

# Calculation at TAS

Year 5



### The Five Big Ideas

At TAS, we want our pupils of all ages to acquire a deep, long-term, secure and adaptable understanding and enjoyment of maths.

#### Coherence

Lessons are broken down into small connected steps that gradually build up from what a child already knows to the introduction of new concepts.

#### **Representation and Structure**

Representations are used in lessons to show children a visual representation of the maths they are doing.

#### **Mathematical Thinking**

Children work on ideas by discussing with others and explaining their reasoning, rather than being told how to think.

#### Fluency

Quick and efficient recall of facts and procedures is vital, so that it can be applied in different contexts.

#### Variation

The teacher often represents the concept being taught in more than one way, to develop a deeper understanding. Children are also given the opportunity to practise their skills in varied ways, by making connections.



#### **Representations and Resources**



### Addition

- Column method regrouping
- Use of place value counters for decimals





### Subtraction

- Column method with regrouping
- Abstract for whole numbers
- Start place value counters for decimals



## Multiplication

- Column multiplication
- Abstract only but may need recap of Year 4 method



Concrete	Abstract						
place value counters	formal written methods						
1826 x 3 = 5478	short &long multiplication						
Thousands Hundreds Tens Ones   000 100 100 10 1 1		Th	Н	Т	0	]	
		1	8	2	6		
	×				3		
		5	4	7	8		
	2 1						
		н		т	0		
Pictorial				_	2		
bar model				2	2		
	×			3	1		
1021 1026 1926				2	2		
1820 1020 1020		6		6	0		
		6		8	2		

#### **Key Vocabulary**

double groups of

times lots of multiplied by the product of equal groups



### Division

 Short division (up to 4 digits by 1 digit Including remainders)



#### **Key Vocabulary**

share divide half group divided by



Methods of calculation for each year group										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6				
Addition	Add two 1-digit numbers to 10	Add three 1-digit numbers	Add with up to 3 digits	Add with up to 4 digits	Add with more than 4 digits					
	Add 1- and 2-digit numbers to 20	Add 1 and 2-digit numbers to 100			Add with up to 3 decimal places					
		Add two 2-digit numbers								
Representations and models	Part whole model, bar model. Ten	Part whole model, bar model. Ten	Column Addition	Column Addition	Column Addition					
	frames, bead strings, number	frames, bead strings, number	Part whole model, bar	Part whole model, bar	Part whole model, bar					
	line, straws	line, straws, hundred square, Base 10	model, Base 10, place value counters	model, Base 10, place value counters	model, place value counters					
Subtraction	Subtract two 1- digit numbers to 10	Subtract 1 and 2-digit numbers to 100	Subtract with up to 3 digits	Subtract with up to 4 digits	Subtract with more than 4 digits					
	Subtract 1- and 2- digit numbers to 20	Subtract two 2- digit numbers			Subtract with up to 3 decimal places					
Representations and models	Part whole model, bar models, number lines,	Part whole model, bar Model, number	Column subtraction	Column subtraction	Column subtraction					
	ten frames, bead strings	lines, Straws, hundred	part whole model, bar	part whole model, bar	part whole model, bar					
	number tracks, straws	square, Base 10, place value counters	model, Base 10, place value counters	model, place value counters	model, place value counters					
Times Tables		Recall and use multiplication and division facts for the 2, 10 and 5 times tables	Recall and use multiplication and division facts for the 3, 4 and 8 times tables	Recall and use multiplication and division facts for the 6, 7, 9, 11 and 12 times tables						
Representations and models		Hundred square, Base 10, number lines, bead strings, place value counters, number tracks, evervdav objects	Hundred square, Base 10, number lines, bead strings, place value counters, number tracks, evervdav objects	Hundred square, Base 10, number lines, bead strings, place value counters, number tracks, evervdav objects						
Multiplication	Solve one-step problems with multiplication	Solve one-step problems with multiplication	Multiply 2-digit by 1-digit numbers	Multiply 2 and 3- digit by 1-digit numbers	Multiply 4-digit by 1-digit numbers Multiply 2-digit by 2 and 3-digit numbers	Multiply 2-digit by 4-digit numbers				
Representations and models	Bar models, counters, Base 10, Ten frames, bead strings	Bar models, counters, Base 10, Ten frames, bead strings	Expanded written method	Expanded written method	Formal written method	Formal written method				
	number lines	number lines	method Place value	method Place value	counters, Base 10					
Division	Solve one-step	Solve one-step	counters, Base 10 Divide 2 digits by	counters, Base 10 Divide	Divide 3 and 4	Divide multi				
	problems with division (grouping and sharing)	problems with division (grouping and sharing)	1 digit (sharing with and without exchange, with and without remainders	2 digits by 1 digit (grouping and sharing with remainders)	digits by 1 digit (sharing with exchange and grouping)	digits by 2 digits (short and long division)				
Representations and models	Real life objects, bead strings, ten frames, number	Real life objects, bead strings, ten frames, number	Straws, Base 10, bar models, place value counters,	Written short division	Written short division	Written sort and long division. list of multiples				
	lines, arrays, counters, bar models	lines, arrays, counters, bar models	part whole models	Place value counters,	Base 10, bar models, place value counters. part whole models					

Please note: some children may need to work in the stage before or after their year group, as appropriate for their needs.