# Silsoe Lower School Calculation Policy September 2023



### **Addition**

Concrete	Pictorial	Abstract
Combining two parts to make a whole (use a variety of resources)		Use a part, part whole model with numbers (four is a part, three is a part, the whole is seven)
Counting on using number lines by using cubes or numicon	A bar model which encourages children to count on	The abstract number line: What is 2 more than 4? What is the sum of 2+ 4? What is the total of 4 and 2? 4 + 2
Regrouping to make 10 by using ten frames and counters / cubes or using numicon: 6 + 5	Children to draw the ten frame and counters / cubes	Children to develop an understanding of equality Eg 6 + $\square$ = 11 6 + 5 = 5 + $\square$ 6 + 5 = $\square$ + 4









#### **Subtraction**





57 – 25 = 32	57 – 25 = 32	Subtract the ones, subtract the tens,
		continue if calculations involve hundreds or thousands. 57 - 25
		32
Two digit – two digit subtraction (with	Two digit – two digit subtraction (with exchange)	
	42 – 27 =	3/17
Tens     Ones       Image:	10 10 10 10 1 1 Exchange one ten for ten ones	- 2 7
		15
		Exchange one ten for ten ones then complete the column subtraction. 4 tens becomes 3 tens because one of the tens has been exchanged
		1

Remove the tens and ones from the smallest number as above	
42 - 27 = 15	

## **Multiplication**

Concrete	Pictorial	Abstract
Repeated grouping / repeated addition	Children to represent the practical resources in	Repeated addition 4 + 4 + 4
(using different objects)	a picture Fa	Multiplication 3 x 4
	XX XX XX XX XX XX Use a bar model for a more structured method	
Use a number line to show repeated	Represent these steps pictorially along a	Abstract number line
groups (and to count in different steps)	number track	3 x 4 = 12

	0 4 8 12	0 4 8 12
Using arrays (to show commutativity) 2 x 5 = 5 x 2	Children to draw arrays	Children to be able to use an array to write a range of calculations Eg $2 \times 5 = 10$ $5 \times 2 = 10$ 2 + 2 + 2 + 2 + 2 = 10 5 + 5 = 10
Partition two digit numbers into tens and ones using base ten or place value counters	Using pictorial representations of base ten or place value counters clearly showing how the number had been partitioned into tens and	Using the part part whole model to show each steps of the calculation
Tens Ones	32 x 5	32 × 5
		30 2 ×5 ×5
		150 + 10 = 160
		32 × 5 = 160



Calculate 200 x 3 then add the exchanged	
hundred	

#### **Division**

Concrete	Pictorial	Abstract
Understand division as sharing using concrete objects	This can also be done in a bar so all 4 operations have a similar structure:	6÷2=3 What's the calculation?
		3 3
Understand division as grouping 14 ÷ 2 means how many twos can go into 14?	How many groups of 2 can we make from 14?	This can be shown on a number line



