Old Town Infant School and Nursery

Coastal Learning PARTNERSHIP

MATHS MEDIUM TERM PLANNING

Year 1 – Multiplication and Division (Approximately 4 weeks)	
Objectives from Progression Document	**double numbers and quantities of objects to 20** **halve numbers and quantities of objects to 10** **calculate simple multiplication and division answers using concrete objects** **calculate simple multiplication and division answers using pictorial representations*** **calculate simple multiplication and division answers using arrays, with the support of the teacher** **solve one-step problems involving multiplication and division as above** **make connections between arrays, number patterns and counting in twos, fives and tens**
Previous Learning	**double numbers and quantities of objects up to 5+5 (ELG)** **recognise even and odd numbers to 10 (ELG)** **share even objects to 10, recognising that numbers can be split equally (ELG)** **solve real world mathematical problems with numbers to 10 and beyond ten**
Vocabulary	once, twice, three times, five times, multiply, multiply by, repeated addition, array, divide, divided by, left over, pair
Key fact(s)	To know that a pair is two objects, and those objects do not need to look exactly the same To know that an array is made from equal rows and equal columns To know that doubling is two times the number To know that 10 is two lots of (double) 5
Number facts for fluency	Double numbers up to 20 Count in multiples of 5 up to 50 (in order)
DfE Ready to Progress Guidance Pages https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/897806/Maths_guidance_KS_1_and_2.pdf	1NF-2 Count forwards and backwards in multiples of 2, 5 and 10 pages 19 - 23
NCETM Ready to Progress Exemplification https://www.ncetm.org.uk/classroom-resources/exemplification-of-ready-to-progress-criteria/	1NF-2
Problem Solving and Reasoning Skills Objectives	identify the operation needed to solve a one-step puzzle or word problem use arrays to help work out the answer with support of an adult
Pre-assessment:	EYFS doubling and sharing activity: E.g. Can they sort double, not double, and explain why using dominoes? Can they share out 10 sweets between 2 bears? Etc.

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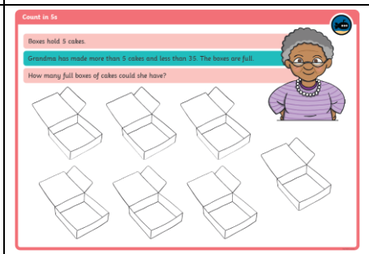
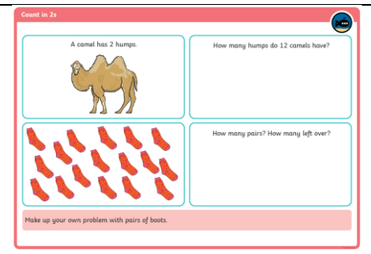
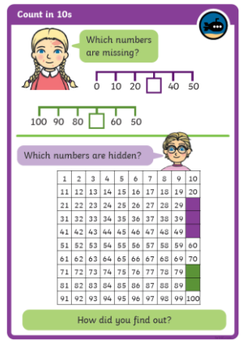
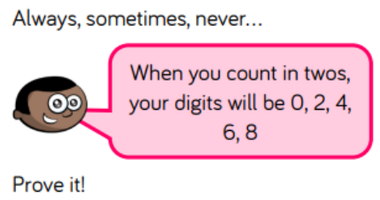
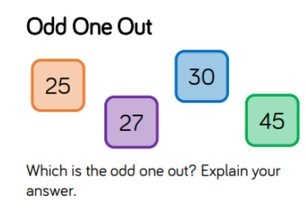
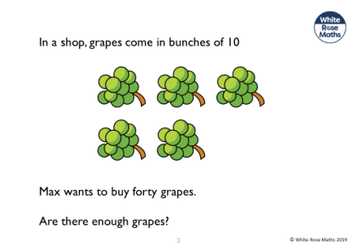
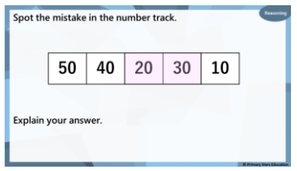
Sequence of Learning

White Rose Small Steps	Learning Intention	Key Questions	Sentence Stems	Problem-solving links	Comments	Extension and Greater Depth Opportunities
Count in 2s	**To count forwards and backwards in 2s**	How can you count the pairs? What pairs can you see/find? How can you use the number line/number grid to help you count in 2s? What patterns do you see when you count in 2s? When you count in 2s, what numbers will you say/not say? How many equal groups of 2 are there?	There are ___ in each pair. There are ___ pairs. There are ___ in total. There are ___ equal groups of 2. There are ___ altogether.	Saucer Sorter Interactive counting game Addition by 2, 5 and 10 A short video which demonstrates practical ways to develop skip counting by 2, 5 and 10. Using a 100 square and practical resources Caterpillar Ordering	Make sure children understand that a pair is two objects, and those objects do not need to look exactly the same. Children may count the number of pairs, rather than count in 2s. Children may count each object in a group, rather than counting in 2s.	 
Count in 10s	**To count forwards and backwards in 10s**	When you count in 10s, what number comes after ___? When you count in 10s, what number comes before ___? How many groups of 10 are there? What number is this? How many groups of 10 are there in ___? If you count in 10s from ___, will you say ___? Which digit stays the same/changes when you count in 10s?	There are ___ groups of ten. There are ___ altogether. There are ___ full ten frames. There are ___ in total.		Children may confuse teen numbers and multiples of 10, for example 13 and 30. Children may still rely on counting individual objects, for example counters, rather than using representations such as full ten frames to count in 10s.	 Rosie counts back from 50 in 2s. Amir counts up from 12 in 2s. 50, 48, 46, 44... 12, 14, 16... They say their numbers together. Who will say 30 first.
Count in 5s	**To count forwards and backwards in 5s**	Will you say when you count in 5s? Why/why not? How many 5s are there altogether? When you count in 5s, what number comes after ___? When you count in 5s, what number comes before ___? What patterns do you notice when you count in 5s? What do you notice about counting in 5s and counting in 10s?	There are ___ groups of 5. There are ___ altogether. There are ___ 5s. There are ___ in total. There are ___ 5s in 10.		Children may confuse 15 and 50, because they sound very similar. Children may not recognise the relationship between two 5s making a 10. The use of five and ten frames can help children to understand that a full row makes 5 and two 5s make 10.	 
Recognise equal groups	To recognise and describe equal groups	What does “equal” mean? How do you know that the groups are equal/unequal? Do the groups have to look exactly the same to be equal? Why/why not? How many equal groups are there? How many are there in each equal group? How can you make the groups equal?	There are ___ equal groups of ___. I know that the groups are equal/not equal because… To make the groups equal, I could…		If objects are arranged differently, children may not think that the groups are equal. Children may be less confident with more unfamiliar representations	 Mo counts up to 50 in 5s. Eva counts up to 50 in 2s. What numbers do they both say? Can you spot a pattern?
Add equal groups	To use repeated addition to add equal groups	Are the groups equal? How do you know? How many are there in each group? How many equal groups can you see? What can you use to show this? How many are there altogether? How can you write this as a number sentence?	There are ___ equal groups. There are ___ in each group. There are ___ altogether. There are ___ groups of ___. ___ + ___ + ___ + ___ + ___ = ___		Children need to be secure in recognising equal and unequal groups. Children may confuse the number of groups with the amount in each group, for example 2 groups of 5 rather than 5 groups of 2.	

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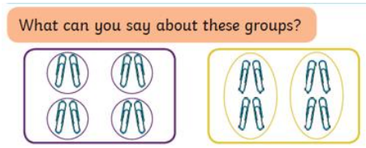
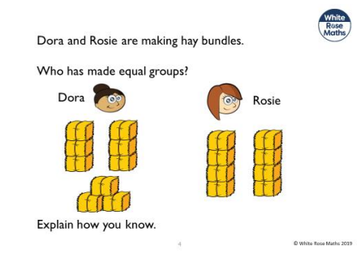
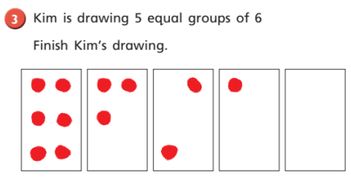
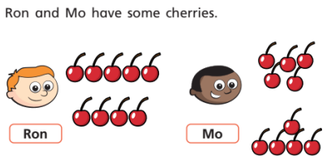
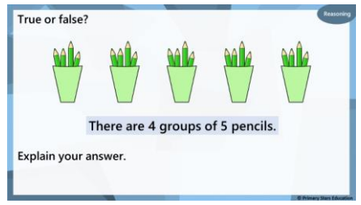
Make arrays	**To understand that arrays are made from equal rows and equal columns**	What is a column? Can you show me a column in the array? What is a row? Can you show me a row in the array? How many equal rows/columns are there? How many are there in each row/column? How many are there altogether? How can you write a number sentence to match the array?	There are ___ rows. There are ___ in a row. There are ___ in total. There are ___ columns. There are ___ in a column. There are ___ altogether.	Lots of Biscuits! (maths.org) Practical context for sharing and seeing arrays.	Children may confuse the language of column and row. Children may not arrange the rows or columns evenly, or leave a gap in the middle of the array. Children may not recognise that any objects or pictures can be an array.	Lollies cost 5p each. A pack of 3 lollies costs 13p. How much money do you save when you buy a pack of 3 lollies instead of 3 single lollies? If I start on 0 and count on in fives will I say the number 55? If I start on 4 and count on in twos will I say the number 17? If I start at 10 and count on in tens will I say 100? Using only 2p, 5p and 10p coins, can you show 20p? In how many different ways can you do this? Are you sure you have got them all? Explain how you know.
Make doubles	**To understand that doubling is 2 times the number**	What is double ___? How can you show me double ___? Is this a double? How do you know? How many equal groups are there? How many are there in each group? How many are there altogether? Is double ___ equal to ___? How do you know?	Double ___ is ___. ___ + ___ = ___ This is double ___. ___ is/is not a double. I know this because…	Doubling Fives (maths.org) Context to doubling multiples of 5. Enables noticing and describing patterns.	Children may not make/draw 2 equal groups. Children may think that double 4 is 44, because they see the digit twice.	
Make equal groups – grouping	**To put objects into groups of a given size**	Are the groups equal? How do you know? Do the groups have to be the same size/shape/pattern to be equal? How many are there altogether? How many are there in each group? How many groups are there? How many different ways can you put the ___ into equal groups?	The groups are equal/not equal because… There are ___ altogether. They can be put into ___ equal groups of ___. There are ___ groups.		When dividing, children may be more familiar with sharing from real-life experiences and may therefore confuse sharing with grouping. Children may be confused by groups that do not look similar, but they should be encouraged to focus on how many are in each group.	 Use concrete materials or pictures to complete the questions. Alex has 4 equal groups. Show me what Alex's groups could look like. Whitney has 3 unequal groups. Show me what Whitney's groups could look like.
Make equal groups – sharing	To share objects into equal groups	What does "sharing" mean? What does "sharing equally" mean? How many are there altogether? How many equal groups are you sharing them into? How many are there in each group? Are there any left over? Can you share the ___ into any other number of equal groups?	The ___ have/have not been shared equally. I know this because… There are ___ altogether. They are shared equally between ___ groups. There are ___ in each group.	Share Bears (maths.org) Delightful context to sharing. Also supports idea of even numbers.	Having just explored grouping in the previous step, children may confuse that knowledge with the new learning on sharing. When sharing, children may miss out some objects or place too many in one group.	   

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						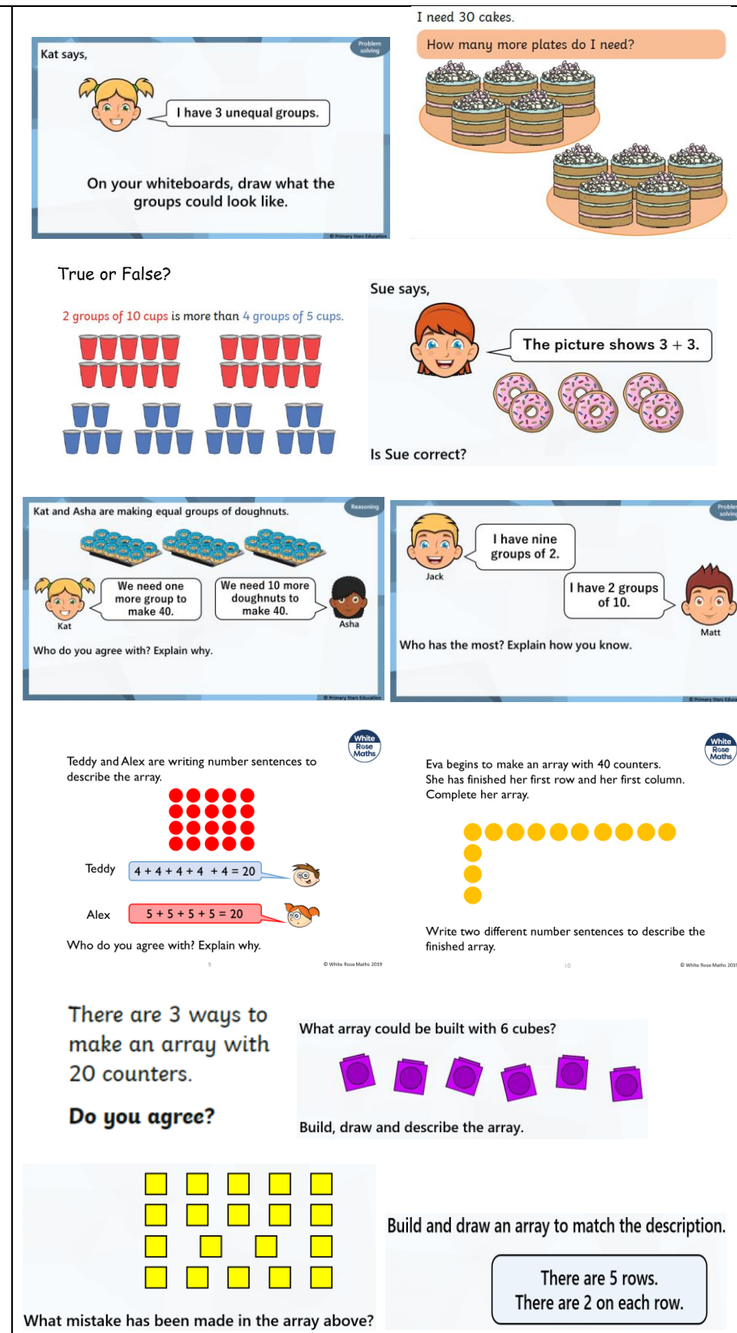

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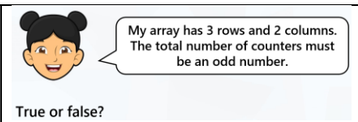
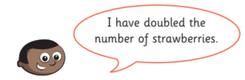
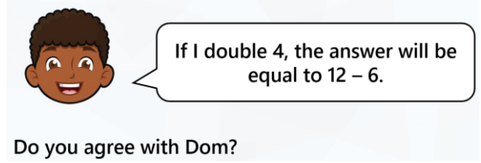
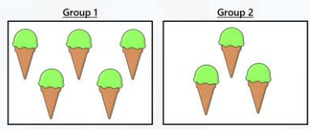
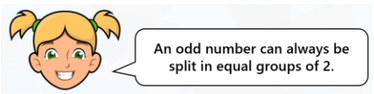
					 True or false? **Find 15 cubes. Can you make equal rows?**  It must have more than 1 row.  Do you agree with Mo?_____ Talk about it with a partner. Dom says,  Do you agree with Dom?  Double the amount shown will give an even number. True or false? Captain Conjecture says, 'I can double any number, but I can only halve some numbers'. Do you agree? Explain your reasoning.  Tommy and Jack each have the same number of sweets.  Tommy has 5 equal groups of 2 Jack has 1 equal group. How many sweets are in Jack's group? I am thinking of a number between 20 and 30 I can only make equal groups of 5 What must my number be? What happens when I try to make groups of 2 with it? What happens when I try to make groups of 10 with it? How could you make these groups equal?   True or false? Explain how you know.

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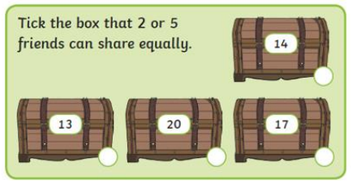
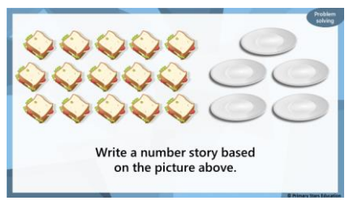
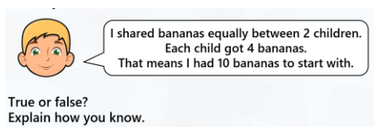
					Use 30 counters. a) How many equal groups of 2 can you make? b) How many equal groups of 5 can you make? c) How many equal groups of 10 can you make? Talk about your answers. Dom has a number of counters.  I have made seven equal groups of 2. How many counters does Dom have? Explain your answer. Tick the box that 2 or 5 friends can share equally.  Dora has 10 biscuits.  She wants to share them equally at her party. How many people could be at the party? There are 10 cakes and 2 boxes. An equal amount needs to be put into each box.  Jack: Put them into groups of 2 Eva: Share them into 2 groups. Who is correct? Explain your answer. White Rose Maths Use 30 counters.  a) Share the counters between 2 friends. How many counters does each friend get? b) Share the counters between 5 friends. How many counters does each friend get? c) Share the counters between 10 friends. How many counters does each friend get? 16 © White Rose Maths 2019   True or false? Explain how you know. Sarah is filling party bags with sweets. She has 20 sweets altogether and decides to put 5 in every bag. How many bags can she fill? How else could 20 sweets be put into bags so that every bag had the same number of sweets? How many bags would be packed each time?

Post-assessment:	WRH end of block Multiplication and Division assessment – snip as feel appropriate