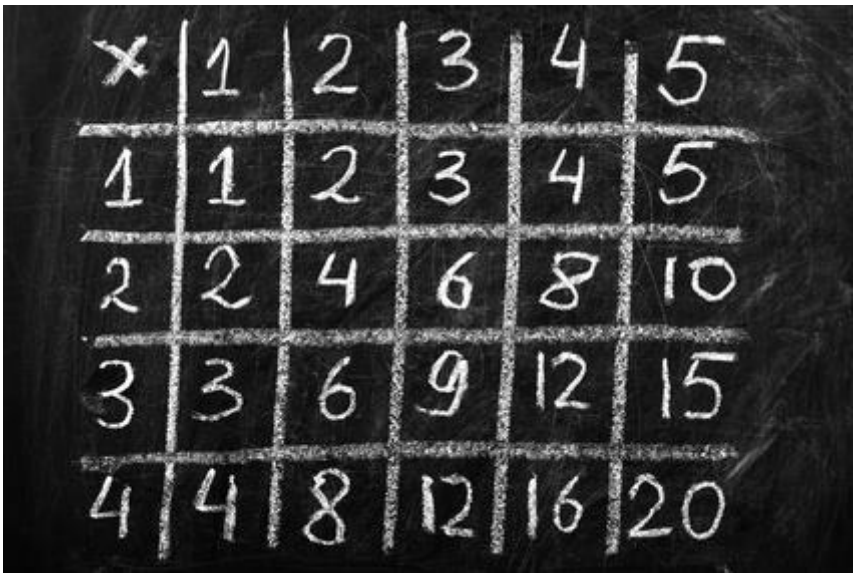
The Multiplication Grid



Multiplication is one of the basic building blocks of mathematics. Children who fail to learn their times tables will find other concepts in math, such as division and algebra, extremely difficult. Most children will quickly learn to use a multiplication table because they have used number lines, objects, and other visual tools to help them multiply. A multiplication table takes these concepts even further by incorporating all of the factors and products to help kids multiply starting at 1×1 and going to 12×12 and beyond.

Understanding the Layout

A basic multiplication table covers the factors 1-10 and their products up to 100. The factors appear on the top and side of the table, while the products appear in the middle. Part of teaching children to use a multiplication table involves just getting them comfortable with the layout.

The following examples show a multiplication grid that ranges from 0x0 to 10X10. The ones in the resources pack went from 1x1 to 12x12. You still use the multiplication grid in the same way regardless of the factors it includes.

x	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	27	30
4	0	4	8	12	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	32	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100

Start by picking a factor from the side of the table at random and showing your child how if they look across the table, they'll see all the multiples of that number. For example, if you choose 4, children will see 0, 4, 8, 12, 16, 20, 24, 28, 32, 36, and 40 following the number. You can then point out that 4×0=0, 4×1=4, 4×2=8, and so on.

From there, draw your child's attention to the top row of the multiplication table. Explain that the spot on the table where the two numbers intersect is the product of the two numbers. Choose two factors, one from the top row and one from the side row. Ask your child to highlight the squares under and beside each number until they intersect at the product (use the counters for this). Practice this with multiple pairs of factors, eventually getting your child to find them without highlighting or shading in the squares.

x	0	1	2	**3**	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	27	30
4	0	4	8	**12**	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	32	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100

Maybe as your child practices finding products, take a moment to remind them of the commutative property of multiplication. Whether the problem is AxB or BxA, the product is still the same, so 3×5 and 5×3 both equal 15.

Practice Using the Multiplication Table

If simply calling out multiplication problems and having children solve them using the multiplication table becomes a bit mundane, have children use the multiplication table in a more competitive way. For example, going on Mathletics or NumberGym.

You can also time your child as they solve multiplication problems. For example, set a stopwatch as they recite or use alternating factors within the multiplication table.

Hidden Tricks in a Multiplication Table

Children will also find multiple tricks and surprises within the multiplication table. Recognizing these tricks will help them quickly find certain types of products and make sure they're always using the table correctly.

Finding Squares

The square of a number is that number times itself. If children start at the upper left hand corner of the table and read it diagonally to the lower right hand corner, they'll discover the squares of zero through 10 listed in order.

x	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	27	30
4	0	4	8	12	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	32	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100

Doubles

For a few rows and columns, the multiples of one number are double the multiples of another number. For example, all of the products in the row for 4 are double the products in the row for 2 and all of the products in the row for 8 are double the products in the row for 2. The same is true for the products in the rows for 3 and 6.

x	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	27	30
4	0	4	8	12	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	32	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100

As children begin to learn these tricks, as well as other tricks related to multiplication in general, they'll begin to understand how to use a multiplication table. For example, did you know that the individual numbers in the multiples of 9 add up to 9, i.e, 9×5=45 and 4+5=9, or that the products for 3, 5, 7, and 9 alternate between even and odd numbers? This knowledge will help your child gain confidence in their multiplication abilities and make it easier for them to quickly find the correct product using a multiplication table.