

# Foundation Stage

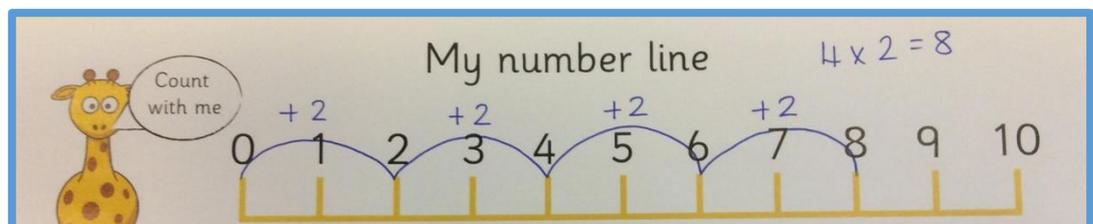


Count in groups of 2, 5 and 10

Group objects into sets of 2s, 5s and 10s



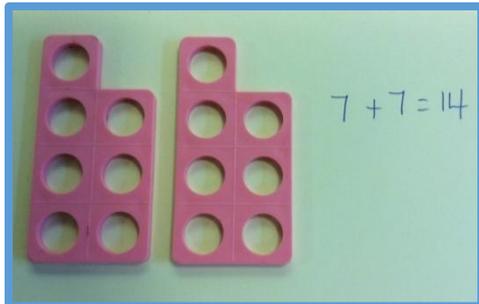
Count on as repeated addition



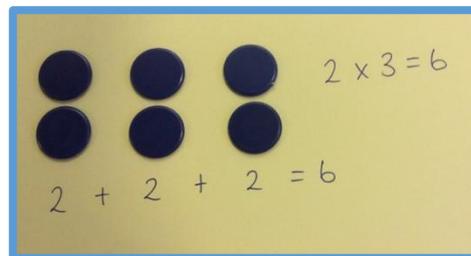
# Year One



Understand double as two equal groups of objects or numbers



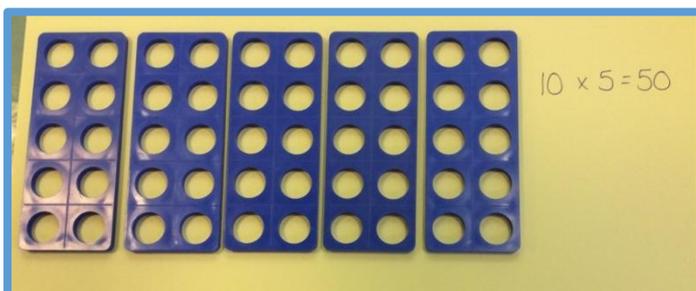
Group objects into sets of 2s, 5s and 10s



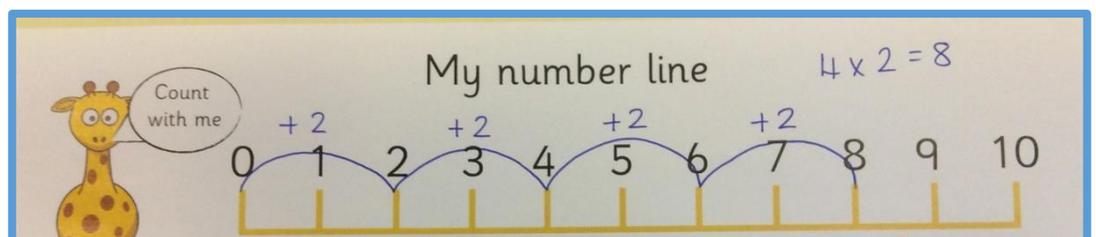
Know doubles to at least 10

Show calculations using rectangular arrays

Solve one-step problems involving the 2, 5 and 10 times tables



Use number lines to show repeated addition



# Year Two

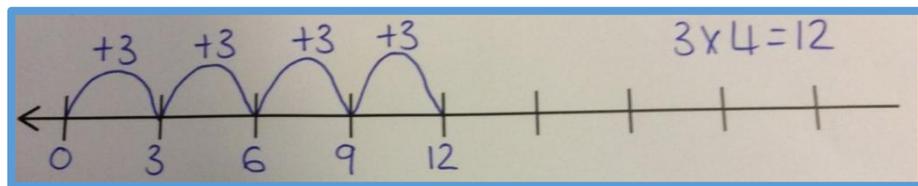


Count in 2s, 3s, 5s and 10s

Solve one-step problems involving the 2, 3, 5 and 10 times table

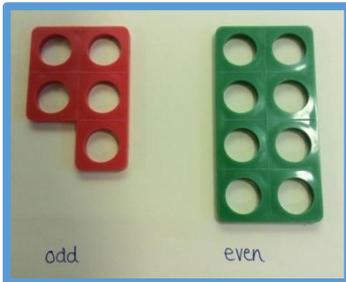
Group objects into sets of 2s, 3s, 5s and 10s

Use number lines to show repeated addition



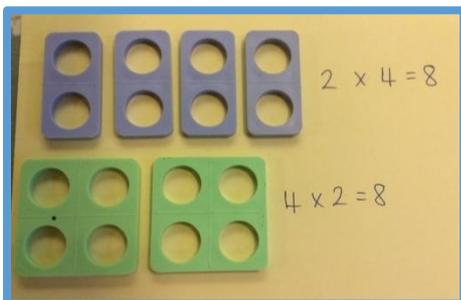
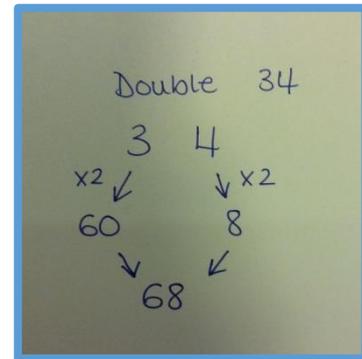
Understand odd and even numbers

Relate the 5 times table to a clock face



Know doubles to at least 20 and understand how to work out unknown doubles

Understand the commutative law



Show calculations using rectangular arrays

Use the bar method to solve multiplication problems

Write multiplication sentences for the bars below.

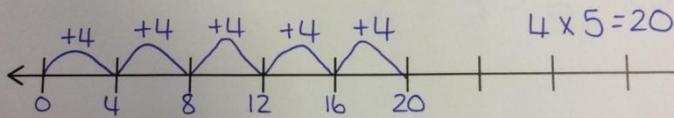
What do you notice?

4	4	4	4	4
5	5	5	5	

# Year Three



Know facts for the 3, 4 and 8 times tables



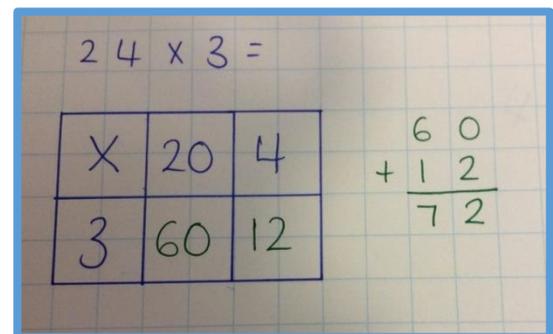
Calculate 2-digit  $\times$  1-digit mentally, progressing to formal methods

Connect 2, 4 and 8 times tables through doubling

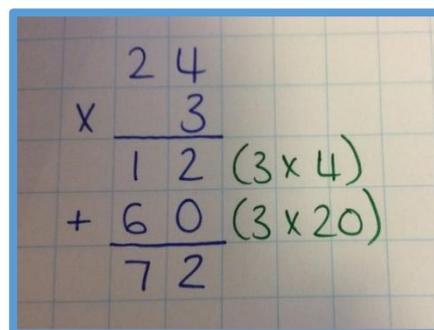
Solve scaling problems, e.g. 4 times longer

Calculate problems where  $m$  objects are related to  $n$  objects. For example, 3 hats and 4 coats, how many different outfits

Begin with grid method

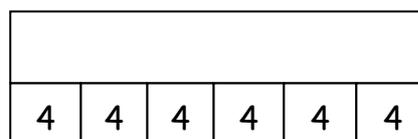


Progress to expanded method



Use the bar method to solve multiplication problems

Complete the bar model



# Year Four



Know facts up to  $12 \times 12$

Multiply 3 numbers

Find factor pairs

Calculate 2-digit  $\times$  1-digit

Calculate 3-digit  $\times$  1-digit

Solve scaling problems, e.g. 8 times higher

Calculate problems where  $m$  objects are related to  $n$  objects

Consolidate understanding with the grid method

236 $\times$ 7				
X	200	30	6	1400
				210
7	1400	210	42	+ 42
				<u>1652</u>

Progress to formal methods of multiplication as appropriate

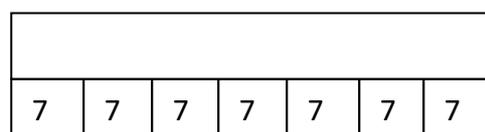
	236	
X		7
		42 (7 $\times$ 6)
		210 (7 $\times$ 30)
+	1400 (7 $\times$ 200)	
	<u>1652</u>	

	26
X	3
	<u>78</u>
	1

- Begin with the units of the smaller number (3) and multiply it by the units of the bigger number (6)
- The 10 (1) is *carried* into the tens column. The 8 goes into the units column
- Multiply 3  $\times$  20 (2). This answer is written in the tens column, plus the 1 that was carried from the previous answer.

Use the bar model to solve multiplication problems

Complete the bar model



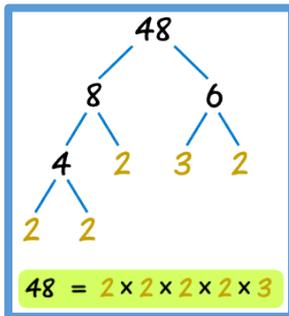
# Year Five



Find multiples and factors

Find factor pairs and common factors of 2 numbers

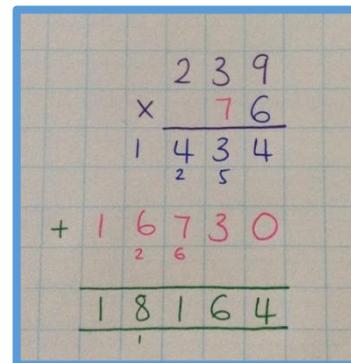
Find prime numbers, prime factors and composite numbers up to 19



Find square and cube numbers up to  $12 \times 12$

Solve problems involving simple ratio

Long multiplication - multiply the units first, carry numbers at the bottom



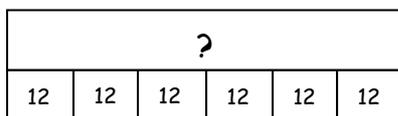
Calculate 4-digit  $\times$  1-digit

Calculate 3-digit  $\times$  2-digit

Multiply by 10, 100 and 1000 - relate this to converting between units of measure

Use the bar model to solve multiplication problems

Sam worked out that  $\frac{1}{6}$  of a number was 12. What was the number she started with?



- Begin with the units -  $6 \times 9 = 54$ . The 50 (5) is carried into the tens column and the 4 goes into the units.
- $6 \times 3$  (plus the 5 carried from the previous sum) = 23. The 200 (2) goes into the hundreds column and the 30 (3) goes into the tens column.
- $6 \times 2 = 12$  + the carried 2 = 14.
- Start a new line and add a zero as you are now going to multiply all of the numbers by 70 (7).
- $7 \times 9 = 63$  - carry the 6 into the next column
- $7 \times 3 = 21 + 6 = 27$  - carry the 2 into the next column
- $7 \times 2 = 14 + 2 = 16$
- Add the two numbers together

