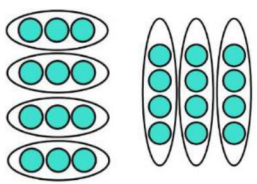
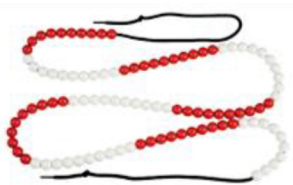
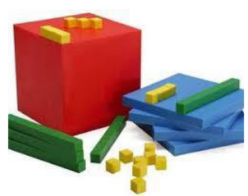
St Mary's Catholic Primary School, a Voluntary Academy

Calculation Policy Simplified



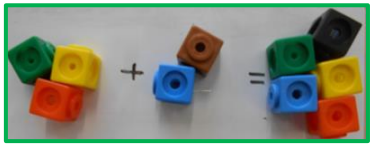


CONCRETE
PICTORIAL
ABSTRACT



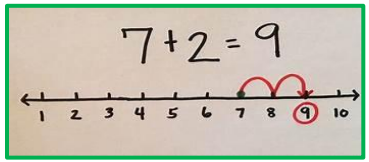
Addition

Addition starts by adding objects

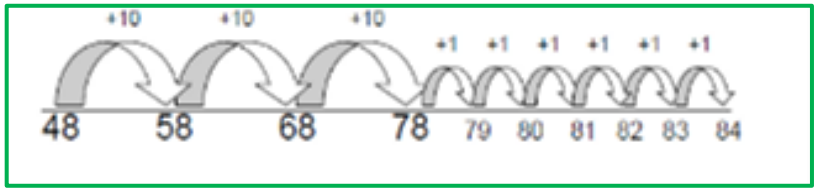


Bead string

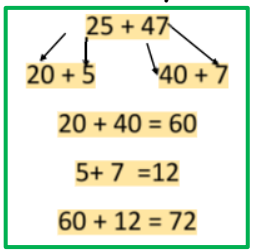
Number line (Manipulatives and then onto jottings)



Empty number line (jottings)

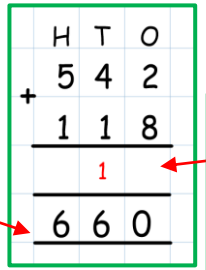


For larger numbers we regroup horizontally (Partitioning) Y2 and beyond



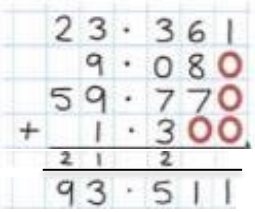
	200	+	60	+	3
+	100	+	10	+	9
	300	+	70	+	12
	300	+	80	+	2

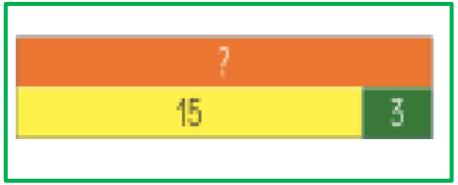
Column addition with exchange box Y3 and beyond.



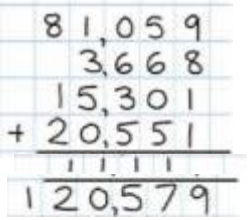
Answer box

Exchange box/row for exchanges/ regrouping



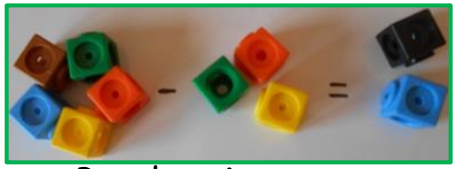


Bar model representative

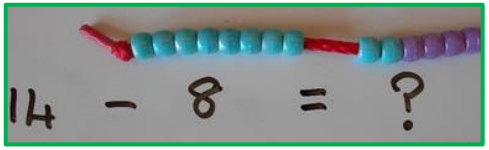


Subtraction

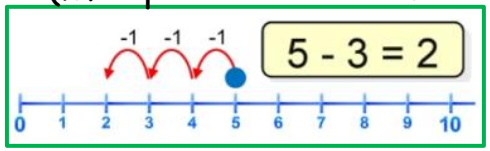
Subtraction starts with taking away objects



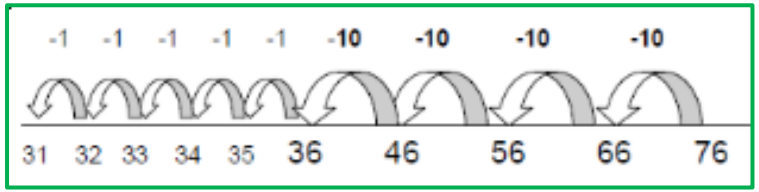
Bead string



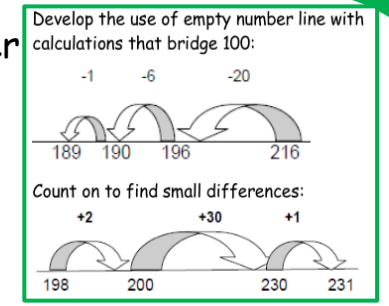
Number line (Manipulatives and then onto jottings)



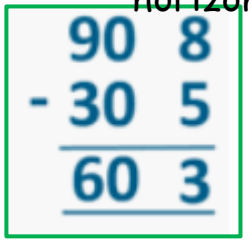
Empty number line (jottings)

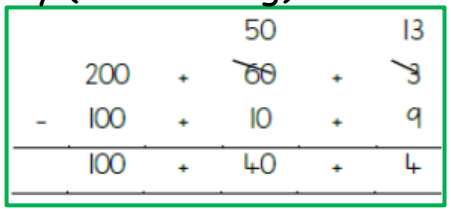


Empty number lines that bridge 100

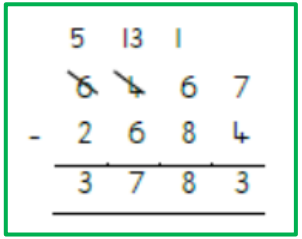


For larger numbers regroup horizontally (Partitioning)





Then vertically until we eventually progress to exchanging (Column method for exchanging) Y3 and beyond

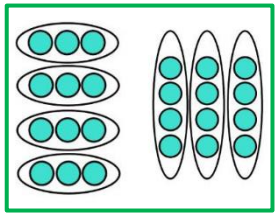


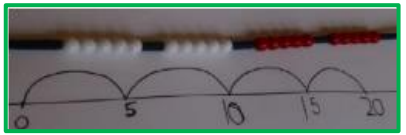
Multiplication

First, we group objects as a representation

Bead string

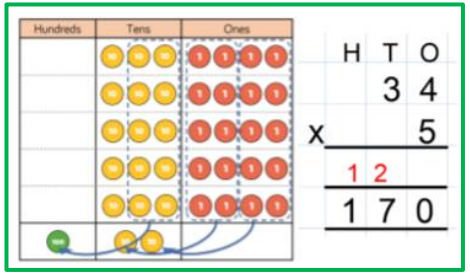
Arrays





Number line and onto an empty number line to show as repeated addition (manipulatives and jottings)

Place value chart alongside short multiplication (Y3-4)

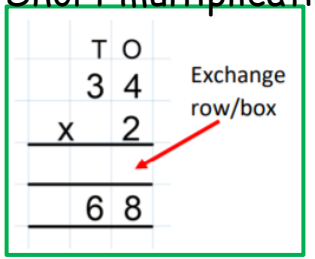


Grid method/Area model

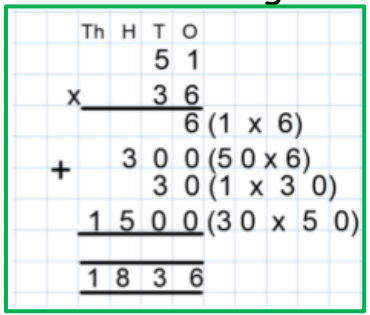
Grid method		
X	30	6
4	120	24

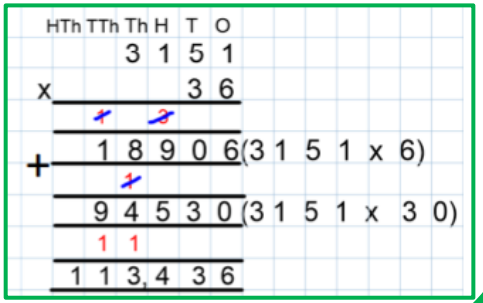
36
x 4
24 (6 x 4)
120 (30 x 4)
144

Short multiplication (Y3-4)



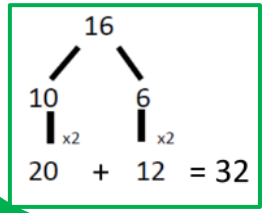
Long multiplication (Y5 and beyond)

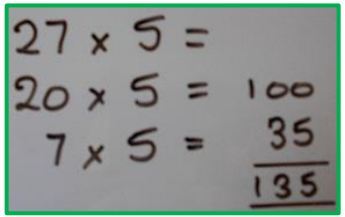




(Expanded version)

Partitioning method

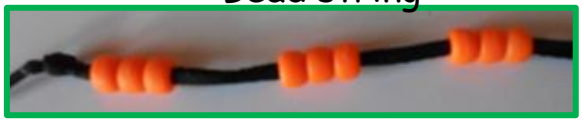




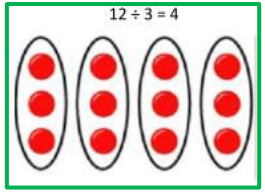
Division

Division begins with sharing

Bead string

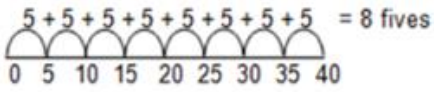


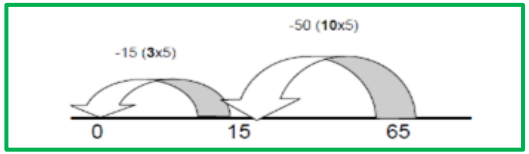
Sharing using arrays



Number line and onto an empty number line to show as repeated addition and subtraction (manipulatives and jottings)

Example without remainder:
40 ÷ 5
Ask "How many 5s in 40?"

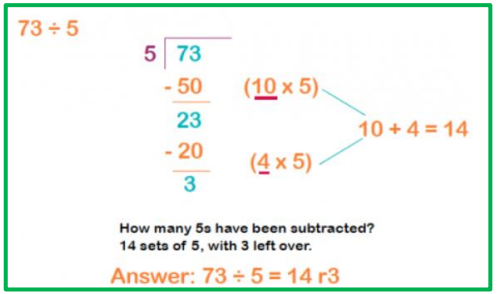


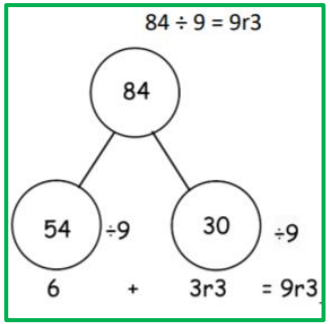


Division using bar models

8 ÷ 4 = 2

Chunking

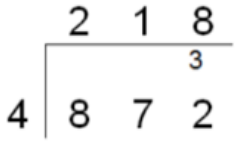




Partitioning to aid division Y3 and beyond

Short division Y4 and beyond

Begin with divisions that divide equally with no remainder.



Move onto divisions with a remainder.