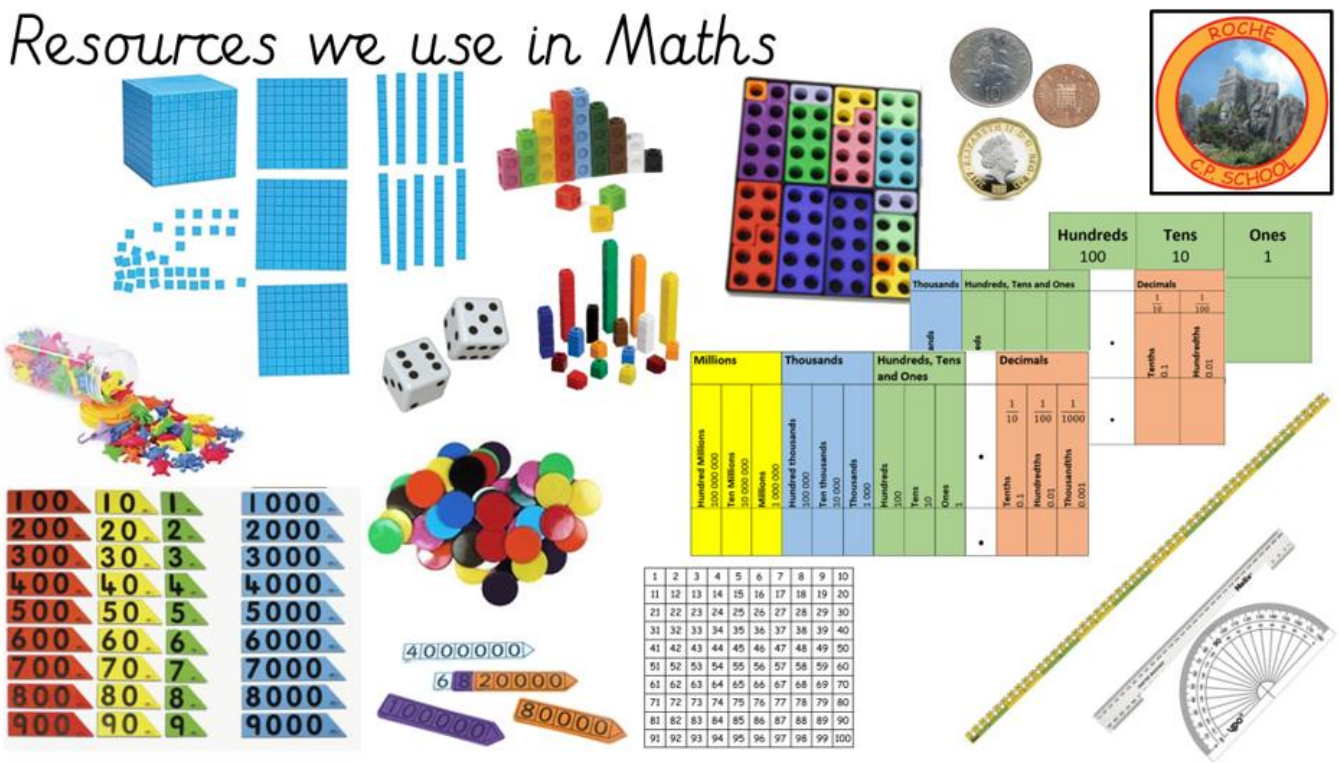
Roche CP School Long Term Maths Plan – EYFS 2021/22

Long Term Plan:	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	PV, A+S	PV, A+S	PV, A+S	PV, A+S	PV, M+D	PV, SSM
ELGs:	**ELG Number=** Children at the expected level of development will: - Have a deep understanding of number to 10, including the composition of each number; - Subitise (recognise quantities without counting) up to 5; - Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.					
	ELG Numerical Patterns= Children at the expected level of development will: - Verbally count beyond 20, recognising the pattern of the counting system; - Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; - Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.					
Early Mathematics (NCETM)	There are six main areas that collectively underpin children's early mathematical learning, and which provide the firm foundations for the maths that children will encounter as they go up the years in primary school. **They are:** **Cardinality and Counting:** understanding that the cardinal value of a number refers to the quantity, or 'howmanyness' of things it represents. **Comparison:** understanding that comparing numbers involves knowing which numbers are worth more or less than each other. **Composition:** understanding that one number can be made up from (composed from) two or more smaller numbers.					

	Pattern: looking for and finding patterns helps children notice and understand mathematical relationships. **Shape and Space:** understanding what happens when shapes move, or combine with other shapes, helps develop wider mathematical thinking. **Measures:** comparing different aspects such as length, weight and volume, as a preliminary to using units to compare later. https://www.ncetm.org.uk/resources/51439
Counting Principles:	**The one-one principle:** This involves children assigning one number name to each object counted. **The stable-order principle:** Children understand counting needs to be in a certain order. **The cardinal principle:** Children understand that the number name assigned to the final object in a group is the total number of objects in that group. **The abstraction principle:** This means children know anything can be counted. **The order-irrelevance principle:** This involves children understanding the order that we count objects in doesn't matter and there will still be the same number.

Key Language:	**Cardinal** - The number that indicates how many there are in a set. **Classification** – The identification of an object by specific attributes, such as colour, texture, shape or size. **Conservation** (of number) – The recognition that the number stays the same if none have been added or taken away. **Numeral** - The written symbol for a number; e.g. 3, 2, 1 **Ordinal** - A number denoting the position in a sequence e.g. 1st, 2nd, 3rd, etc or page 1, page 2, page 3... **Partition** - Separate a set into two or more subsets e.g. Partition a set of socks into plain and patterned. **Subitise** - Instantly recognise a small quantity, without having to count how many there are. **Number** - Number can be: • a count of a collection of items e.g. three boxes, • a measure e.g. of length or weight, or • a label e.g. the number 17 bus **Quantity** - The amount you have of something e.g. a cup of flour, three boxes, half an hour.

Resources:	 Number Blocks Videos. https://www.bbc.co.uk/cbeebies/watch/numberblocks-the-one-song NCETM Number Blocks materials. https://www.ncetm.org.uk/numberblocks NRICH Activities: https://nrich.maths.org/13371 Classroom Secrets. Lots of pictorial support. https://classroomsecrets.co.uk/category/eyfs/maths-numbers/ White Rose Reception 2021Guidance. https://whiterosemaths.com/resources/early-years-resources/reception-sol/ White Rose Interactive Whiteboard Resources. https://whiterosemaths.com/resources/classroom-resources/interactive-whiteboard-resources/

Half Term	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7
Autumn 1	**Transition Days** 3 days of 10 chn in	**Baseline Assessments**	**Baseline Assessments**	**Baseline Assessments** Number focus = 0 and 1 (1 week only)	**Baseline Assessments** Number focus = 2 (Week 1)	Number focus = 2 (Week 2)	Number focus = 3 (Week 1)
Arithmetic Starters	Count forwards and backwards up to 10						
Autumn 2	Number focus = 3 (Week 2)	Number focus = 4 (Week 1)	Number focus = 4 (Week 2)	Number focus = 5 (Week 1)	Number focus = 5 (Week 2)	Bonds to 5 and subtraction facts to 5	Bonds up to 5 (Independent assessment week - What makes 1,2,3,4 or 5?)
Arithmetic Starters	Count forwards and backwards up to 20						
Spring 1	Number focus = 6 (Week 1) ***OR revision of Week 7 of AU2?***	Number focus = 6 (Week 2)	Number focus = 7 (Week 1)	Number focus = 7 (Week 2) **Subitising not to go beyond 6**	Number focus = 8 (Week 1)	Number focus = 8 (Week 2)	Number focus = 9 (Week 1)
Arithmetic Starters	Count forwards and backwards up to 30						
Spring 2	Number focus = 9 (Week 2)	Number focus = 10 (Week 1)	Number focus = 10 (Week 2)	Some bonds to 10 LA to 5	Doubles (Independent assessment week)		
Arithmetic Starters	Count forwards and backwards up to 40						

Summer 1	Comparing numbers (link to comparing length, weight and capacity)	Odds and evens	Doubles (Exploring the link between odds and evens)	Sharing numbers up to ten. Halving and sharing into two equal groups	Sharing numbers up to ten Splitting into equal groups (1,5 and 10) Include sharing with left-overs		
Arithmetic Starters	Count backwards within 40 – focus on bridging 10 e.g. count back from 23, 46.						
Summer 2 (SU2 Homework = learn 2D and 3D shapes)	Assessment + revision Week 1	Assessment + revision Week 2	Teen numbers **County data submission?**	Select, rotate and manipulate shapes	Compose and decompose shapes	Continue, copy and create repeating patterns	Transition week?
Arithmetic Starters / Y1 prep	Numberblocks teens videos – dienes and tens frames, digit formation etc…						

Weekly Planning Structure: (5 direct teaching times for Maths a week.)

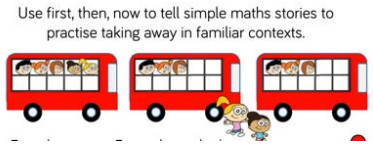
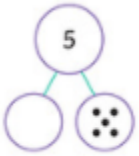
Remember to show parents the number of the week. Occasionally ask for Maths homework where they will also explore the number at home and bring in evidence for their Learning Journey.

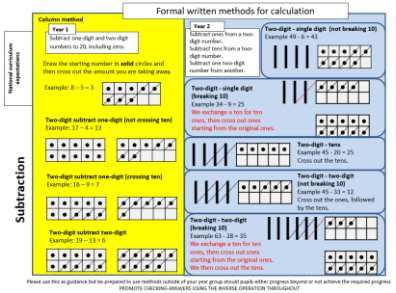
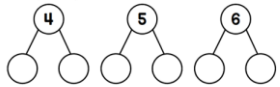
Week 1

Monday	Tuesday	Wednesday	Thursday:	Friday:
Place Value	**Place Value**	**Place Value**	**Place Value**	**Place Value**
Day 1:	**Day 2:**	**Day 3:**	**Day 4:**	**Day 5:**
1. Number nursery rhyme. (Links to 5-a-day) 2. Arithmetic starter. (Look at long term plan for the weeks focus) 3. Number Blocks Video. 4. Twinkl Number of the week PowerPoint. 5. Also show the number in words and with Numicon. 6. Number formation to be learnt alongside a song.	1. Repeat number nursery rhyme. 2. Arithmetic starter. 3. Watch Number Blocks video again – unpick it in more detail. 4. Practical work with dienes. 5. Challenges on Twinkl.	1. Repeat number nursery rhyme. 2. Arithmetic starter. 3. Look at Working Wall to check for mistakes (Shannon to add on/take off. Possibly link in shape.) 4. Practical work with tens frame.	1. Anno's Counting Book. (Links to 5-a-day) 2. Arithmetic starter. 3. Number Blocks all about the number * PowerPoint 	1. Number themed book fictional book. (Links to 5-a-day) 2. Arithmetic starter. 3. Whole class – NumBots activity

Carrousel group work activities: (Not differentiated. Mixed Groups.) Number of the week challenges: • Exploring the number of the week in the indoor and outdoor environment. • Variation of pictorial representations. (Inc. matching numeral to quantity, representing on a tens frames etc…) • Number formation.	**Carrousel group work activities:** Number of the week challenges: • Exploring the number of the week in the indoor and outdoor environment. • Variation of pictorial representations. • Number formation.	**Carrousel group work activities:** Number of the week challenges: • Exploring the number of the week in the indoor and outdoor environment. • Variation of pictorial representations. • Number formation.	**Activities indoors and outdoors in CP-** NCETM/White Rose – PowerPoint for ideas for activities for CP enhancements. Practical/real based activity e.g. wonky spiders for the No.8. Tic Tac Toe for No.3. Pairs of socks on a washing line for No.2	**Activities indoors and outdoors in CP-** NCETM/White Rose – PowerPoint for ideas for activities for CP enhancements. Practical/real based activity e.g. wonky spiders for the No.8. Tic Tac Toe for No.3. Pairs of socks on a washing line for No.2 NumBots on iPads

Week 2

Monday	Tuesday	Wednesday	Thursday	Friday
Day 1: **Subitising** Introduce Number Blocks Subitising video.  Show 'quick images' asking how many.  Subitise on fingers – E.g. Show me 4 fingers, now show me four in a different way. (Preparation for counting considered and practised before different representations are covered.)  Big push on 5 fingers on one hand so when doing numbers above 5 they don't start by counting the five fingers on the complete hand, they can count 5,6,7… Followed by games that link to the <u>number of the week</u>	**Day 2:** **Composition (addition)** Tens Frame work. Making arrangements of the number of the week practically in the tens frame. Partition into two groups and know that they combine to make the total using the double sided counters. Numicon towers- layer up numicon pieces of the same total. Putting things into two containers in different ways – Link to sharing, are the containers fair/equal/the same? Play 'Bunny Ears'- with your two hands, show me 5 fingers. Can you do it a different way? Play 'Spill the Beans'- double sided counters,	**Day 3:** **Recalling subtraction facts** (We will have to teach what subtraction is and how to subtract before we do recall) Practise taking away in **<u>different contexts.</u>** Encourage children to physically remove the items and then count or subitise how many are left. E.g. with tens frames  Ask children to show 5 fingers and then show 4. Prompt them to notice one less is the same as taking away. Extend to taking away 2 or 3 fingers and noticing how many are left. Ask the question, if we have 5 fingers up, do we need to	**Day 4:** Consolidation of Tuesday + Wednesday Tens Frame work. Link Tens Frame now to Pictorial work with abstract no. sentences alongside. Independent work time for pictorial work. Recap as a whole class their pictorial findings and teacher to model writing no. sentences in order. Do the children start to see the pattern? 0 + 4 = 4 1 + 3 = 4 2 + 2 = 4 3 + 1 = 4 4 + 0 = 4 4 – 0 = 4 4 – 1 = 3 4 – 2 = 2 4 – 3 = 1	**Day 5:**  **Problem solving / Reasoning** Start with Part / Whole (dienes, numicon) Talk about the different arrangements within the whole. What can you see? Can you see any addition/subtraction sentences? Model as children say them. Cross off/take away dienes for subtraction. Complete a 1-2 of questions as a whole class together before problem solving / reasoning in Continuous Provision. Modelling of strategies very important!

such as: • Large floor dominos • Dice games where you deside how many spaces to move • Bingo • Large dices outside • Spinners with dots • NumBots   Subitising games with less common arrangment of objects e.g. kims game. Subitising with everyday objects.	throw them and see how many of each type and how many altogether.	put them all down and then count to four again? Practical Tens frames work with counters.	4 – 4 = 0 Challenges: Can they complete missing number versions? E.g. ? + 3 = 4 Can they complete with the moved equals sign? E.g. 4 = 3 + 1 **Intervention for children who are **not secure** on the number of the week or composition.** 	Jack rolled 2 dice and scored 10  Amir scored less than Jack. One of Amir's dice showed 5.  What other number could Amir have rolled? Is there more than one answer? Are there any numbers Amir could not have rolled? **Pirate Treasure** Pick a number card and count out the corresponding number of gold coins. One player covers their eyes whilst the second 'steals' some of the coins, hiding them in their hand. The first player then has to work out how many coins have been stolen.  White Rose maths 'Digging Deeper' resources. **Dot Plates** Provide children with dot plates or cards from 0 to 5  Ask the children to arrange the 6 plates so that they have: • a pair of plates with a total of 4 dots • a pair of plates with a total of 5 dots • a pair of plates with a total of 6 dots  Is there more than one way to solve the problem? **Intervention for children who are **not secure** on the number of the week or composition.**

Continuous Provision	ALL TO LINK TO NUMBER OF THE WEEK. Number of the week table in the maths area with different representations of the number of the week. No. cards available up to the value of number of the week for children to match objects and pictures. Money - things in the role play cost the number of the week! Link in 5 a day if you can with songs, rhymes or stories for any of the numbers. Maths games on IWB. CP ideas from White Rose/NCETM Outside maths games. See SS weekly planning.
Assessment	**Formative:** Simple tick sheet for key worker adults. They will include: Number of the week (formation and counting) Green pen opportunities where appropriate. Observations on post it's and photos by all adults for 1:1 Learning Journey Time. **Summative:** Use of Nursery assessments, parent home visits and baseline activities to get an accurate start point. Shannon to upload assessments onto Target Tracker. (1:1 conferencing and cold independent tasks e.g. Advent Calendar) Use of Target Tracker to show attainment and progress termly by the teacher and SLT.
Links to KS1 Maths	Strong emphasis on Number and the 4 operations. Practical, Pictorial and Abstract approach. Maths vocabulary = key! Fluency Mathematical activities.

	Problem Solving incorporated throughout. Reasoning questions to be used consistently and embedded into each day.

Further Information:

Cardinality and Counting: understanding that the cardinal value of a number refers to the quantity, or 'howmanyness' of things it represents.

Reminders:

- To count forwards and backwards as well as counting from different starting points to help long term memory.
- The chn will need to count things that are the same, things that are different in size/colour, things they cannot see e.g. sounds/actions, things that cannot be moved e.g. picture on a screen/in a book.
- Encourage subitising for numbers up to 5.
- Children need to be able to match the number symbol with a number of things. Look for opportunities to show them a range of symbols for one number.
- Reminder that if the objects are moved around it is still the same number.

Comparison: understanding that comparing numbers involves knowing which numbers are worth more or less than each other.

- More than and less than of a collection of things. Make them noticeably different to start with. Challenge them by using different sized items. Encourage reasoning e.g. this group has more because…
- Children to know when groups are equal. Encourage reasoning. E.g. How do you know they are equal? Links to odd and even numbers.
- One more and one less. Links to odd and even numbers again, one more than an odd number is an _____ number

Composition: understanding that one number can be made up from (composed from) two or more smaller numbers.

- Part - Whole. Encourage exploration of all the ways that 'three' can be and look. It is not just about number bonds. Chn need to explore arranging them in different ways too.
- Partitioning a number into 2 groups. When they are recombined they make the same total. (The 'parts' make the 'whole').
- Identifying pairs of numbers that make a total.
- Partitioning numbers into more than 2 groups. E.g. 6 = 2 + 1 + 3

- Number Bonds

Pattern: looking for and finding patterns helps children notice and understand mathematical relationships.

- Focus = repeating patterns. (Use a range of resources in and out of the classroom for this. As well as resources look at patterns for movement, sound, link in Phonics, rhyming etc…
- Continuing an AB pattern (Remember it can be based on colour, size or orientation.)
- Copying an AB pattern
- Make their own AB pattern
- Spotting an error in an AB pattern
- Identifying the unit of 'repeat'
- Continuing a more complex patterns e.g. ABC, ABB, ABBC, AABB etc…
- Continuing a pattern that ends mid-unit e.g. ABBABBAB?
- Making their own more complex patterns
- Spotting an error in a more complex pattern
- Symbolising the pattern e.g. if it was a pattern using different coloured dinosaurs they would symbolise it by coloured dots on a piece of paper.
- Showing the same repeating pattern but using different materials.
- Making a pattern that repeats around a circle. Paper plate great to use.
- Making a pattern around a border with fixed amount of places. This is very challenging to see if there pattern works.
- Pattern spotting around us in the environment.