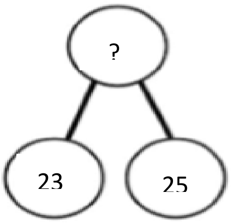
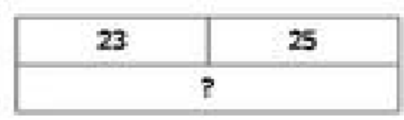
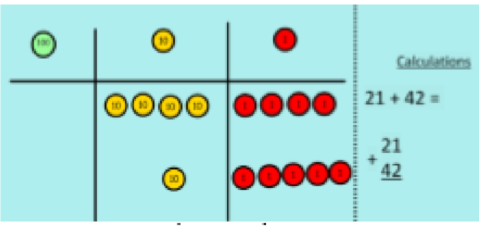
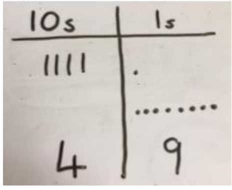
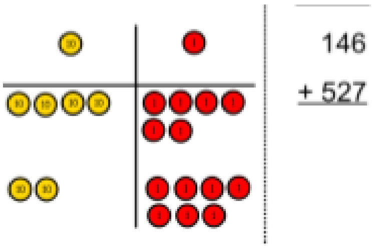
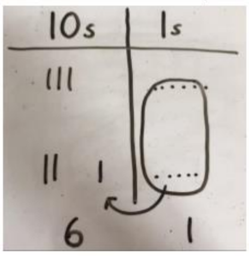
RAF Benson Community Primary School

ADDITION

Children in Year 3 need to be able to:

- add numbers mentally, including: a three-digit number and 1s, 10s and 100s
- add numbers with up to 3 digits, using formal written methods of column addition
- estimate the answer to a calculation and use inverse operations to check answers
- solve problems, including missing number problems, using number facts, place value, and more complex addition

STRATEGIES	EXAMPLES
Bar model	  23 + 25 = 48 Link part-part-whole to bar model.
Column Addition— no regrouping (friendly numbers)	  Represent numbers using pv counters or draw lines for the tens and dots for the ones.
Column Addition with regrouping	  Draw a representation of the grid to support their understanding, carrying the ten underneath the line

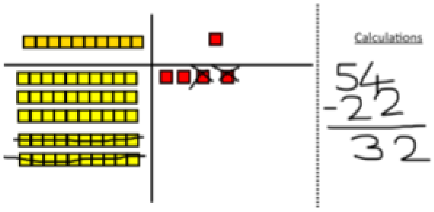
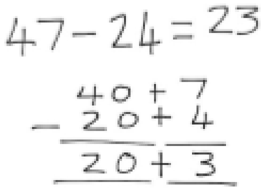
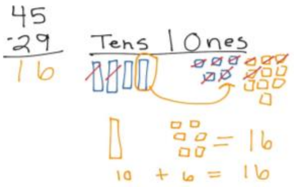
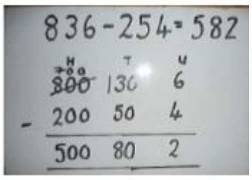
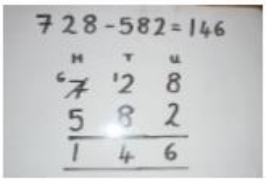
KEY LANGUAGE

Add, equals, greater/more than, parts, whole, partition, bonds, hundreds, tens, ones, column addition, place value, regroup, exchange.

SUBTRACTION

Children in Year 3 need to be able to:

- subtract numbers mentally, including: a three-digit number and 1s, 10s and 100s
- subtract numbers with up to 3 digits, using formal written methods of column subtraction
- estimate the answer to a calculation and use inverse operations to check answers
- solve problems, including missing number problems, using number facts, place value, and more complex subtraction

STRATEGIES	EXAMPLES
Make ten strategy	 Use a number line to count on to next ten and then the rest.
Column subtraction without regrouping (friendly numbers)	  Set out in columns using drawings of ones and tens with formal and partitioned method to support understanding.
Column subtraction with regrouping	   Start using drawings of ones and tens and crossing off and partitioned method to support understanding of exchanging.

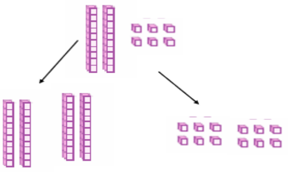
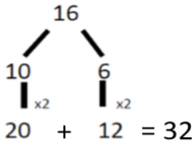
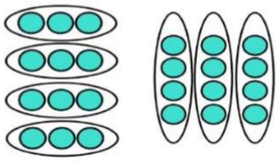
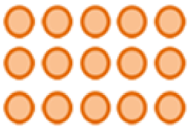
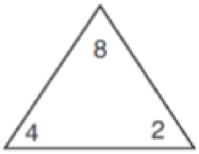
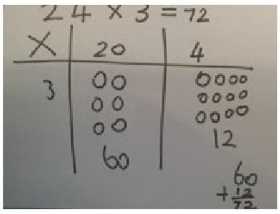
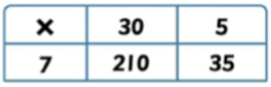
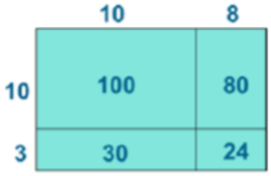
KEY LANGUAGE

Subtract, take-away, minus, equals, less than, parts, whole, hundreds, tens, ones, column subtraction, place value, regroup, exchange.

MULTIPLICATION

Children in Year 3 need to be able to:

- recall multiplication facts for the 3, 4 and 8 multiplication tables
- write and calculate mathematical statements for multiplication using the times tables that they know, using mental and progressing to formal written methods
- solve problems, including missing number problems, involving multiplication including scaling problems and problems in which n objects are connected to m objects

STRATEGIES	EXAMPLES
Doubling	 40 + 12 = 52  Draw representations to show how to partition and double 2-digit numbers.
Multiplication is commutative	  5 x 3 = 15 3 x 5 = 15 Use representations of arrays to show different calculations and write multiplication sentences.
Using the inverse (to be taught alongside division)	 ☐ × ☐ = ☐ ☐ × ☐ = ☐ ☐ ÷ ☐ = ☐ ☐ ÷ ☐ = ☐ 2 x 4 = 8 4 x 2 = 8 8 ÷ 2 = 4 8 ÷ 4 = 2 Show all related number sentences.
Grid method	  210 + 35 = 245  Start using counters/shapes to create arrays. Multiply by one digit and show the clear addition alongside the grid. Move onto multiplying by 2 digits with different rows.

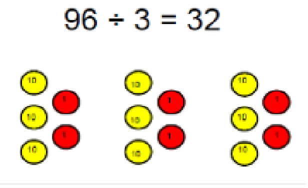
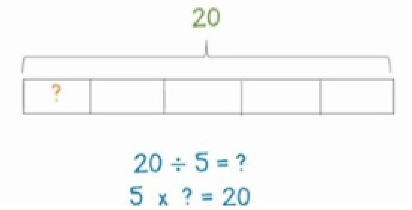
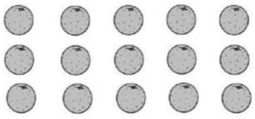
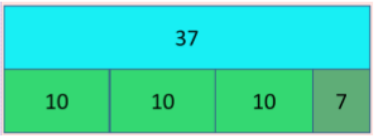
KEY LANGUAGE

Multiply, times, repeated addition, groups of, multiple, equal, double, array, partition, inverse, grid, ones, tens, digits.

DIVISION

Children in Year 3 need to be able to:

- recall division facts for the 3, 4 and 8 multiplication tables
- write and calculate mathematical statements for division using the times tables that they know, using mental and progressing to formal written methods
- solve problems, including missing number problems, involving division including scaling problems and problems in which n objects are connected to m objects

STRATEGIES	EXAMPLES
Division as grouping	  Divide quantities into equal groups. Draw number lines or bar models to show this. Ask questions such as ‘How many groups of 5 in 20?’
Division with arrays	  Link division to multiplication by creating an array and thinking about the number sentences that can be created. Eg 15 ÷ 3 = 5 5 x 3 = 15 15 ÷ 5 = 3 3 x 5 = 15
Division with remainders	   Divide objects between groups and see how many are left over. Jump forwards in groups on a number line and see how many more you need to jump to find a remainder.

KEY LANGUAGE

Divide, halving, sharing, groups of, equal, repeated subtraction, remainder, array, inverse.

USEFUL WEBSITES

Times Tables:

www.multiplication.com/games/all-games

www.bbc.co.uk/teach/skillswise/maths

http://gamequarium.com/multiplication

All Maths:

https://www.mathplayground.com

https://login.mathletics.com

https://www.oxfordowl.co.uk/for-home/kids-activities/fun-maths-games-and-activities

https://www.topmarks.co.uk/maths-games