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| **Educational Programme for MATHEMATICS** | | | | **MATHEMATICS** | | | | | |
| Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be  able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By  providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames  for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is  important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including  shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot  connections, ‘have a go’, talk to adults and peers about what they notice and not be afraid to make mistakes. | | | |
| **Key Learning Linked to MATHEMATICS**  **Rote Counting**  **• Rote count from 1.**  **• Rote count on from a given number between 1 and**  **20.**  **• Rote count back from 5 to 1 then from 10 to 1.**  **• Rote count back from a given number between 1**  **and 20.**  **• Know what number comes before, or after a given**  **number.**  **• Say a number between two given numbers.**  **• Rote count beyond 20.**  **Recognition**  **• Recognise and identify numerals 0 to 20. • Select the numeral that represents a set of objects.**  **• Order numerals 0 to 20.**  **Counting Items**  **• Understand that counting is to find out how many.**  **• Use one to one correspondence when counting.**  **• Understand the last number said is the number in**  **the set.**  **• Count up to 20 objects, pictures, sounds and**  **actions.**  **• Understand and use conservation of number.**  **• Use the word ‘zero’ to represent ‘none’.**  **• Compare two sets of different objects saying which**  **set is more, greater, fewer, less, same, equal.**  **• Order three or more sets of objects.**  **• State without counting (subitise) quantities within 5.**  **• Make a sensible guess of quantities within 10.** | | **Sense**  **• Partition a set of objects in different ways**  **using the terminology part - part – whole.**  **• Explore the patterns in odd and even**  **numbers.**  **• Understand that ‘teen’ numbers are a group**  **of 10 plus another number.**  **• Understand 20 is the same as two groups of**  **10.**  **• Recognise repeating patterns in the counting**  **sequence i.e. 6, 7, 8, 9; 16, 17, 18, 19; 26, 27,**  **28, 29.**  **Ordinal Numbers**  **• Understand and use ordinal numbers.**  **Fractions**  **• Understand that sharing is splitting an**  **amount into equal parts.**  **• Understand that halving is sharing into two**  **equal parts.**  **• Understand that doubling is adding the same**  **number to itself.**  **• Automatically recall double facts to 10.**  **Graphics**  **• Represent amounts in their own ways.**  **• Represent their thinking in their own ways.**  **• Talk about their representations.**  **• Write numerals 0-9, 10-20.** | | | | | **Calculating**  **• Understand the concept of addition by practically**  **combining sets of objects to find how many and use**  **the terminology part – part – whole.**  **• Understand the concept of subtraction by practically**  **removing one amount from within another to find**  **how many are left and use the terminology part –**  **part – whole.**  **• Relate subtraction to addition in practical situations**  **using the terminology part – part – whole.**  **• Identify one more and one less than a given number.**  **• Identify two more and two less than a given number.**  **• Add two single-digit numbers totalling up to 10, using**  **practical equipment.**  **• Add two single-digit numbers totalling greater than**  **10, using practical equipment.**  **• Subtract a single-digit number from a** **number up to**  **10, using practical equipment.**  **• Subtract a single-digit number from a number greater**  **than 10, using practical equipment.**  **• Automatically recall addition and subtraction facts up**  **to 5 and some addition and subtraction facts to 10.**  **Vocabulary**  **• Number, order, count, pattern, next, forwards,**  **backwards.**  **• More, less, fewer, altogether, equals, the same as,**  **how many, too many, lots of, not enough, fewer than,**  **before, after.**  **• Zero, one, two, three…** | | |
| **Shape**  **• Use everyday language to talk about**  **shapes in the environment.**  **• Build and make models with 3D shapes.**  **• Create patterns and pictures with 2D**  **shapes.**  **• Name common 2D shapes (circle,**  **triangle, square, rectangle, oblong).**  **• Name common 3D shapes (sphere, cube,**  **cuboid, cone).**  **• Talk about using mathematical language**  **(straight, curved, sides, flat, solid).**  **• Sort shapes according to their own**  **criteria.**  **• Know that shapes can appear in different**  **ways and be different sizes.**  **Space**  **• Understand and use positional language**  **in everyday situations.**  **• Understand and use ordinal numbers**  **when describing position.**  **• Understand and use the language of**  **movement/direction.**  **• Recognise patterns made of objects,**  **numbers and shapes.**  **• Describe patterns made of objects,**  **numbers and shapes.**  **• Create and describe their own patterns**  **made of objects, numbers and shapes.** | | **Distance**  **• Understand that measures of distance can**  **have different names including length,**  **width, height.**  **• Compare two objects of different length.**  **• Compare two objects of different width.**  **• Compare two objects of different height.**  **• Understand and use language of**  **comparison, (e.g. wider/narrower;**  **longer/shorter; taller/shorter).**  **• Order three objects of different**  **length/width/ height.**  **• Understand and use language of**  **comparison between three objects, (e.g.**  **widest/narrowest; longest/shortest;**  **tallest/shortest).**  **• Find an object of similar length, width,**  **height. Understand the concept of the**  **conservation of length, width, height.**  **• Use uniform non-standard units to**  **measure length, width, height.**  **Weight**  **• Understand the measurement of**  **weight(heavy/light).**  **• Compare two objects of different weights.**  **• Understand and use language of**  **comparison, (e.g. heavier/lighter).**  **• Understand the concept of conservation of**  **weight.**  **• Use uniform non-standard units to**  **measure weight.** | | | | | **Volume/Capacity**  **• Understand the measurement of volume/capacity (empty/nearly**  **full).**  **• Compare two of the same container holding different amounts.**  **• Understand and use language of comparison, (e.g. empty/full,**  **more/ less, most/least).**  **• Order three of the same container holding different amounts.**  **• Understand and use the language of comparison of three of the**  **same container holding different amounts (e.g. most/least).**  **• Understand the concept of conservation of volume/capacity.**  **• Use uniform non-standard units to measure volume/capacity.**  **Money**  **• Understand that we need to pay for goods.**  **• Talk about things they want to spend their money on.**  **• Talk about different ways we can pay for things.**  **• Recognise that there are different coins.**  **• Recognise 1p coin.**  **• Use 1p coins to pay for items.**  **Time**  **• Talk about significant times of the day, (e.g. home time, lunch time**  **snack time, bed time, etc).**  **• Use the language of comparison when talking about time, (e.g.**  **longer/shorter; faster/slower).**  **• Understand and use language (e.g. before, after, yesterday, today,**  **tomorrow).**  **• Sequence two or three familiar events and describe the sequence.**  **• Know the names of the days of the week.**  **• Say names of days of the week in order.** | | |
| **What this Looks like in EYFS** | | | | | | | | | |
| **Autumn 1**  **Where do I belong? Me and my world**  **WHITE ROSE MATHS and MASTERING NUMBER SESSIONS TO DEVELOP FLUENCY** | | | | | | | | | |
| **BASELINE** | | **BLOCK 1 2 weeks**  **Match, Sort, Compare**  Step 1 Match objects  Step 2 Match pictures and objects  Step 3 Identify a set  Step 4 Sort objects to a type  Step 5 Explore sorting techniques  Step 6 Create sorting rules  Step 7 Compare amounts  BLOCK 1  Match, Sort, Compare | | | | | **BLOCK 2**  **Talk about Measure and Pattern**  Step 1 Compare size  Step 2 Compare mass  Step 3 Compare capacity  Step 4 Explore simple patterns  Step 5 Copy and continue simple patterns  Step 6 Create simple patterns | | |
| **Autum 2**  **What do we celebrate? Sparkle and Shine**  WHITE ROSE MATHS and MASTERING NUMBER SESSIONS TO DEVELOP FLUENCY | | | | | | | | | |
| **BLOCK 3**  **It’s Me 1,2,3**  **Step 1 Find 1, 2 and 3**  **Step 2 Subitise 1, 2 and 3**  **Step 3 Represent 1, 2 and 3**  **Step 4 1 more**  **Step 5 1 less**  **Step 6 Composition of 1, 2 and 3** | | **BLOCK 4 CIRCLES and TRIANGLES**  **Step 1 Identify and name circles and triangles**  **Step 2 Compare circles and triangles**  **Step 3 Shapes in the environment**  **Step 4 Describe position** | | | | **BLOCK 5 1,2,3,4,5**  **Step 1 Find 4 and 5**  **Step 2 Subitise 4 and 5**  **Step 3 Represent 4 and 5**  **Step 4 1 more**  **Step 5 1 less**  **Step 6 Composition of 4 and 5**  **Step 7 Composition of 1−5** | | | **BLOCK 6 Shapes with 4 sides**  **Step 1 Identify and name shapes with 4 sides**  **Step 2 Combine shapes with 4 sides**  **Step 3 Shapes in the environment**  **Step 4 My day and night** |
| **Spring 1**  **Where am I going and how will I get there?**  WHITE ROSE MATHS and MASTERING NUMBER SESSIONS TO DEVELOP FLUENCY | | | | | | | | | |
| **BLOCK 1 Alive in 5**  **Step 1 Introduce zero**  **Step 2 Find 0 to 5**  **Step 3 Subitise 0 to 5**  **Step 4 Represent 0 to 5**  **Step 5 1 more**  **Step 6 1 less**  **Step 7 Composition**  **Step 8 Conceptual subitising to 5** | | | **BLOCK 2 Mass and Capacity**  **Step 1 Compare mass**  **Step 2 Find a balance**  **Step 3 Explore capacity**  **Step 4 Compare capacity** | | | | **BLOCK 3 Growing 6,7 and 8**  **Step 1 Find 6, 7 and 8**  **Step 2 Represent 6, 7 and 8**  **Step 3 1 more**  **Step 4 1 less**  **Step 5 Composition of 6, 7 and 8**  **Step 6 Make pairs – odd and even**  **Step 7 Double to 8 (find a double)**  **Step 8 Double to 8 (make a double)**  **Step 9 Combine two groups**  **Step 10 Conceptual subitising** | | |
| **Spring 2**  **What do I like to eat and is it good for me?**  WHITE ROSE MATHS and MASTERING NUMBER SESSIONS TO DEVELOP FLUENCY | | | | | | | | | |
| **BLOCK 4 Length, Height and Time**  **Step 1 Explore length**  **Step 2 Compare length**  **Step 3 Explore height**  **Step 4 Compare height**  **Step 5 Talk about time**  **Step 6 Order and sequence time** | | | **BLOCK 5 Building 9 and 10**  **Step 1 Find 9 and 10**  **Step 2 Compare numbers to 10**  **Step 3 Represent 9 and 10**  **Step 4 Conceptual subitising to 10**  **Step 5 1 more**  **Step 6 1 less**  **Step 7 Composition to 10**  **Step 8 Bonds to 10 (2 parts)**  **Step 9 Make arrangements of 10**  **Step 10 Bonds to 10 (3 parts)**  **Step 11 Doubles to 10 (find a double)**  **Step 12 Doubles to 10 (make a double)**  **Step 13 Explore even and odd** | | | | **BLOCK 6 Exploring 3D shape**  **Step 1 Recognise and name 3-D shapes**  **Step 2 Find 2-D shapes within 3-D shapes**  **Step 3 Use 3-D shapes for tasks**  **Step 4 3-D shapes in the environment**  **Step 5 Identify more complex patterns**  **Step 6 Copy and continue patterns**  **Step 7 Patterns in the environment** | | |
| **Summer 1**  **Are animals like me?**  **WHITE ROSE MATHS and MASTERING NUMBER SESSIONS TO DEVELOP FLUENCY** | | | | | | | | | |
| **BLOCK 1 To 20 and Beyond**  **Step 1 Build numbers beyond 10 (10 -13)**  **Step 2 Continue patterns beyond 10 (10-13)**  **Step 3 Build numbers beyond 10 (14-20)**  **Step 4 Continue patterns beyond 10 (14-20)**  **Step 5 Verbal counting beyond 20**  **Step 6 Verbal counting patterns** | | | **BLOCK 2 How many now?**  **Step 1 Add more**  **Step 2 How many did I add?**  **Step 3 Take away**  **Step 4 How many did I take away?** | | | | **BLOCK 3 Manipulate, Compose and Decompose**  **Step 1 Select shapes for a purpose**  **Step 2 Rotate shapes**  **Step 3 Manipulate shapes**  **Step 4 Explain shape arrangements**  **Step 5 Compose shapes**  **Step 6 Decompose shapes**  **Step 7 Copy 2-D shape pictures**  **Step 8 Find 2-D shapes within 3-D shapes** | | |
| **Summer 2**  **What does the Summer bring?**  **WHITE ROSE MATHS and MASTERING NUMBER SESSIONS TO DEVELOP FLUENCY** | | | | | | | | | |
| **BLOCK 4 Sharing and Grouping**  **Step 1 Explore sharing**  **Step 2 Sharing**  **Step 3 Explore grouping**  **Step 4 Grouping**  **Step 5 Even and odd sharing**  **Step 6 Play with and build doubles** | **BLOCK 5 Visualise, Build and Map**  **Step 1 Identify units of repeating patterns**  **Step 2 Create own pattern rules**  **Step 3 Explore own pattern rules**  **Step 4 Replicate and build scenes and constructions**  **Step 5 Visualise from different positions**  **Step 6 Describe positions**  **Step 7 Give instructions to build**  **Step 8 Explore mapping**  **Step 9 Represent maps with models**  **Step 10 Create own maps from familiar places**  **Step 11 Create own maps and plans from story situations** | | | | **BLOCK 6 Make Connections**  **Step 1 Deepen understanding**  **Step 2 Patterns and relationships** | | | **Consolidation** | |
| **EARLY LEARNING GOAL (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 aides) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.  **EARLY LEARNING GOAL (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. | | | | | | | | | |
| **This sets out possible learning and intentions our plans are flexible as our children’s learning is often driven by their interests and certainly planned around their needs.** | | | | | | | | | |