Multiplication

Year 1

Mental Strategies

Children should experience regular counting on and back from different numbers in 1s and in multiples of 2, 5 and 10.

Children should memorise and reason with numbers in 2, 5 and 10 times tables

They should see ways to represent odd and even numbers. This will help them to understand the pattern in numbers.

Children should begin to understand multiplication as scaling in terms of double and half. (e.g. that tower of cubes is double the height of the other tower)

Vocabulary

Ones, groups, lots of, doubling
repeated addition
groups of, lots of, times, columns, rows
longer, bigger, higher etc
times as (big, long, wide …etc)

Generalisations

Understand 6 counters can be arranged as 3+3 or 2+2+2

Understand that when counting in twos, the numbers are always even.

Some Key Questions

Why is an even number an even number?
What do you notice?
What's the same? What's different?
Can you convince me?
How do you know?

Year 2

Mental Strategies

Children should count regularly, on and back, in steps of 2, 3, 5 and 10.

Number lines should continue to be an important image to support thinking, for example

Children should practise times table facts
2 x 1 =
2 x 2 =
2 x 3 =

Use a clock face to support understanding of counting in 5s.
Use money to support counting in 2s, 5s, 10s, 20s, 50s

Vocabulary

multiple, multiplication array, multiplication tables / facts
groups of, lots of, times, columns, rows

Generalisation

Commutative law.

Repeated addition can be shown mentally on a number line

Inverse relationship between multiplication and division. Use an array to explore how numbers can be organised into groups.

Some Key Questions

What do you notice?
What's the same? What's different?
Can you convince me?
How do you know?

Year 3

Mental Strategies

Children should continue to count regularly, on and back, now including multiples of 4, 8, 50, and 100, and steps of 1/10.

The number line should continue to be used as an important image to support thinking, and the use of informal jottings and drawings to solve problems should be encouraged.

Children should practise times table facts
3 x 1 =
3 x 2 =
3 x 3 =

Vocabulary

partition
grid method
inverse

Generalisations

Connecting x2, x4 and x8 through multiplication facts

Comparing times tables with the same times tables which is ten times bigger. If 4 x 3 = 12, then we know 4 x 30 = 120. Use place value counters to demonstrate this.

When they know multiplication facts up to x12, do they know what x13 is? (i.e. can they use 4x12 to work out 4x13 and 4x14 and beyond?)

Some Key Questions

What do you notice?
What's the same? What's different?
Can you convince me?
How do you know?