Year 2 Maths Spring medium Term plan

Multiplication and Division:

NC Objectives:

•Recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers.

•Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.

•Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.

•Show that the multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.

Week	Small step	Key Questions	Notes and Guidance	Assessment
	Make equal groups - sharing	How many do you have to begin with? How many equal groups are you sharing between? How many are in each group? How do you know that you have shared the objects equally? ___ has been shared equally into ___ equal groups. I have ___ in each group. ___ groups of ___ make ____	Children divide by sharing objects into equal groups using one-to-one correspondence. They need to do this using concrete manipulatives in different contexts, then move on to pictorial representations. Children will be introduced to the '÷' symbol. They will begin to see the link between division and multiplication.	
	Make equal groups - grouping	How many do you have to begin with? How many are in each group? How many groups can you make? How long should your number line be? What will you count up in? _____ groups of _____ make _____	Children divide by making equal groups. They then count on to find the total number of groups. They need to do this using concrete manipulatives and pictorially in a variety of contexts. They need to recognise the link between division, multiplication and repeated addition.	
	Divide by 2	What do you notice when you group these objects into twos?	Children should be secure with grouping and sharing. They will use this knowledge	

		Is there a link between dividing by 2 and halving? What is different about sharing into two groups and grouping in twos? Can we write a multiplication sentence as well as a division sentence? What do you notice?	to help them divide by 2 They will be secure with representing division as an abstract number sentence using the division and equals symbol. Children should be able to count in 2s and know their 2 times table.	
	Odd and even numbers	Can you sort these objects (number pieces, ten frames, cubes, pictures etc) into an odd set and an even set? What makes these odd/even? How do you find out if ___ is an odd or even number? Can you find all the odd and even numbers on a 100 square? What do you notice?	Building on from Year 1, children should be able to recognise odd and even numbers. They will use concrete manipulatives to explore odd and even numbers and the structure of these.	
	Divide by 5	How can we represent the problem using objects/images? How does knowing your 5 times table help when dividing by 5? Circle all the multiples of 5 on a 100 square. What do you notice about the numbers? Can you explain the pattern? How does this help you to divide these numbers? When would we count in 5s?	During this step, children focus on efficient strategies and whether they should use grouping or sharing depending on the context of the question. They use their knowledge of the five times table to help them divide by 5 They will continue to see the = sign both before and after the calculation.	
	Divide by 10	What can we use to represent the problem? How does knowing your 10 times table help you to divide by 10? Circle all the multiples of 10 on a hundred square. What do you notice? Can you explain the pattern?	Children should already be able to multiply by 10 and recognise multiples of 10. They will need to use both grouping and sharing to divide by 10 depending on the context of the problem. Children start to see that grouping and counting in 10s is more efficient than	

		How many groups of 10 are there in ___ ?	sharing into 10 equal groups.	
Measurement: Time **NC Objectives** **•Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.** **•Know the number of minutes in an hour and the number of hours in a day.** **•Compare and sequence intervals of time**				
	O clock and half past	What do the numbers represent on the clock face? Which is the hour hand? Which is the minute hand? Where will the hour hand be at ____? Where will the minute hand be at ____? What do you notice about the minute hand at half past? Can you show me _____?	Children recap telling the time to o'clock and half past from Year 1 Children should be given the opportunity to create times using individual clocks with moveable hands. Children read and write times from given clocks.	
	Quarter past and quarter to	Where are the hands pointing to? Can we divide the clock face into four equal parts? Can we link this to fractions? If the minute hand is pointing at 3, how many minutes have past the hour? If the minute hand is pointing at 9, how many minutes until the next hour? Show me quarter past/to….	Children read and draw the time to quarter to and quarter past. Children use their knowledge of fractions and turns to identify quarter past and quarter to. Children should recognise that the hour hand also moves as the minute hand does. Therefore when the time is quarter past the hour, the hour hand will be just past the hour number and when the time is quarter to, the hour hand will be just before the hour number.	
	Telling Time to 5 minutes	Can we count in 5s? What does each number on the clock represent? How can we count round the clock? Are there any other way to say 15 past/to and 30 past/to?	Children read and show analogue time to 5 minute intervals. Children should be confident at counting in steps of 5 from 0 to 60 so they can then apply this to counting around the clock in fives and use this method to work out what time is	

		Where will the minute hand be at _____? Where will the hour hand be at _____? How do we know whether it is a 'past' or a 'to' time? Can you show _____ past/to _____?	shown. Children need to recognise that once the minute hand gets past 6 the time becomes 'to' the next hour, rather than 'past' the hour.	
	Minutes in an hour, hours in a day	What are the hours of the day? How many are there? Are there more or less hours in the morning than the afternoon? How can you find out how many minutes are in an hour/half an hour/quarter of an hour? Are there more/less minutes in _____ than _____? How many hours make up _____ minutes? What is the most efficient way to count minutes in hours and vice versa? What times table can you use to help you?	Children learn there are 24 hours in a day and 60 minutes in an hour. Children use clocks to convert minutes to hours and minutes and vice versa. Children should be encouraged to use their knowledge of counting in fives to help them convert.	
	Find durations of time	What is the start time? What is the end time? How can we show this on the clock? How long did the event last? How did you work out the duration? Are there any other methods for working out duration?	Children identify when an event starts and when an event finishes. They use these times to work out how long an event lasted. Children should be confident in explaining what 'duration' means. Children use individual clocks and number lines to help them work out the duration of an event.	
	Compare durations of time	Which is longer 1 minute or 1 hour? If you know this, what else do you know?	Children compare times using 'longer' and 'shorter'. They order times from longest to shortest and vice versa. Children then	

		How can you order the times? How many minutes does each TV show last? How can we count the minutes efficiently? How much longer is Pop World than Animal Patrol? How can we efficiently work out the length of time each person works?	compare durations of time taken by particular events or tasks given the start and end times. They explore ways to work out durations of time most efficiently.	
Geometry: Properties of Shapes **NC Objectives:** **•Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.** **•Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.** **•Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid.]** **•Compare and sort common 2-D and 3-D shapes and everyday objects.**				
	Recognise 2d and 3d shapes	What shape is this? If I turn it around, now what shape is it? Can you draw around any of the faces on your 3D shapes? Which 2D shapes can you make? Are there any you can't draw around?	Before learning about their properties, children need to recognise and name both 2D and 3D shapes and to be able to differentiate between them. They need to begin to understand that 2D shapes are actually flat and so cannot be handled or picked up. Children also need to be able to recognise 2D shapes in different orientations..	
	Count sides on 2d shapes	What is a side? Are all sides straight? How can you check that you have counted all sides? Do all four-sided shapes look the same?	In this step, children need to recognise that there are both straight sides and curved sides. Children should be encouraged to develop strategies for accurate counting of sides, such as by marking each side as it has been counted. Children also need to understand that not all same-sided shapes look the same, such as with irregular 2D shapes.	

	Count vertices on 2d shapes	Show me a vertex. Can you identify the vertices in this shape? Would this be a vertex? Explain why. If I have ____ vertices, what could my shape be? What won't it be?	Children are introduced to the term vertices. They will understand that a vertex is where two lines meet at a point. By exploring the non-concept, e.g. a perpendicular line, they will recognise that corners are vertices and be able to count them in real-life 2D shapes.	
	Draw 2d shapes	Where are you going to start drawing the shape? In the middle of a side? At a vertex? Which is the most efficient way? Can you make the shape on a geoboard? How many sides has the shape got? Can you draw a rectangle? Can you now draw a larger rectangle?	Children use their knowledge of properties of shape to accurately draw 2D shapes. Starting with geoboards, children make shapes with elastic bands to look carefully at the number of sides and vertices. They then use rulers and straight edges to draw the shapes on squared or dotty paper.	
	Lines of symmetry	What is a vertical line of symmetry? What does vertical mean? Which is the odd shape out? How do you know? What resources could you use to check if a shape has a vertical line of symmetry?	In the previous small steps, children have identified and described 2D shapes according to the number of sides and vertices. They now need to be introduced to the concept of symmetry. There are a range of practical resources that would introduce them to the concept of shapes being halved on their vertical line of symmetry, such as mirrors, GeoBoards and paper folding.	
	Sort 2d shapes	How have you sorted your shapes? How do you know you have sorted your shapes correctly? Which method have you used to sort your shapes?	Children need to be able to recognise and name 2D shapes including circle, square, triangle, rectangle, pentagon, hexagon and octagon using a range of different orientations and real life objects. Children need to be able to count the number of	

			sides and vertices on 2D shapes including circle, square, triangle, rectangle, pentagon, hexagon and octagon. Children may have been introduced to the Venn diagram in cross curricular work so they can focus on the shapes within this step.	
	Make pattern with 2d shapes	Can you explain the pattern? How many time does the pattern repeat? How are these patterns similar? How are these patterns different? How can you work out which shape will come ___th?	At this stage children should be able to name and draw 2D shapes and be familiar with their properties. Children should recognise symmetry within shapes and be shown shapes in different orientations. Children should be encouraged to place the shapes in different orientations when making patterns and recognise that it is still a square, triangle etc. Squares do not become diamonds when turned sideways.	
	Count faces on 3d shapes	What do we mean by the 'face' of a shape? What is the difference between a face and a curved surface? What real life objects have 6 faces like a cube? Does a cuboid always have 2 square faces and 4 rectangular faces? Which 2D shapes can you see on different 3D shapes? How can you make sure that you don't count the faces more than once?	Children will use their knowledge of 2D shapes to identify the shapes of faces on 3D shapes. To avoid over counting the faces children need to mark each face in some way. Children need to be able to visualise the 3D shape from a 2D representation on paper. Cones should be described as having 1 face and 1 curved surface; cylinders as having 2 faces and 1 curved surface and spheres having 1 curved surface.	
	Count edges on 3d shapes	What do we mean by the 'edge' of a shape? How can you make sure that you don't count the edges more than once? What do you notice about the shapes	Children will use their knowledge of faces and curved surfaces to help them to identify edges on 3D shapes. They need to be discretely taught that an edge is where 2 faces meet or where a face and a curved	

		with ____ edges?	surface meet. To avoid over counting the edges children need to mark each edge in some way. Children need to be able to visualise the 3D shape from a 2D representation on paper.	
	Count vertices on 3d shapes	What do we mean by the 'vertices' of a shape? How can you make sure that you don't count the vertices more than once? How many edges meet to make a vertex on a 3D shape? How many sides meet to make a vertex on a 2D shape?	Children will use their knowledge of edges to help them to identify vertices on 3D shapes. They need to be discretely taught that a vertex is where 2 or more edges meet. Note – a cone has an apex not a vertex, because it has one curved surface. To avoid over counting the vertices children need to mark each edge in some way. Children need to be able to visualise the 3D shape from a 2D representation on paper	
	Sort 3d shapes	How have you sorted your shapes? How do you know you have sorted your shapes correctly? Which method have you used to sort your shapes? Can you sort your shapes in a different way? an you group your solids by shape, type of faces and size?	Children need to be able to recognise and name 3D shapes including cube, sphere, cuboid, cone, cylinder, triangular prism and square-based pyramid using a range of different orientations and real life objects. Children need to be able to count the number of sides and vertices on 3D shapes including cube, sphere, cuboid, cone, cylinder, triangular prism and square-based pyramid. In this small step, children should have access to a range of real life objects to sort and compare.	
	Make Patterns with 3d shapes	Where can you see real life patterns with 3D shapes? Can you explain your pattern to a partner? Does the shape always have to be a	Children should be familiar with the names and properties of 3D shapes at this stage. This step allows opportunities to justify choices in pattern making and reinforce shape vocabulary. Discussion around the	

		certain way up? Can you work out what shape would be the ___th?	orientation of the shape should be encouraged by making patterns with the same shape as per the example with the cones below. A wide range of examples of shapes should be used, including, Polydron, cereal boxes, different sized balls, food cans etc.	