

Stages in Multiplication

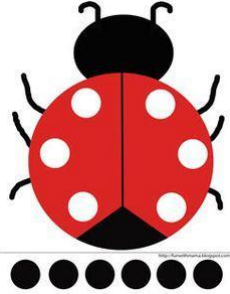
Multiplication – Early Stages (EYFS)

Children will engage in a wide variety of songs and rhymes, games and activities.

In practical activities and through discussion they will begin to solve problems involving **doubling**.

“If I have 3 dots on 1 side of my ladybird and double the number of dots, how many will it have?”

“Double 3 is 6.”



Children will count **two groups** of the same size in **practical contexts**.

For example:



‘Three apples for you and three apples for me. How many apples altogether?’

Using **real objects**, children will count how many objects they have in each group and how many they have **altogether**.



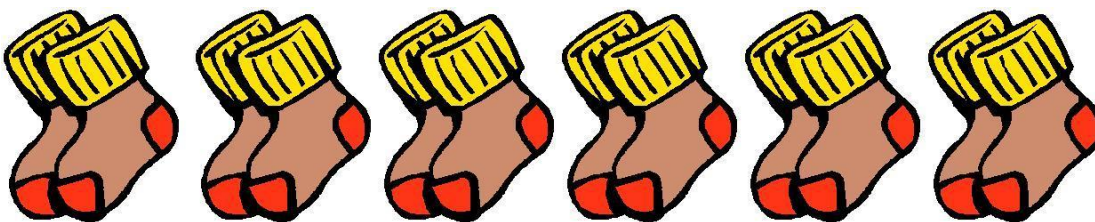
Multiplication – Stage One

- Solve **one-step problems** involving multiplication by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher
- **Count in multiples** of twos, fives and tens (to the 10th multiple)
- Children will count **repeated groups** of the same size in practical contexts **using real objects**.

Use resources such as a **counting stick** to reinforce **repeated addition**.



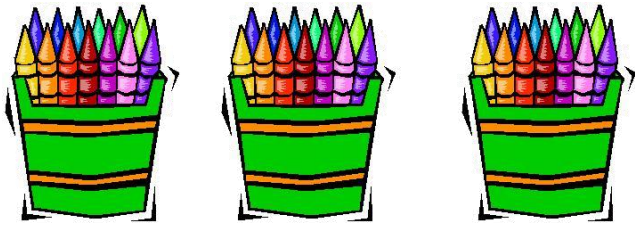
They will use the vocabulary associated with multiplication in **practical contexts**. They will solve practical problems that involve **combining groups of 2, 5 or 10**. e.g. socks, fingers and cubes.



‘Six pairs of socks.’

‘How many socks altogether? 2, 4, 6, 8, 10, 12’

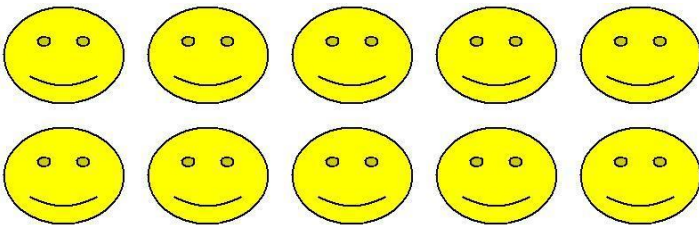
“6 groups of 2”
“6 lots of 2”



‘Three pots of ten crayons.’
‘How many crayons altogether? 10, 20, 30’

“3 groups of 10”
“3 lots of 10”

Use **arrays** to support early multiplication



‘Five groups of two faces. How many faces altogether?’
‘2, 4, 6, 8, 10’

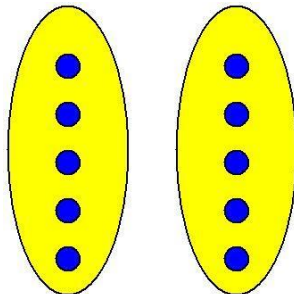
‘Two groups of five faces. How many faces altogether?’
‘5, 10’

‘2 groups of 5’

‘How many altogether?’

‘ $5 + 5 = 10$ ’

‘Double five is ten.’

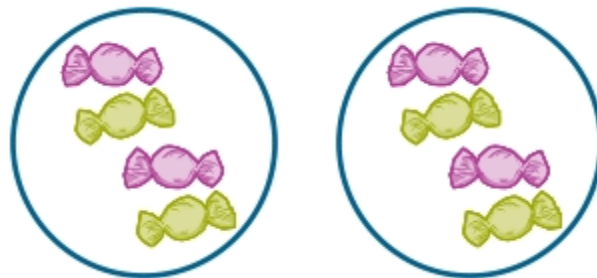
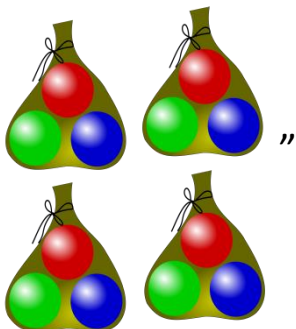


Continue to solve problems in **practical contexts** and develop the language of early multiplication, with appropriate resources, throughout Stage one.

Use **objects** to consolidate

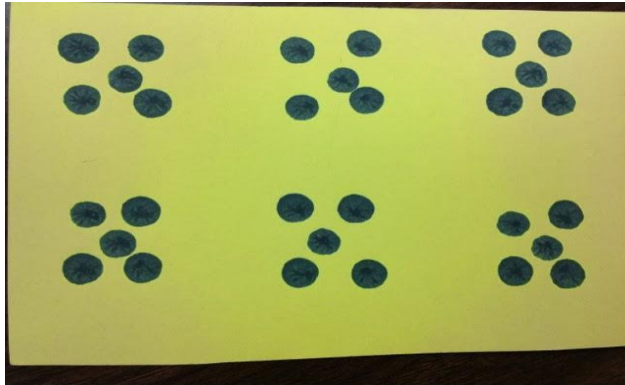
“Make 3 four times.”

“Make 4 two times.”



Use bingo pens to record

For example: "Stamp 5 six times."



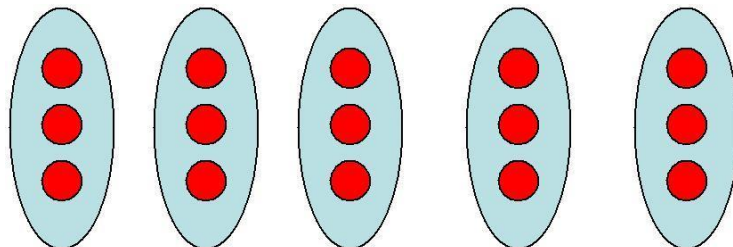
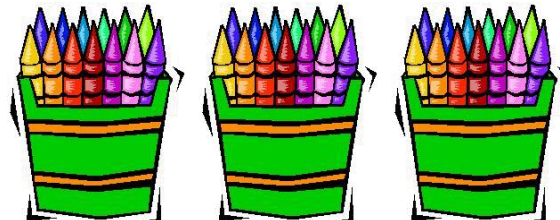
Multiplication – Stage Two

- Recall and use **multiplication facts** for the 2, 5 and 10 multiplication tables
- **Calculate mathematical statements** for multiplication within the multiplication tables and write them using the multiplication (\times) and equals ($=$) signs
- **solve problems** involving multiplication, using materials, arrays, repeated addition, mental methods, and multiplication facts, including problems in contexts
- show that multiplication of two numbers can be done in **any order**

Ensure that children are confident with the methods outlined in the previous stage's guidance before moving on. Children will use a range of vocabulary to describe multiplication and use practical resources, pictures and diagrams

Combining Groups (repeated addition):

$$10 + 10 + 10 = 30$$



$$3 + 3 + 3 + 3 + 3 = 15$$

$$3 \times 5 = 15$$

Children must be secure using multiplication in practical contexts before moving onto using notation.

Children must be explicitly taught that multiplication is an efficient way of showing repeated addition

To avoid confusion, especially with EAL children, be clear to model that 10×2 represents 10 multiplied twice, 6×10 represents six ten times. This is especially useful when rote learning timetables. Throughout this policy we have used this format to show the correct notation

Once children are secure with this representation, they should be taught to understand multiplication's commutative quality. During stage two for example they should be able to understand that 6×10 and 10×6 give the same answer enabling them to select the most efficient way for them to solve the problem.

Be sure that when introducing multiplication you make the distinction that "this is the number, this is what we are doing to it"

For example

10×2

"This is the number" (10)

"This is what we are doing to it" (multiplying it by 2)

Using arrays to support multiplication:

$6 \times 5 = 30$ or $5 \times 6 = 30$



$$6 \times 5 = 30$$

$$6 + 6 + 6 + 6 + 6 = 30$$



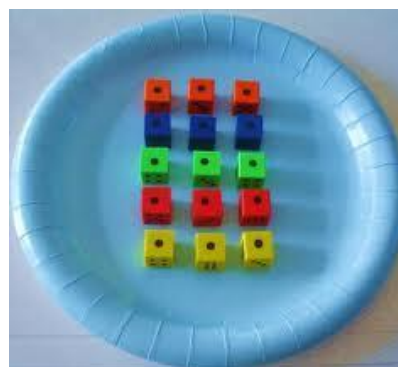
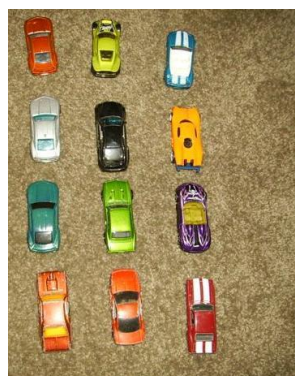
$$5 \times 6 = 30$$



$$5 + 5 + 5 + 5 + 5 = 30$$



To support children with arrays use concrete objects, pictorial representations (these could be linked to their particular interests):

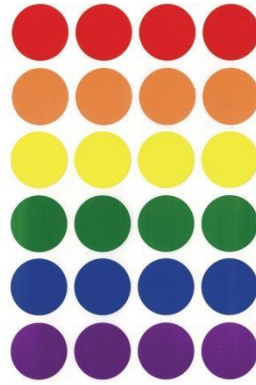


Once familiar with real object arrays, show and encourage them to record: For example, they could use the following:

Stamps



Stickers/dots



Continue to make the link to repeated addition