## Mastery Five Unit Overview: Spring Term 1

Use opportunities as part of the daily routine to tell the time.
At some point in each day, not necessarily the maths lesson, addition and subtraction facts (number Bonds to 10, 20 and 100) and multiplication and division facts for the 2 to 12 times tables should be rehearsed following guidance provided.
Recall key conversions of time including 60 seconds = 1 minute, 60 minutes = 1 hour, 24 hours = 1 day and 7 days = 1 week and vice versa. Recall key conversions of distance including 10mm = 1cm, 100cm = 1m, 1000m = 1km and vice versa 1000g = 1kg and vice versa and volume/capacity 1000ml = 1 litre and vice versa.
Recall multiplication and division facts for all the multiplication tables.
Use knowledge of place value and multiplication facts to derive related multiplication and division facts.

| **Spring 1 Unit 10 *(Week 1)*: Place Value** | | |
|---|---|---|
| **Lesson** | **Starter** | **Lesson Focus** |
| **1** | Read and interpret information in a range of timetables with different contexts | Identify and represent numbers with up to three decimal places<br>Read numbers up to three decimal places where 0 is used as a place holder in any position<br>Write numbers up to three decimal places where 0 is used as a place holder in any position |
| **2** | Recognise and write decimal equivalents of any number of fractional hundredths | Identify the value of each digit to three decimal places in a variety of ways, e.g. the value of the digit 7 in 3.867 is seven thousandths, $\frac{7}{1000}$ or 0.007 |
| **3** | Multiply/divide whole numbers by 10, 100 and 1,000 | Compare numbers with three decimal places where 0 is used as a place holder in any position<br>Order numbers with three decimal places where 0 is used as a place holder in any position |
| **4** | Correctly place multiples of one hundredth on a number line with multiples of 0.1 marked but not labelled (on number lines that start and end with 0 and 1) | Round decimals with two decimal places to the nearest whole number (e.g. 267.62 rounds to 268) |
| **5** | Interpret line graphs | Explain the meaning of a negative number in a variety of real-life contexts (e.g. below freezing, below sea level, under par (golf), negative goal difference)<br>Count on and back with positive and negative whole numbers through zero<br>Order temperatures including those below 0°C (consolidation of previous year) |

| **Spring 1 Unit 11 *(Week 2)*: Addition and Subtraction** | | |
|---|---|---|
| **Lesson** | **Starter** | **Lesson Focus** |
| **1** | Count forwards and backwards in fractional thousandths ($\frac{1}{1000}$) including where tenths and ones boundaries are crossed | Recognise calculations that require counting on or back mentally, bridging through a multiple of 10 efficiently<br>e.g. 230 – 72 becomes 230 – 30 – 40 – 2 and use this strategy where appropriate<br>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy |
| **2** | Interpret bar charts | Recognise calculations that require counting on mentally to find the difference e.g. 5,003 – 1,960 (counting efficiently between the two numbers) and use this strategy where appropriate<br>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy |
| **3** | Multiply T0 x T0 using knowledge of factorising and tables facts | Recognise calculations that require a mental compensation method e.g. 325 + 298 becomes 325 + 300 – 2 and use this strategy where appropriate<br>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy |
| **4** | Compare two fractions where the denominator of one fraction is a multiple of the denominator of the other fraction | Add and subtract whole numbers with more than 4 digits using formal written methods<br>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy |
| **5** | Continue to read, write and convert time between analogue and digital 12 and 24-hour clocks | Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) |

| **Spring 1 Unit 12 *(Week 3)*: Multiplication** | | |
|---|---|---|
| **Lesson** | **Starter** | **Lesson Focus** |
| **1** | Identify and describe 2-D shapes (sides, parallel and perpendicular sides, vertices, angles and symmetry) | Identify multiples of 3, 4, 6, 9, 20, using rules of divisibility |
| **2** | Correctly place multiples of one thousandth on a number line with multiples of 0.1 marked but not labelled (on number lines that start and end with 0 and 1) | Identify factors of numbers beyond known tables (e.g. 91)<br>Use a list strategy to identify common factors of two numbers beyond known tables |

| | | |
|---|---|---|
| **3** | Count forwards and backwards in decimal thousandths (0.001) including where hundredths or tenths boundaries are crossed,<br>Use knowledge of equivalence to refine the sequence | Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers<br>Establish whether a number up to 100 is prime<br>Recall prime numbers up to 19 |
| **4** | Use knowledge of place value and multiplication facts to multiply multiples of 100 and 1000 by a one-digit number | Multiply a 2 digit by a 2-digit number using grid method |
| **5** | Use knowledge of place value and multiplication facts to divide related larger numbers | Multiply a 3 digit by a 2-digit number using grid method |

| **Spring 1 Unit 13 *(Week 4)*: Measures (length, mass and capacity)** | | |
|---|---|---|
| **Lesson** | **Starter** | **Lesson Focus** |
| **1** | Choose an appropriate mental strategy to solve a calculation based upon the numbers involved | Multiply/divide whole numbers and decimals by 100 where 0 is not used as a place holder, e.g. 5.68 × 100 or 8532 ÷ 100<br>Multiply/divide whole numbers and decimals by 100 where 0 is used as a place holder, e.g. 15.106 × 100 or 4070 ÷ 100 |
| **2** | Multiply a 4 digit by a 1-digit number using grid method | Multiply/divide whole numbers and decimals by 1,000 where 0 is not used as a place holder, e.g. 19.73 × 1,000 or 2378 ÷ 1,000<br>Multiply/divide whole numbers and decimals by 1,000 where 0 is used as a place holder, e.g. 33.003 × 1,000 or 123 006 ÷ 1000 |
| **3** | Divide a 4-digit number by a 1-digit number and interpret remainders appropriately for the context | Convert km to m, kg to g, l to ml and vice versa |
| **4** | Order more than two fractions whose denominators are all multiples of the same number | Use knowledge of place value and multiplication facts to divide related decimal numbers where the dividend is scaled down<br>Use knowledge of place value and multiplication facts to divide related decimal numbers where the dividend and divisor are scaled down |
| **5** | Compare all types of angles including reflex angles | Use all four operations to solve problems involving measure using decimal notation, including scaling |

| **Spring 1 Unit 14 *(Weeks 5 and 6)*: Geometry** | | |
|---|---|---|
| **Lesson** | **Starter** | **Lesson Focus** |
| | | |
| **1** | Use partitioning to double numbers including decimal numbers to two decimal places | Identify, describe and represent the position of a rectilinear shape following a reflection in a horizontal or vertical mirror line when all/some/no sides are parallel or perpendicular to the mirror line and when the shape is not touching the mirror line. |
| **2** | Multiply whole numbers and decimals by 10, 100 or 1,000 including where 0 is used as a place holder | Identify, describe and represent the position of a rectilinear shape following a reflection in a horizontal or vertical mirror line when all/some/no sides are parallel or perpendicular to the mirror line and when the shape is touching the mirror line. |
| **3** | Divide whole numbers and decimals by 10, 100 or 1,000 including where 0 is used as a place holder | Describe positions on a 2-D grid as coordinates in the first quadrant<br>Plot specified points and draw sides to complete a given polygon |
| **4** | Order numbers including with up to three decimal places and where 0 is used as a place holder in any position | Represent the position of a shape following a translation in one or two directions (left/right and/or up/down)<br>Describe the translation for a shape that moves in one or two directions (left/right and/or up/down) |
| **5** | Use partitioning to halve numbers including decimal numbers to two decimal places | Identify the position of a shape following a translation in one or two directions (left/right and/or up/down) |
| **6** | Choose an appropriate mental strategy to solve a calculation based upon the numbers involved | Measure acute and obtuse angles to the nearest degree using a 180° protractor<br>Calculate reflex angles by measuring acute or obtuse angles to the nearest degree using a 180° protractor |
| **7** | Multiply a 2-digit by a 2-digit number using grid method | Draw acute and obtuse angles to the nearest degree using a 180° protractor<br>Use the understanding of the relationship between acute/obtuse angles and reflex angles to draw reflex angles to the nearest degree using a 180° protractor |
| **8** | Find a fraction of an amount with a range of numerators and denominators | Estimate acute, obtuse and reflex angles using knowledge of a right angle and fractions of a right angle e.g. half a right angle is 45°; one third of a right angle is 30° and two thirds of a right angle is 60° and adding these to 90° (obtuse), and 180° or 270° (reflex) |
| **9** | Identify angles that are other multiples of 90° | Use information given to calculate missing angles at a point on a straight line and half a turn (total 180°)<br>Use information given to calculate missing angles at a point and one whole turn (total 360°) |
| **10** | | Learning Check |