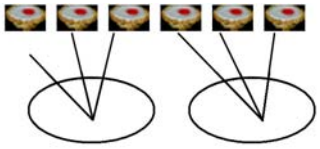
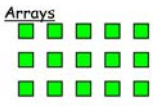
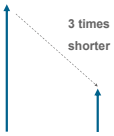
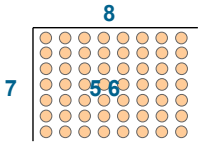
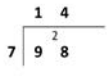
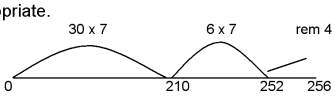
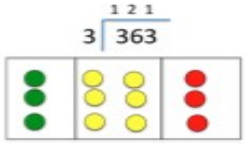
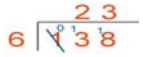
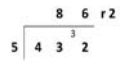
Progression in Division

National Curriculum 2014

Year	What will division look like?	Notes
		The guidance in italics is taken from the non- statutory guidance in the 'National Curriculum in England' document for 2014
EYFS	Pupils use concrete objects and practical situations to explore sharing to answer questions such as: Share the biscuits out so that everyone has the same number. Cut the sandwich in half. How many pieces are there? 	
1	Pupils solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. Pupils use sharing and grouping to solve division problems. <u>Sharing</u> e.g. 6 cakes are shared equally between 2 people. How many cakes does each person get?  <u>Grouping</u> How many pairs of socks can we make from this pile of socks? Count the pairs. 	*Through grouping and sharing small quantities, pupils begin to understand: multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities.* *They make connections between arrays, number patterns, and counting in twos, fives and tens.*
2	Pupils calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs 4 x 3 = 12 3 x 4 = 12 12 ÷ 4 = 3 12 ÷ 3 = 4 Pupils solve problems involving multiplication and division, using practical materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts, e.g. 15 pencils are put into boxes of 5. How many boxes of pencils will there be? There will be 3 boxes of 5 pencils  Also use arrays to model division. 15 ÷ 5 = 3 and 15 ÷ 3 = 5	*Pupils use a variety of language to describe multiplication and division.* *Pupils are introduced to the multiplication tables. They practise to become fluent in the 2, 5 and 10 multiplication tables and connect the 5 multiplication table to the divisions on the clock face. They begin to use other multiplication tables and recall multiplication facts, including using related division facts to perform written and mental calculations.* *Pupils work with a range of materials and contexts in which multiplication and division relate to grouping and sharing discrete and continuous quantities, to arrays and to repeated addition. They begin to relate these to fractions and measures (for example, 40÷ 2 = 20, 20 is a half of 40). They use commutativity and inverse relations to develop multiplicative reasoning (for example, 4 × 5 = 20 and 20 ÷ 5 = 4).*

3	Pupils write and calculate mathematical statements for division using the multiplication tables that they know, using mental and progressing to formal written methods. Use knowledge of multiplication facts and repeated addition to answer division questions, e.g. How many 3s are there in 39? Extending to use all tables that pupils know and to explore the idea of the remainder Pupils explore the use of scaling as a model for division, e.g. My ribbon is 24 cm long. Can you cut a ribbon 3 times shorter?  Pupils are introduced to the formal written method of short division with whole number answers, using the image of the array and place value apparatus initially.  Pupils progress to use the formal written method of short division 98 ÷ 7 becomes  Answer: 14	*Pupils develop efficient mental methods, for multiplication and division facts (for example, using 3 × 2 = 6, 6 ÷ 3 = 2 and 2 = 6 ÷ 3) to derive related facts (for example, 30 × 2 = 60, 60 ÷ 3 = 20 and 20 = 60 ÷ 3).* *Pupils develop reliable written methods for division, starting with calculations of two-digit numbers by one-digit numbers and progressing to the formal written methods of short division.* *Pupils solve simple problems in contexts, deciding which of the four operations to use and why. These include measuring and scaling contexts, (for example, four times as high, eight times as long etc.) and correspondence problems in which m objects are connected to n objects (for example, 3 hats and 4 coats, how many different outfits?; 12 sweets shared equally between 4 children; 4 cakes shared equally between 8 children).*
4	Pupils continue to use the number line to support **mental** division. Extend to 3 –digit divided by a 1- digit number 257 ÷ 7 Estimate first, use a number line to count on, if appropriate.  256 ÷ 7 = 36 r4 (r4 out of 7) **Using place value counters to help with short division**  Pupils continue to become fluent with the formal written method of short division with exact answers, e.g.  138 ÷ 6 = 23	*Pupils continue to practise recalling and using multiplication tables and related division facts to aid fluency.* *Pupils practise mental methods and extend this to three-digit numbers to derive facts, (for example 600 ÷ 3 = 200 can be derived from 2 x 3 = 6).* *Pupils practise to become fluent in the formal written method of short multiplication and short division with exact answers.* *Pupils practise and extend their use of the formal written methods of short division. They apply all the multiplication tables and related division facts frequently, commit them to memory and use them confidently to make larger calculations.*

	HAP (Year 4) Pupils 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, e.g. *432 school children go on a camping trip. Each tent sleeps five. How many tents will they need to take?* 432 ÷ 5 becomes  Answer: 86 remainder 2 *Answer: They will need to take 87 tents.*	