# MARINA INTERNATIONAL SCHOOL

## MATHEMATICS SCHEME OF WORK

### YEAR 3 - TERM 1

| WEEK | TOPIC | TOPIC DETAILS |
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| 1.1 | Recite numbers to 100 to 200 and beyond | Whole class counting. |
| 1.2 | Read and write numbers to at least 1000 | Whole class reading numbers, targeted questions. |
| 1.3 | Count on and back in steps of 2, 3, 4 and 5 to at least 50. | Whole class counting. |
| 1.4 | 1.4. Place a 3-digit number on a number line marked in multiples of 100. 1.5. Place a three-digit number on a number line marked off in multiples of 10. | (1.4) Teacher demonstration, pair activity: Takes turns to throw 1-6 dice three times. Make a 3-digit number and place on marked number line.<br><br>(1.5) Teacher demonstration, pair activity and place on marked number line: Take turns to throw 1-6 die three times. Make a 3-digit number. |
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| 2.1 | Count on and back in ones, tens and hundreds from 2- and 3-digit numbers. | Class counting. |
| 2.2 | Understand what each digit represents in 3-digit numbers and partition into hundreds, tens and units. | Using place value cards, make 3-digit numbers and record the hundreds, tens and units. |
| 2.3 | Find 1, 10 100 more/less than 2- and 3-digit numbers. | Whole class introduction, followed by ability groups. |
| 2.4 | 2.4. Know addition and subtraction facts for all numbers to 20. (2.5) Know the following addition and subtraction facts: Multiples of 100 with a total of 1000.Multiples of 5 with a total of 100. | (2.4) Student responses to questions: How many more?<br>How many less?<br><br>(2.5) Student responses to questions: How many do we need to add? How many do we need to subtract |
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| 3.1 | Know multiplication/division facts for 2x, 3x, 5x and 10 x tables | Whole class chanting followed by a game for pairs: Take turns to throw a die marked 2, 3, 3, 5, 5, 10 |

| WEEK | TOPIC | TOPIC DETAILS |
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| 3.2 | Begin to know 4x table. | On a 100 square, cover any multiple of the number shown. |
| 3.3 | Recognise 2- and 3-digit multiples of 2, 5, and 10. | Class chanting, followed by a game using 100 squares, counters and cards. |
| 3.4 | 3.4. Addition and subtraction Add and subtract 10 and multiples of 10 to and from 2- and 3-digit number Add 100 and multiples of 100 to 3-digit numbers.. (3.5) | (3.4) Whole class: Use 100 square to see the pattern of the multiples. Add next 100 square (starting 101) and continue the pattern.<br>Pairs: Use dice marked 2, 2, 5, 5, 10, 10. Take turns to throw and cover any multiple of that number.<br><br>(3.5) Teacher demonstration: Cover a start number on 100 squares with a counter. Throw 2 dice, 1 marked + and -, the other marked with multiples of 10. Move the counter appropriately. Working in pairs, take turns to throw the dice and move your counter. |
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| 4.1 | Use the = sign to represent equality. | Use dice to generate 2- and 3-digit numbers that can be added. Record as an addition using =. |
| 4.2 | Add several small numbers. Re-order an addition to help with the calculation | Working in pairs, each player takes a turn to throw appropriately marked dice 3 or 4 times. The partner records the numbers, arranges them works out the calculation. |
| 4.3 | Multiplication and division | Half-price sale: teacher shows prices in a shop. What will the price be if there is a half-price sale? What if we bought 2 of a half prices item? Students make their own price labels before and after the sale. |
| 4.4 | CONTINUATION OF WORK. | Half-price sale: teacher shows prices in a shop. What will the price be if there is a half-price sale? What if we bought 2 of a half prices item? Students make their own price labels before and after the sale. |
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| 5.1 | Understand and apply the idea that multiplication is commutative | Using a calculator, ask students to put a 2-digit number in the display, press x and then press 10. What happens? Repeat with a new number? Will this always happen? Can we come up with a rule for x by 10? |

| WEEK | TOPIC | TOPIC DETAILS |
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| 5.2 | Problem solving Using techniques and skills in solving mathematical problems. | Using a calculator, let students explore putting in a single digit number and multiplying it by another single digit number, press =. Record the process. Repeat putting the numbers in in reverse order. What happens? What do you notice? Will it always happen? |
| 5.3 | Choose appropriate mental strategies to carry out calculations. | In class work on calculations, giving feedback on the strategies used. |
| 5.4 | 5.4. Make sense of and solve word problems and begin to represent them. (5.5) Check the results of adding 2 numbers using subtraction, and several numbers by adding in a different order. | (5.4) Using three 1-6 dice, how many different even totals can you make? What if you used different dice?<br><br>5.5) Teacher demonstration: Use 1 – 6 die and generate 2 single digit numbers. Add them. Add them in a different order. What do you notice? Demonstrate several examples, allow students to generate their own numbers. |
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| 6.1 | ACROSS THE BOARD TEST ONE | ACROSS THE BOARD TEST ONE |
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| 7.1 | Using understanding and strategies in solving problems | Teacher demonstration: Use 1 -6 die and generate 2 single digit numbers. Subtract the smaller from the larger. Check by adding the answer to the smaller number. Move on to generating 2- and 3-digit numbers. Allow students to generate their own number. |
| 7.2 | Make up a number story to go with a calculation. | Using dice, students work in pairs to generate a calculation using 1, 2, or 3-digit numbers, and + - x or divide. Working together, make up a story to go with their calculation. |
| 7.3 | Explain a choice of calculation strategy and show how the answer was worked out. | Use within a lesson on calculation. |
| 7.4 | 7.4. Explore and solve number problems and puzzles. (7.5) Describe and continue patterns which count on or back in steps of 2, 3, 4, 5, 10 or 100 Identify simple relationships between numbers | (7.4) Using 2, 4 and 5, and +, x and equals, how many different answers can you make between 40 and 400? How do you know when you have them all?<br><br>(7.5) Use within lessons on 100 square or pattern of number. |
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| 8.1 | Identify, describe and draw regular and irregular 2D shapes including pentagons, hexagons, octagons, semi-circles. | Using a collection of flat shapes, choose an example to match properties chosen by others.<br>Sort a set of flat shapes. |
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| WEEK | TOPIC | TOPIC DETAILS |
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| 8.2 | Classify 2D shapes according to the number of sides, vertices and right angles. | Sort a set of flat shapes. Display them on a Venn or Carroll diagram according to properties such as the number of sides, has a right angle, has a line of symmetry etc. |
| 8.3 | Identify, describe and make 3D shapes including pyramids and prisms, investigate which nets will make a cube. | Collect examples of 3D shapes and match them to name labels. Look for examples in the environment. |
| 8.4 | 8.4. Classify 3D shapes according to the number and shape of faces, number of vertices and edges. | Sort 3D shapes in different ways according to properties such as: whether or not they are prisms, number of faces, edges or vertices. Know that a prism has the same cross-section along its length, and that its 2 end faces are identical. Name and describe solids. |
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| 9.1 | Relate 2D shapes and 3D solids to drawings of them. | Use 2D shapes to make and describe pictures and patterns by drawing round and cutting out a shape to use as a pattern to make larger shapes with reflective symmetry. By folding and cutting. Use mirrors to find reflections and then draw them. |
| 9.2 | Identify 2D, 3D shapes, lines of symmetry and right angles in the environment. | Play 'Match' Shuffle cards and select 1 from each pile.

Make a shape maths trail in the class, in the school, in the environment. |
| 9.3 | Identify right angles in 2D shapes. | Sort a set of shapes. Display them on a Venn diagram or Carroll diagram: Criteria possible: triangles, quadrilaterals, pentagons etc. (regular and irregular), right angle, no right angle. |
| 9.4 | Use the language of position, direction and movement including clockwise and anti-clockwise | 9.4 & 9.5 Use, read and extend the vocabulary from the previous year. Describe and find the position of a square on a grid of squares with rows and columns labelled. |
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| 10.1 | Recognise the relationships between different 2D shapes. | Play games: Noughts and crosses, Treasure Hunt, Battleship. Make your own grid games. |
| 10.2 | Identify the differences and similarities between different 3D shapes. | Using a collection of 3D shapes, choose an example or several examples of an example to match properties described by others. |

| WEEK | TOPIC | TOPIC DETAILS |
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| 10.3 | Identify simple relationships between shapes such as: these shapes all have the same number of lines of symmetry. | Sketch the reflection of a simple 2D shape in a mirror line along one edge. How many 2D shapes can be found with 1 line of symmetry? Recognise and sketch shapes that have 2 lines of symmetry. Discover shapes with more than 2 lines of symmetry |
| 10.4 | 10.4. Consolidate using money notation. Use addition and subtraction facts with a total of 100 to find Choose and use appropriate units and equipment to estimate, measure and record measurements ange. 10.5 | (10.4) Recognise the values of coins and notes. Exchange a note for its equivalent coins.<br><br>Use addition and subtraction and own strategies to solve money problems<br><br>(10.5) Estimate then check, using standard units: how wide/tall?<br>How long/thick?<br>How much a big bowl hold?<br>How many kilograms balance a house brick?<br>How far it is round a cup/ a tree? |
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| 11.1 | ACROSS THE BOARD TEST TWO | ACROSS THE BOARD TEST TWO |
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| 12.1 | Know the relationship between kilometres and metres, metres and centimetres, kilograms and grams, litres and millilitres. | Suggest things that can best measured in metres or kilometres; grams or kilogrammes; litres or millilitres. |
| 12.2 | Read to the nearest division or half division, use scales that are numbered or partially numbered. | What length is shown?<br>What measurement is shown on the scales? How much is in the jug? |
| 12.3 | Use a ruler to draw and measure lines to the nearest centimetre. | Record measurements using a mix of units. Record to the nearest half metre, half kilogram or half litre using whole and half units. |
| 12.4 | 12.4. Solve word problems involving measures. 12.5. Suggest and use suitable units to measure time and know the relationships between them. | (12.4) Measure different objects around the classroom.<br>Use mental calculation strategies to solve measurement problems set in a variety of contexts.<br><br>(12.5) Play 'Match' using a set of matching times (analogue and digital) with the times written as words and numbers. |
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| WEEK | TOPIC | TOPIC DETAILS |
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| 13.1 | Read the time on analogue and digital clocks to the nearest 5 minutes on an analogue clock and to the nearest minute on a digital clock. | Use addition and subtraction and own strategies to solve money problems. Explain methods and reason orally and, where appropriate, write a number sentence to show how the problem was solved. |
| 13.2 | Choose appropriate mental strategies to carry out calculations. | Make estimates and check using a simple timer. Suggest a suitable unit of time to measure the time. Suggest suitable units of measure in order to solve problems. |
| 13.3 | Begin to understand everyday systems of measurement in length, weight, capacity, time and use these to make measurements as appropriate. | Explain methods and reasoning orally and, where appropriate, writing a number sentence to show how the problem was solved. |
| 13.4 | 13.4. Estimate and approximate when calculating and check their working. 13.5. Make a sensible estimate of the answer to a calculation | Estimate then check, using standard units: how wide/tall? How long/thick? How much a big bowl hold? How many kilograms balance a house brick? How far it is round a cup/ a tree?<br><br>13.5. Continuation of work. |
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| 14.1 | Consider whether an answer is reasonable. | • In practical and real-life contexts, using all types of measure. Encourage own methods and class/group discussion |
| 14.2 | Make up a number story to go with a calculation, including in the context of money. | • Find totals and give change. Solve problems: what to buy and how to pay. |
| 14.3 | Explain a choice of calculation strategy and how the answer was worked out. Use ordered lists and tables to help solve problems systematically | • Use mental calculation strategies to solve measure problems set in a variety of contexts. Discuss as class or group. |
| 14.4 | Continuation of lesson | Continuation of lesson. |
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| 16.1 | N/A | N/A |

# MATHEMATICS SCHEME OF WORK
## YEAR 3 - TERM 2

| WEEK | TOPIC | TOPIC DETAILS |
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| 1.1 | Count on and back in steps of 2, 3, 4 and 5 to at least 50. | ☐ Class counting. |
| 1.2 | Place a 3-digit number on a number line marked in multiples of 100. | ☐ As a class to model the activity. Individual and pair work when confident. |
| 1.3 | Place a three-digit number on a number line marked off in multiples of 10. | ☐ As a class to model the activity. Individual and pair work when confident |
| 1.4 | 1.4. Count on and back in ones, tens and hundreds from 2- and 3-digit numbers. 1.5. Understand what each digit represents in 3-digit numbers and partition into hundreds, tens and units. | (1.4) ☐ As a class with some targeted questions<br><br>91.5)<br>• . Large place value cards for class demonstration<br><br>• Use place value cards to change the digits: Make 10 more; make 100 less |
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| 2.1 | Find 1, 10 100 more/less than 2- and 3-digit numbers. | • Display a large place value chart. 'Look, see and say'<br>What do students notice? Use the chart to count forwards and backwards in 1s, 10, 100, …. |
| 2.2 | Multiply two-digit numbers by 10 and understand the effect. | Establish the relationship between the numbers in each column as you move down (x by 10) |
| 2.3 | Round two-digit numbers to the nearest 10 and round three-digit numbers to the nearest 100. | • Round numbers less than 100 to the nearest 10: 43 is 40 rounded to the nearest 10; 58 is 60 rounded to the nearest 10; 25 is 30 rounded to the nearest 10. Give students examples. What do they notice about the last digit and the ten that the number is rounded to?<br>• Round any 3-digit number to the nearest 100: 422 is closer to 400 than to 500.<br>• Give examples. What do you notice? |

| WEEK | TOPIC | TOPIC DETAILS |
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| 2.4 | 2.4. Compare three-digit numbers, use < and > signs, and find a number in between. 1.5. Order two- and three-digit numbers. Give a sensible estimate of a number as a range (e.g. 30 to 50) by grouping in tens. | (2.4)• Place 3-digit numbers on a blank number line. Introduce < and > •Illustrate with examples Find a number in-between. Mark on the number line. Discuss. (2.5) • Understand and use in practical contexts ordinal and cardinal 2- and 3-digit numbers ☐ Questions: ☐ Which is less? Which is more? ☐ Place numbers on a blank number line. |
| 3.1 | Know the following addition and subtraction facts: | ☐ Explain how the estimate was made and justify why it is reasonable. ☐ Talk about different strategies for getting estimates. |
| 3.2 | Multiples of 100 with a total of 1000. Multiples of 5 with a total of 100. | ☐ Class chanting with some targeted questions. |
| 3.3 | Begin to know 4x table. Know multiplication/division facts for 2×, 3×, 5×, and 10× tables. | ☐ Class chanting with some targeted questions. ☐ Class chanting with some targeted questions. ☐ Class chanting with some targeted questions |
| 3.4 | 3.4. Work out quickly the doubles of numbers 1 to 20 and derive the related halves. 3.5. Work out quickly the doubles of multiples of 5 (< 100) and derive the related halves. | (3.4) Practical activities to find doubles and halves of all numbers up to 10 then 20. • Class chanting of doubles and halves facts to 10 then 20. (3.5) ☐ Use known facts to say doubles of multiples of 5. ☐ Use 100 square to record. ☐ Use knowledge of doubles to find halves. |
| 4.1 | Add and subtract pairs of two-digit numbers. | • Discuss strategies for addition and subtraction of two-digit numbers. |
| 4.2 | Add three-digit and two-digit numbers using notes to support. | • Use informal jottings to aid calculation. ☐ Record mental additions in a number sentence using the + and =. |

| WEEK | TOPIC | TOPIC DETAILS |
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| 4.3 | Find 20, 30, … 90, 100, 200, 300 more/less than three-digit numbers. | • Discuss strategies: Counting on; counting back (subtracting).<br>• Use place value chart to see patterns of numbers and use them for finding more or less than a number.<br><br>• Use place value cards up to 4 digits.<br><br>• Working from what is known; use doubling to find what is unknown. |
| 4.4 | 4.4. Understand the relationship between doubling and halving. 4.5. Multiply single-digit numbers and divide two-digit numbers by 2, 3, 4, 5, 6, 9 and 10. Understand that division can leave a remainder (initially as 'some left over'). | (4.4) Using doubling and working mentally, work out the 4 times table by doubling the 2 times table. Halve the 4 times table to make the 2 times table<br>Double the 5 x table to find the 10x table.<br><br>(4.5) • Use a multiplication square and/or tables charts initially, then class chanting and targeted questions.<br><br>• Understand that division reverses multiplication (division is the inverse of multiplication). Use this to find related facts:<br>16 divided by 2 =8<br>8 x 2 =16<br>30 divided by 10 = 3<br>3 x 10 = 30 |
| 5.1 | Understand the relationship between multiplication and division and write connected facts. | • Count out 10 objects. Share into 2 equal sets. Recombine. Remove some objects. Share the remainder.<br><br>• What happens? Any left over? Repeat several times so that all of the numbers 1-10 are covered.<br>• Record those numbers which share with no remainder and those that share with a remainder. |
| 5.2 | Using techniques and skills in solving mathematical problems | • Try with larger numbers. Record the numbers that have a remainder and those that don't. Use 100 square to record. What do you notice?<br>Can you predict which numbers will have a remainder and which will not? How do you know?<br><br>• What if the start number is not a multiple of 2? |

| WEEK | TOPIC | TOPIC DETAILS |
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| 5.3 | Choose appropriate mental strategies to carry out calculations. | • Understand that division reverses multiplication ( division is the inverse of multiplication). Use this to find related facts:<br>16 divided by 2 =8<br>8 x 2 =16 |
| 5.4 | 5.4. Make sense of and solve word problems and begin to represent them. 5.5. Check the results of adding 2 numbers using subtraction, and several numbers by adding in a different order. | (5.4) • Investigate other combinations of numbers.<br>• For addition:<br>☐ Look for pairs that make 10 or 20 … and do these first;<br>☐ Start with the largest number<br><br>(5.5) ☐ Look for pairs that make 9 11, 19, 21 ….<br>And add these to the total by adding 10 and adjusting by 1<br>☐ Position and recombine (partition into tens and units) Look for doubles and near doubles. |
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| 6.1 | Check subtraction by adding the answer to the smaller number in the original calculation | • For subtraction: Mentally add or subtract 9 or 11, 19 or 21 … to/from any3 digit number (264 – 9 = 255 because it is the same as 265 -10 +1)<br>☐ Develop and recognise patterns:<br>☐ 13 + 1 = 14<br>☐ 13 + 11 = 24<br>☐ 13 + 21 = 34 …. |
| 6.2 | Consider whether an answer is reasonable. | • Explain methods and reasoning orally and, where appropriate write a number sentence, draw a graph, design a map …. to show how the problem was solved. |
| 6.3 | Make sense of and solve word problems, single (all four operations) and two-step (addition and subtraction), and begin to represent them, e.g. with drawings or on a number line. | • Understand and use inverse operations.<br><br>• Rearranging numbers to use different strategies. |

| WEEK | TOPIC | TOPIC DETAILS |
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| 6.4 | 6.4. Check multiplication by reversing the order, e.g. checking that 6 × 4 = 24 by doing 4 × 6. 6.5. Check a division using multiplication, e.g. check 12 ÷ 4 = 3 by doing 4 × 3. | (6.4) • Make use of knowledge of inverse operations and using different strategies.<br><br>• Are you sure? How do you know? Have you tried a different way of working it out?<br><br>(6.5) • Use addition and subtraction, multiplication and division to solve 'story' problems in real life linked to any of the objectives.<br><br>• Use any of the suggested resources suggested.<br><br>• Find your own way of working. Share and discuss, giving you reasons.<br><br>• Use knowledge and understanding of inverse operations |
| 7.1 | Check a division using multiplication, e.g. check 12 ÷ 4 = 3 by doing 4 × 3. | • Use knowledge and understanding of inverse operations<br>• Explain how the estimate was made and justify why it is reasonable<br>• Round numbers less than 100 to the nearest 10. |
| 7.2 | Estimate and approximate when calculating, and check working Make a sensible estimate for the answer to a calculation, e.g. using rounding. | • Round measurements to the nearest 10 units and begin to round them to the nearest 100 units: The journey took 58 minutes, which is 60 minutes to the nearest 10 minutes<br>The distance from home to my grandma's house is 123 miles, which is 100 miles to the nearest 100 miles |
| 7.3 | MID-TERM BREAK. | MID-TERM BREAK. |
| 8.1 | Consolidate using money notation. | • Use any of the 4 operations to solve 'story' problem involving money (shopping, going to a bank ....) taken from real life, discussing when we would need to use money.<br>• Set up 'real life' situations in the classroom |

| WEEK | TOPIC | TOPIC DETAILS |
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| 8.2 | Use addition and subtraction facts with a total of 100 to find change. | Exchange a note for its equivalent value in smaller notes or coins<br>Use decimal notation for money. • Using role play area, explain methods and reasoning orally and, if appropriate, write a number sentence to show how a problem was solved. |
| 8.3 | Choose and use appropriate units and equipment to estimate, measure and record measurements | • Choose and use a range of measuring equipment: rules, scales, tapes, jug, beakers ….<br>☐ Use a ruler to measure and draw lines to the nearest half cm<br>☐ Read a scale to the nearest marked division on a ruler, scales or a jug.<br>☐ Record estimates and measurements using a mix of units. |
| 8.4 | 8.4. Know the relationship between kilometres and metres, metres and centimetres, kilograms and gramlitres and millilitres.s. 8.5. | (8.4.) ☐ Know that 1 kilometre = 1000 metres<br>☐ 1 metre = 100 centimetres<br>☐ 1 kilogram = 1000 grams.<br><br>(8.5) ☐ 1 litre = 1000 millilitres<br>☐ Ask questions where the answer can be given using relative and corresponding units of measure. |
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| 9.1 | Read to the nearest division or half division, use scales that are numbered or partially numbered. | • Give opportunities to read a scale to the nearest marked division.<br>This can be done practically or through picture cards and matching readings.<br>Once students are confident, give picture cards only and ask them in their own words to give the reading. |
| 9.2 | Use a ruler to draw and measure lines to the nearest centimetre. | • Link to real life situations:<br>☐ The length of a book; the height of a table.<br>☐ Make 2D drawings or 3D models where the length of each side is measured in whole and half cms. |
| 9.3 | Solve word problems involving measures. Suggest and use suitable units to measure time and know the relationships between them. | • Make up stories that include money, time, length, mass or capacity. Children solve the problems and make some of their own to share with the class |

| WEEK | TOPIC | TOPIC DETAILS |
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| 9.4 | 9.4. Suggest and use suitable units to measure time and know the relationships between them. 9.5. Read the time on analogue and digital clocks to the nearest 5 minutes on an analogue clock and to the nearest minute on a digital clock. | (9.4) ☐ Know that 1 year = 365 days or 52 weeks or 12 months<br>☐ 1 week = 7 days<br>☐ 1 day = 24 hours<br>☐ 1 hour= 60 minutes<br>☐ 1 minute= 60 seconds<br><br>• Use a calendar. Write the date correctly. Know and be able to write their own date of birth.<br><br>• Pose questions:<br>How would you measure the time it takes for a journey?<br><br>☐ What would you use to measure from 1 birthday to the next?<br><br>☐ How long does it take for your first tooth the show?<br><br>(9.5) ☐ Using both analogue and digital clocks find different ways of saying the same thing:<br>☐ 7.45 or 45 minutes past 7 or 15 minutes to 8. Use am and pm Link with digital times. |
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| 10.1 | MID - YEAR ASSESSMENT WEEK. | MID - YEAR ASSESSMENT WEEK. |
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| 11.1 | Make a sensible estimate of the answer to a calculation. | • Use with money as well as the other measures.<br>• Ask 'How did you work it out? What helped you? What did you find difficult? |
| 11.2 | Consider whether an answer is reasonable. | • Do you want to change your estimate? Why?<br>• Link with the role play activities.<br>• 'I went shopping but I only had enough money for 2 things. I bought an apple and a pear. How much did I have? |
| 11.3 | Make up number story to go with a calculation, including in the context of money. | • Make the stories more complex according to ability.<br>• Link with the role play areas. When shopping a number sentence can be written or informal jottings. |
| 11.4 | Explain a choice of calculation strategy and how the answer was worked out. Use ordered lists and tables to help solve problems systematically. | (11.4) • Use previous work with lists and tables to reinforce their use.<br>• Use, read and begin to write the vocabulary associated with handling data.<br><br>(11.5) CROSS COUNTRY. |
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| WEEK | TOPIC | TOPIC DETAILS |
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| 12.1 | Answer a real-life question by collecting, organising and interpreting data, e.g. investigating the population of mini-beasts in different environments. | Link with any topic that is on-going in the school or community or wider world.<br><br>• Sports day, Olympics ... I think the person with the longest legs can jump the furthest, what do you think? How can we find out? How are you going to record your findings? |
| 12.2 | Use tally charts, frequency tables, pictograms (symbol representing one or two units) and bar charts (intervals labelled in ones or twos). | ☐ Discuss questions such as:<br>☐ How should we present this data?<br>☐ How can we find out what we need to know?<br>☐ What information shall we collect?<br>☐ How will we collect it?<br>☐ Which way would be best to show us what we need to know? Why would you use this way? |
| 12.3 | Use Venn or Carroll diagrams to sort data and objects using two criteria. | • Classify objects, shapes or numbers according to 1 criterion progressing to 2 criterion using Carroll or Venn diagrams to display the results.<br><br>☐ For example: Children who walk to school/children to ride to school<br>☐ Answer questions such as:<br>What is our favourite food, colour, sport, film star ....<br><br>• Discuss the outcomes and respond to questions such as: |
| 12.4 | Use ordered lists and tables to help to solve problems systematically. | • Collect data quickly by show of hands or voting and make a simple frequency table.<br>☐ Discuss the outcomes:<br>What is the least/most popular?<br>☐ Which had more than 12 votes?<br>Which had fewer than 7 votes?<br>☐ What if we asked a different class? Do you think the results would be the same or different? Why? |
| 13.1 | LAST WEEK OF TERM. | LAST WEEK OF TERM. |
| 16.1 | N/A | N/A |

# MATHEMATICS SCHEME OF WORK
## YEAR 3 - TERM 3

| WEEK | TOPIC | TOPIC DETAILS |
|---|---|---|
| 1.1 | Multiply two-digit numbers by 10 and understand the effect. | Display a large place value chart. 'Look, see and say' What do students notice? Use the chart to count forwards and backwards in 1s, 10, 100, …. Establish the relationship between the numbers in each column as you move down (x by 10) |
| 1.2 | Round two-digit numbers to the nearest 10 and round three-digit numbers to the nearest 100. | Round numbers less than 100 to the nearest 10: 43 is 40 rounded to the nearest 10; 58 is 60 rounded to the nearest 10; 25 is 30 rounded to the nearest 10. Give students examples. What do they notice about the last digit and the ten that the number is rounded to? Round any 3 digit number to the nearest 100: 422 is closer to 400 than to 500. Give examples. What do you notice? |
| 1.3 | Compare three-digit numbers, use < and > signs, and find a number in between. | Place 3-digit numbers on a blank number line. Introduce < and > Illustrate with examples. Find a number in-between. Mark on the number line. Discuss |
| 1.4 | 1.4. Order two- and three-digit numbers. 1.5. Give a sensible estimate of a number as a range (e.g. 30 to 50) by grouping in tens. | (1.4) Understand and use in practical contexts ordinal and cardinal 2- and 3-digit numbers Questions: Which is less? Which is more? Place numbers on a blank number line. (1.5) Explain how the estimate was made and justify why it is reasonable Talk about different strategies for getting estimates. |
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| WEEK | TOPIC | TOPIC DETAILS |
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| 2.1 | Find half of odd and even numbers to 40, using notation such as 131/2. | Revise halving even numbers. What happens if we want to halve exactly with no remainder an odd number? |
| 2.2 | Understand and use fraction notation recognising that fractions are several parts of one whole, e.g. ¾ three quarters and 2/3 is two thirds. | Use practical materials e.g. cutting an apple in half. Introduce the ½ Explain what the numerator and denominator represent. Recognise that ¾ is three quarters and that represents 3 equal parts of a whole. |
| 2.3 | Recognise equivalence between ½ 2/4 4/8 and 5/10 Using diagrams. | Give opportunities to find ¾ in a variety of contexts. Repeat for 2/3, ½, 1/10 …… |
| 2.4 | 2.4. Recognise simple mixed fractions, e.g. 1½ and 2¼. 2.5. Order simple or mixed fractions on a number line, e.g. using the knowledge that ½ comes half way between ¼ and ¾ and that 1½ comes halfway between 1 and 2. | (2.4) Using a multiplication square look across any 2 rows which are next to each other. What do you notice? 2 4 6 8 10 12 14 16 ….. 4 8 12 16 20 24 28 32 Read them as fractions. What do you notice? Is this true for any 2 rows?<br><br>(2.5) Position fractions on a numbered number line. Make a line to 10, showing whole, half and quarter numbers. Count on or back in steps of half, quarter and three quarters. What number is half way between 4 and 5? What is between 7½ and 8? Use a blank number line so that students now have to show understanding when placing mixed fractions. |
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| 3.1 | Begin to relate finding fractions to division. | Use a number line initially to ten then to 100. Choose any number on the number line. Estimate where half of that number is. (division by 2) What should we write there? Use other known multiplication and division facts. Use regular shapes and folding. |
| 3.2 | Find halves, thirds, quarters and tenths of shapes and numbers (whole number answers). | Fraction wall. Use knowledge of division to find fractions of numbers with no remainder. |
| 3.3 | Know the following addition and subtraction facts: Multiples of 100 with a total of 1000. Multiples of 5 with a total of 100. | Class chanting with some targeted questions<br><br>Class chanting with some targeted questions. |

| WEEK | TOPIC | TOPIC DETAILS |
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| 3.4 | 3.4. Know multiplication/division facts for 2x, 3x, 5x and 10 x tables. 3.5. Begin to know 4x table. | Class chanting with some targeted questions<br><br>Class chanting with some targeted questions. |
| 4.1 | Work out quickly the doubles of numbers 1 to 20 and derive the related halves | Practical activities to find doubles and halves of all numbers up to 10 then 20.<br>Class chanting of doubles and halves facts to 10 then 20. |
| 4.2 | Work out quickly the doubles of multiples of 5 (< 100) and derive the related halves. | Use known facts to say doubles of multiples of 5. Use 100 square to record.<br>Use knowledge of doubles to find halves |
| 4.3 | Work out quickly the doubles of multiples of 50 to 500. | Class chanting and targeted questions |
| 4.4 | 4.4. Add and subtract pairs of two-digit numbers. 5.5. Add three-digit and two-digit numbers using notes to support. | (4.4) Discuss strategies for addition and subtraction of two-digit numbers.<br>Students share ideas and explain their method.<br>• Start with the largest number<br>• Partition and recombine<br>• Put the largest number first in order to count on<br>• Partition in to tens and units<br>• Recognise that when 2 numbers are close together it's easier to find the difference by counting on not counting back.<br><br>(4.5) Use informal jottings and blank number lines to aid calculation.<br>Record mental additions in a number sentence using the + and =. |
| 5.1 | MID-TERM BREAK. | MID-TERM BREAK. |
| 6.1 | Add/subtract single-digit numbers to/from three-digit numbers. | Discuss strategies : Counting on; counting back (subtracting)<br><br>Use place value chart to see patterns of numbers and use them for finding more or less than a number. |
| 6.2 | Find 20, 30, ... 90, 100, 200, 300 more/less than three-digit numbers. | Use place value cards up to 4 digits.<br><br>Recognise that the use of symbols such as |
| 6.3 | Find complements to 100, solving number equations such as 78 + | Using facts to 20:<br>12 + 8 =20<br>15 + |

| WEEK | TOPIC | TOPIC DETAILS |
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| 6.4 | 6.4. Multiply single-digit numbers and divide two-digit numbers by 2, 3, 4, 5, 6, 9 and 10. 6.5. Understand that division can leave a remainder (initially as 'some left over'). | (6.4) Use a multiplication square and/or tables charts initially, then class chanting and targeted questions.<br>Understand that division reverses multiplication ( division is the inverse of multiplication) Use this to find related facts:<br>32 divided by 2 = 16<br>16 x 2 =16<br>50 divided by 10 = 5<br>5 x 10 = 50<br><br>(6.5) Count out 10 objects. Share into 2 equal sets. Recombine. Remove some objects. Share the remainder. What happens? Any left over? Repeat several times so that all of the numbers 1-10 are covered.<br>Record those numbers which share with no remainder and those that share with a remainder. Try with larger numbers. Record the numbers that have a remainder and those that don't. Use 100 square to record. What do you notice?<br>Can you predict which numbers will have a remainder and which will not? How do you know? |
| 7.1 | Understand the relationship between multiplication Multiply teens numbers by 3 and 5. | What if the start number is not a multiple of 2? Explore other start numbers.<br>Record what happens |
| 7.2 | Begin to divide two-digit numbers just beyond 10× tables, e.g. 60 ÷ 5, 33 ÷ 3. and division and write connected facts. | Understand that division reverses multiplication ( division is the inverse of multiplication) Use this to find related facts:<br>32 divided by 2 = 16<br>16 x 2 =16<br>50 divided by 10 = 5<br>5 x 10 = 50 |
| 7.3 | Using techniques and skills in solving mathematical problems. | Investigate other combinations of numbers<br>Discuss strategies:<br>Multiply the tens then the units and add together.<br>Count on in equal steps… |

| WEEK | TOPIC | TOPIC DETAILS |
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| 7.4 | 7.4. Choose appropriate mental strategies to carry out calculations. 7.5. Make sense of and solve word problems and begin to represent them. | (7.4) Look for pairs that make 10 or 20 ... and do these first;<br>Start with the largest number<br>Look for pairs that make 9 11, 19, 21 .... And add these to the total by adding 10 and adjusting by 1<br>Position and recombine (partition into tens and units) Look for doubles and near doubles.<br><br>(7.5) For subtraction: Mentally add or subtract 9 or 11, 19 or 21 ... to/from any3 digit number (264 – 9 = 255 because it is the same as 265 -10 +1)<br>Develop and recognise patterns:<br>13 + 1 = 14<br>13 + 11 = 24<br>13 + 21 = 34 ..... |
| 8.1 | Check the results of adding 2 numbers using subtraction, and several numbers by adding in a different order. | Explain methods and reasoning orally and, where appropriate write a number sentence, draw a graph, design a map ..... to show how the problem was solved |
| 8.2 | Check subtraction by adding the answer to the smaller number in the original calculation. | Understand and use inverse operations.<br><br>Rearranging numbers to use different strategies |
| 8.3 | Consider whether an answer is reasonable. Make sense of and solve word problems, single (all four operations) and two-step (addition and subtraction), and begin to represent them, e.g. with drawings or on a number line. | Make use of knowledge of inverse operations and using different strategies.<br><br>Are you sure? How do you know? Have you tried a different way of working it out? |
| 8.4 | 8.4. Check multiplication by reversing the order, e.g. checking that 6 × 4 = 24 by doing 4 × 6. 8.5. Check a division using multiplication, e.g. check 12 ÷ 4 = 3 by doing 4 × 3. | (8.4) Use addition and subtraction, multiplication and division to solve 'story' problems in real life linked to any of the objectives.<br><br>Use any of the suggested resources suggested.<br><br>(8.5) Find your own way of working. Share and discuss, giving you reasons.<br><br>Use knowledge and understanding of inverse operations.<br><br>Use knowledge and understanding of inverse operations |
| 9.1 | Estimate and approximate when calculating, and check working. | Explain how the estimate was made and justify why it is reasonable. |

| WEEK | TOPIC | TOPIC DETAILS |
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| 9.2 | Make a sensible estimate for the answer to a calculation, e.g. using rounding. | Round numbers less than 100 to the nearest 10. Round measurements to the nearest 10 units and begin to round them to the nearest 100 units: The journey took 58 minutes, which is 60 minutes to the nearest 10 minutes. The distance from home to my grandma's house is 123 miles, which is 100 miles to the nearest 100 miles. |
| 9.3 | Make up a number story to go with a calculation. | What could the story be? 26 x 3 = 78 |
| 9.4 | 9.4. Explain a choice of calculation strategy and show how the answer was worked out. 9.5 Explore and solve number problems and puzzles. | (9.4) Use knowledge and understanding of different strategies, work on a problem and explain the choice of strategy used, and how the answer was worked out. The strategy may be one that no-one has used before.<br><br>(9.5) Use a range of word problems, logic problems, finding all possibilities, diagram problems and visual problems, finding rules and describing patterns. |
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| 10.1 | Classify 2D shapes according to the number of sides, vertices and right angles. | Sort a set of 2D shapes Display them on a Carroll or Venn diagram according to properties such as: Whether or not the shape has a line of symmetry; Whether or not the sides are the same length as each other; Whether or not there is a right angle. |
| 10.2 | Identify, describe and make 3D shapes including pyramids and prisms; investigate which nets will make a cube. | Know that a prism has the same cross section along its length and that its 2 end faces are identical. |
| 10.3 | Classify 3D shapes according to the number and shape of faces, number of vertices and edges. | Sort a set of 3D shapes Display them on a Carroll or Venn diagram according to properties such as: Whether or not the shape has a line of symmetry; Whether or not the sides are the same length as each other; Whether or not there is 1 or more right angles. |
| 10.4 | 10.4 & 10.5) Draw and complete 2D shapes with reflective symmetry and draw reflections of shapes (mirror line along one side). Relate 2D shapes and 3D solids to drawings of them. | Recognise and sketch or complete shapes with reflective symmetry. Find examples from real life: Fabrics, logos, capital letters.<br><br>Collect 3D shapes and match them to drawings of them. Label both the shapes and the drawings. |
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| 11.1 | NAT PERIOD/WEEK. | NAT PERIOD/WEEK. |

| WEEK | TOPIC | TOPIC DETAILS |
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| 12.1 | Identify 2D and 3D shapes, lines of symmetry and right angles in the environment. | Devise a shape trail around the classroom, outside area or the wider environment, looking for specific parts of the shape objectives. |
| 12.2 | Identify right angles in 2D shapes. | Make a 90 degree angle by folding a piece of paper in half vertically and in half again horizontally. Match the corner made to check right angles in the room. Make a list of all the right angles and where they were found. |
| 12.3 | Use the language of position, direction and movement, including clockwise and anti-clockwise. | Use, read and write the vocabulary of position and movement. Use vocabulary cards and place them around the room. |

| WEEK | TOPIC | TOPIC DETAILS |
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| 12.4 | 12.4. Find and describe the position of a square on a grid of squares where the rows and columns are labelled Use a set square to draw right angles. 12.5. | Play noughts and crosses, telling the other player where to place a mark.<br>Design a treasure map and give instructions to find the treasure.<br><br>Design a treasure map and have a set of cards giving grid references. Place cards face down and players take turns to turn the top card over. The winner is the player who gets the treasure grid reference.<br><br>(12.5) Use a set square to find and draw right angles. Know that a right angle is a quarter turn.<br><br>Use the set square to draw right angles and compare them with other angles to see if they are more or less than a right angle. Record results in a list or table.<br><br>Find where there are straight lines and recognise that a straight line is made up of 2 right angles. Collect examples of straight lines and check using 2 right angles.<br><br>Give examples where students match statements to shape or angle:<br>Discuss and explain your reasoning.<br><br>A cuboid has 6 faces<br>A cube has 6 square faces.<br>Is a cube a cuboid?<br>Is a cuboid a cube?<br>Compare and contrast other 3D shapes.<br>Make a list or table to show properties of each. |
| 13.1 | LAST WEEK OF TERM. | LAST WEEK OF TERM. |
| 16.1 | N/A | N/A |