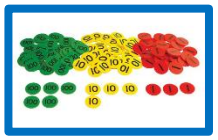
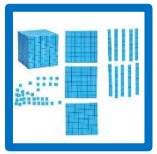
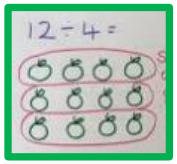
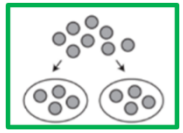
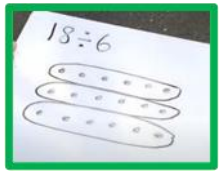
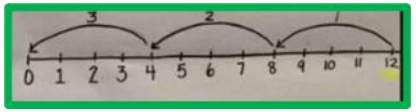
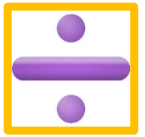
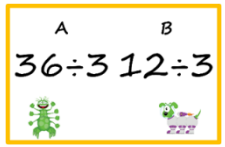
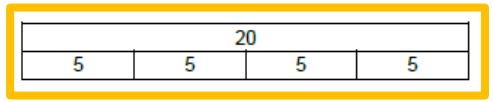
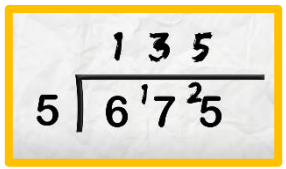
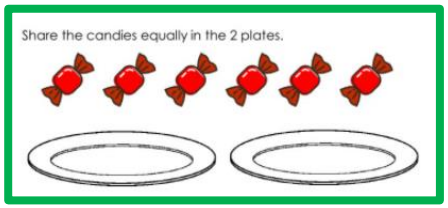
Gossops Green Primary School

Overview of Strategies and Methods - Division

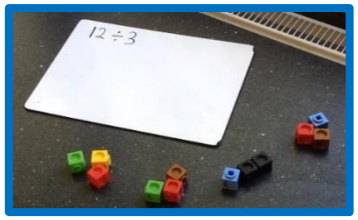
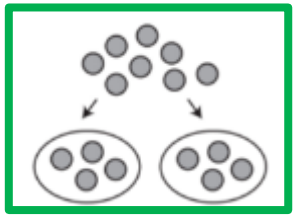
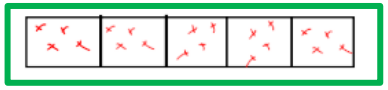
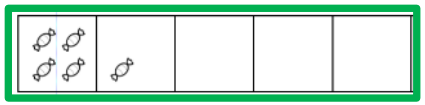
At Gossops Green, we use the Concrete, Pictorial, Abstract method in our maths teaching. Children are simultaneously introduced to a maths concept using a range of concrete materials and equipment that they can physically manipulate, pictorial representations of a concept and more abstract ways of working. This allows for a deeper understanding of the skills and knowledge required to apply division in different contexts. An overview of these for division can be found below:

	Concrete	Pictorial	Abstract
Division	Children are taught to use the following concrete resources (the list is not exhaustive):  Multilink  Everyday items  Place Value counters  Dienes Base Ten	Children are taught to use the following pictorial representations to support their division:  Drawings  Part-Part-Whole  Drawing arrays  Number lines	Children are taught to use the following abstract methods to record / solve division calculations:  Use of the ÷ symbol  Applying known number facts  Bar model  Short division

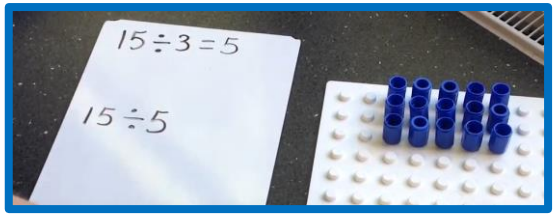
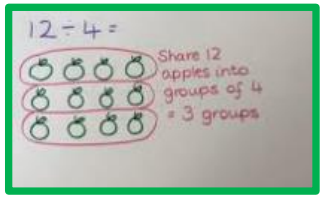
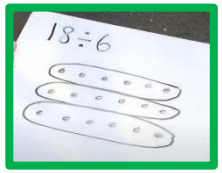
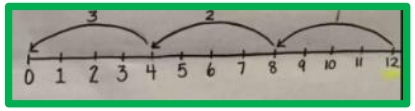
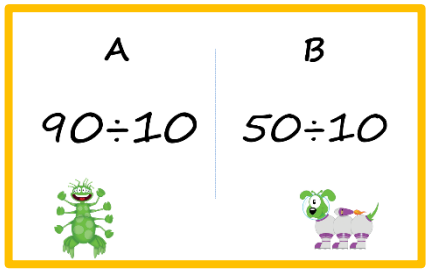
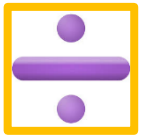
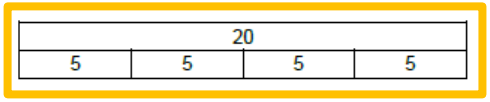
Overview of Strategies and Methods – Reception – Division

	Concrete	Pictorial	Abstract
	• Explore and represent patterns within numbers up to 10, including how quantities can be distributed equally.		
Division	**Sharing** Children use everyday items to share groups equally  **Grouping** Children are introduced to the concept of grouping through practical activities, e,g, a group of 4 children get 2 pieces of grape each 	**Sharing** Children use pictures of everyday items to share groups equally 	**Sharing** Children may start to use their number knowledge to realise that, if they have e.g. 4 items shared between 2 children, they will get 2 each.

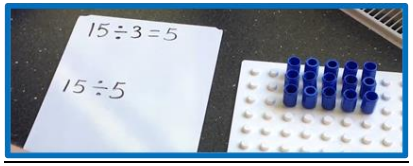
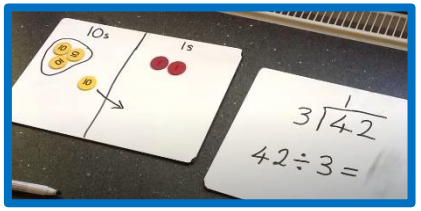
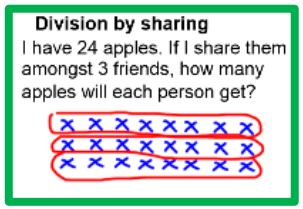
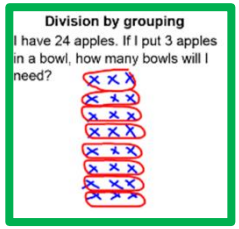
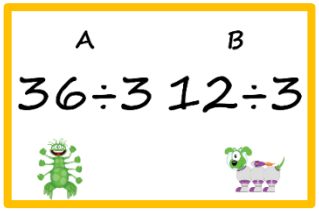
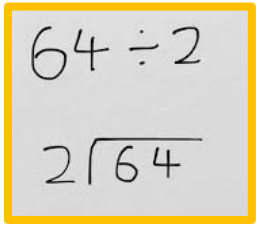
Overview of Strategies and Methods – Year 1 – Division

	Concrete	Pictorial	Abstract
	Pupils should be taught to: - halve numbers and quantities - solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.		
Division	**Sharing** Children use multilink, counters and everyday objects to manually halve or share quantities equally.  Division by sharing objects into groups - YouTube **Grouping** Children place objects into groups of, e.g. 5, and see how many groups they have: Division by making groups - YouTube  	**Sharing** Children use dots to share an amount:   **Grouping** Children start to group quantities, drawing pictures or dots to represent the objects, e.g. 20 sweets divided into groups of 4: 	Children say half of a number to 10, using their number facts knowledge. 

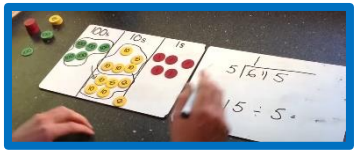
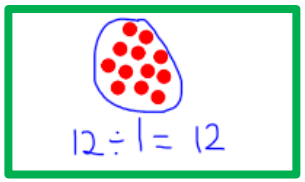
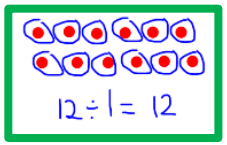
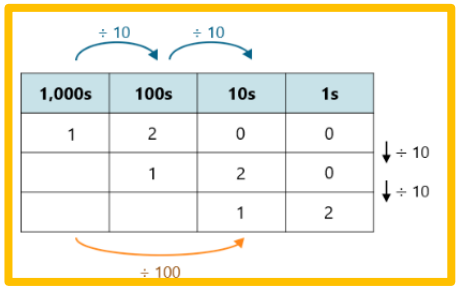
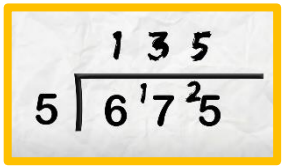
Overview of Strategies and Methods – Year 2 – Division

	Concrete	Pictorial	Abstract
	Pupils should be taught to: • Calculate mathematical statements for division within the multiplication tables and write them using the division (÷) and equals (=) signs • Solve problems involving division, using materials, arrays, mental methods, division facts, including problems in contexts. Solve problems involving division, using materials, arrays, mental methods, division facts, including problems in contexts.		
Division	**Sharing** Children use concrete resources, e.g. counters, place value counters, Numicon or cubes to sort quantities into equal groups.  **Grouping** Children use counters or cubes to make arrays Division within arrays - YouTube 	**Sharing** Children use and draw pictures or dots to pictorially share a quantity  **Grouping** Children draw dots in arrays  Division by making groups - YouTube A number line may be used to solve division calculation as a repeated subtraction. 	Children are taught related division facts for the 2, 5 and 10 times tables.  They are taught to use the ÷ sign and to understand that it can mean 'shared' and 'grouped'.  Children interpret bar models showing divisions, e.g. 

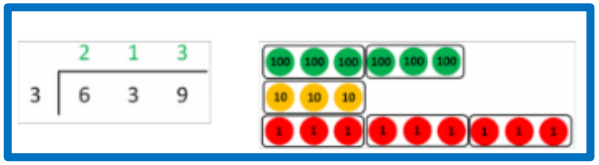
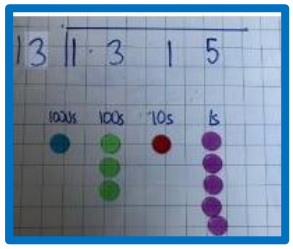
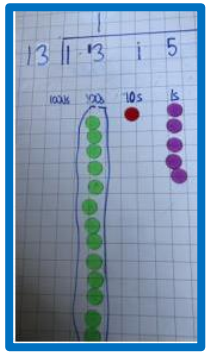
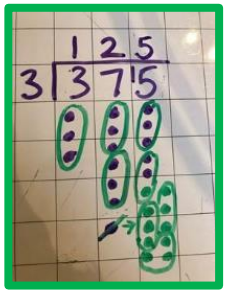
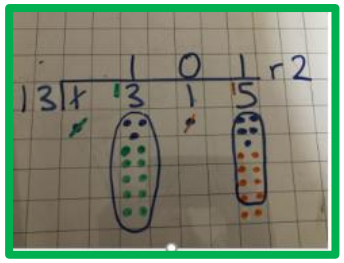
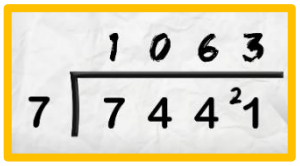
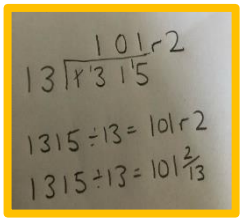
Overview of Strategies and Methods – Year 3 – Division

	Concrete	Pictorial	Abstract
	Pupils should be taught to: • write and calculate mathematical statements for **division** using the multiplication tables that they know, using mental and progressing to formal written methods		
Division	**Sharing** Children continue to make arrays, using a wider range of multiplication tables.  **Grouping** Children use place value counters or dienes to Short division two-digit number by a one digit number with regrouping - YouTube 	**Sharing** Children draw dots in arrays, sharing the quantity equally.  **Grouping** Children draw dots in arrays and then group them.   Children draw dots to support their use of short division (for 2-digit numbers without remainders).	Children use their number facts to solve division calculations  Children start to use short division, for calculations without remainders 

Overview of Strategies and Methods – Year 4 – Division

	Concrete	Pictorial	Abstract
	Pupils should be taught to: • Recall division facts for multiplication tables up to 12 × 12 • Divide whole numbers by 10, 100 and 1 • Use place value, known and derived facts to multiply and divide mentally • Complete short division of 2-digit and 3-digit number by single digit numbers, including calculations with remainders.		
Division	**Sharing** Children use concrete objects to demonstrate how to divide a whole number by one.  **Grouping** Children use place value counters or dienes to support their use of short division Short division (3 digit number by a 1 digit number) - YouTube 	**Sharing** Children draw dots to demonstrate sharing a number by 1:  **Grouping** Children draw dots to demonstrate grouping a number by 1:  Children draw dots to support their use of short division. 	Children are taught the pattern for dividing whole numbers by 10 and 100.  Children are taught to use short division, first without and then with exchanging and with remainders.  Speed Guide to Short Division - YouTube 

Overview of Strategies and Methods – Year 5 and 6 – Division

	Concrete	Pictorial	Abstract
	Pupils should be taught to: • divide numbers mentally drawing upon known facts • divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context • divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context (Y6) *We do not teach long division*		
Division	**Grouping** Children use place value counters or dienes to represent the number and then use grouping to support their understanding of short division  Including when dividing by a 2-digit number   	**Grouping** Children use dots to represent the number and support their grouping  Including when dividing by a 2-digit number  	**Grouping** Children continue to use short division but extending their understanding to include 4-digit numbers. Speed Guide to Short Division - YouTube   And when dividing by a 2-digit number. Children look at the context and make decisions about how to show the remainder. Showing remainder as a whole number: 8 5 8 r 2 3 ⟌ 2 5 7 6 Answer: 858 remainder 2 Showing remainder as a fraction: 8 5 8 r 2 3 ⟌ 2 5 7 6 Answer: 858 2/3