OLSA Maths Year 5 Full Year Plan - Abacus

Year 5, Autumn Term 1

Addition and subtraction

Weeks 1 and 2 focus on establishing a robust understanding of place value and using this in the development of addition and subtraction calculation strategies.

Read, write, compare and order 5-digit numbers, understanding the place value and using < and >signs; add and subtract multiples of 10, 100 and 1000 to and from 5-digit numbers; use written addition to add two 4-digit numbers; work systematically to spot patterns.

Addition and subtraction

Weeks 1 and 2 focus on establishing a robust understanding of place value and using this in the development of addition and subtraction calculation strategies.

Add and subtract 2- 3- and 4-digit numbers mentally; choose a strategy for solving mental additions or subtractions; solve word problems

Decimals; multiplication and division

Week 3 focuses on multiplying and dividing to get decimal numbers, and then on mental strategies in multiplication and division.

Understand place value in decimal numbers; multiply and divide numbers with up to two decimal places by 10 and 100; multiply and divide by 0 and 100; add and subtract 0·1 and 0·01; multiply and divide by 4 by doubling or halving twice; use mental multiplication strategies to multiply by 20, 25 and 9

Time; length

Week 4 focuses on calculating time intervals and on measuring lengths in cm and mm including perimeters.

Revise converting 12-hour clock times to 24-hour clock times; find a time a given number of minutes or hours and minutes later; calculate time intervals using 24-hour clock format; measure lengths in mm and convert to cm; find perimeters in cm and convert cm to m

Subtraction

Week 5 focuses on using formal written subtraction and counting up as appropriate, including when finding change.

Solve subtraction using a written method for 3-digit − 3-digit numbers and for 4-digit numbers; use counting up (Frog) as a strategy to perform mental subtraction; find change from a multiple of ten pounds using counting up

Year 5, Autumn Term 2

Multiplication and division; fractions

Weeks 6 and 7 focus on multiplication and division, and extend children's understanding of fractions.

Recognise which numbers are divisible by 2, 3, 4, 5, 6, 9 and 25 and identify multiples; find factors; recording results systematically and finding all factors of a given number; compare and place fractions on a line; find equivalent fractions and reduce them to their simplest form

Multiplication and division; fractions

Weeks 6 and 7 focus on multiplication and division, and extend children's understanding of fractions.

Use mental strategies to multiply and divide multiples of 10 and 100; use a written method to multiply 3-digit and 4-digit numbers by 1-digit numbers and estimate answers, divide 3-digit numbers by 1-digit numbers using a written method and express remainders as a fraction and solve division word problems

Angles

Week 8 focuses on the concept of angles as degrees of 'turn', and on comparison, identification and measurement of angles.

Use a protractor to measure and draw angles in degrees; recognise, use terms and classify angles as obtuse, acute and reflex; recognise that angles on a line total 180° and angles round a point total 360°; identify and name parts of a circle including diameter, radius and circumference; draw circles to a given radius using a pair of compasses; relate angles to turns, and recognise that a 360° angle is a complete turn; use angle facts to solve problems related to turn

Whole numbers, decimals and fractions

Week 9 focuses on comparing and ordering whole numbers and decimals, and on equivalence in relation to proper fractions and decimals.

Place numbers to 100 000 and decimals up to two places on a line, round numbers to the nearest 10, 100 and 1000 and decimals up to two places to the nearest whole number; compare and order numbers with up to two decimal places; reduce fractions to their simplest form; know and recognise equivalent fractions and decimals to half, tenths and fifths

Revision

Week 10 provides in-depth revision of the four operations, including calculation strategies and the inverse relation between addition and subtraction, multiplication and division.

Revise mental and written addition and subtraction strategies, choose to use a mental strategy or written method to solve addition and subtraction, choose to solve word problems involving multiplication and division questions including 2- and 3-digit by 1-digit and 2-digit by 2-digit using a mental or a written method, use mathematical reasoning to work out a function, identify the operation being used on numbers, understand that addition and subtraction are inverse operations multiplication and division, use function machines

Year 5, Spring Term 1

Place value

Week 11 focuses on developing a robust understanding of place value in larger whole numbers and in decimals; this is used to enable children to round any number to the nearest required power of ten.

Read, write and order numbers with up to 6 digits and understand the place value of each digit; place 6-digit numbers on a number line and find numbers between; solve place-value additions and subtractions with 6-digit numbers; understand place value in decimal numbers as tenths and hundredths; multiply and divide by 10/100/1000 using a place-value grid; understand place value in decimal numbers to 2-decimal places; place decimal numbers on a line; round two-place decimal numbers to nearest tenth and whole number; say the number a tenth or a hundredth more

Addition and subtraction

Week 12 focuses on the rehearsal and development of mental calculation strategies for addition and subtraction.

Rehearse mental addition strategies for decimals and whole numbers; use counting on as a strategy to perform mental addition of 2-place decimals to the next whole number; solve missing number sentences; use mental strategies to solve multi-step word problems; use counting up as a strategy to perform written subtraction (Frog)

Multiplication and division

Week 13 focuses on the rehearsal and development of mental calculation strategies for multiplication and division, and on identifying patterns and rules.

Use rules of divisibility to find if numbers are divisible by 2, 3, 4, 5, 9 and 10; identity prime numbers; revise finding factors of numbers; find squares and square roots of square numbers; finding patterns and making and testing rules; use mental multiplication and division strategies; relate mental division strategies to multiples of ten of the divisor

2D shapes; measures

Week 14 focuses on exploring the properties of triangles, naming and identifying the different types; and then on SI units of measure, reading scales and conversion problems.

Know properties of equilateral, isosceles, scalene and right-angled triangles; find that angles in a triangle have a total of 180°; sort triangles according to their properties; use scales to weigh amounts to the nearest half interval; convert from grams to kilograms and vice versa, from millilitres to litres and vice versa, and from metres to kilometres and vice versa; read scales to the nearest half division; understand that we measure distance in kilometres and miles; use ready reckoning to give approximate values of miles in kilometres and vice versa; draw line conversion graphs

Addition and subtraction

Week 15 focuses on column addition of decimal numbers, and on mental subtraction of decimal numbers.

Use a written column method to add amounts of money in pounds and pence; add 2-place decimals using written column addition; subtract decimal numbers using counting up (Frog)

Year 5, Spring Term 2

Multiplication and division

Weeks 16 and 17 focus on the development of written methods for multiplication and division; division is linked to finding fractions of large amounts.

Use a written method (grid) to multiply pairs of 2-digit numbers; use short division to divide 3-digit numbers by 1-digit numbers, including those which leave a remainder

Multiplication and division

Weeks 16 and 17 focus on the development of written methods for multiplication and division; division is linked to finding fractions of large amounts.

Find unit fractions and non-unit fractions of 3-digit numbers; use short multiplication to multiply 3-digit numbers by 1-digit numbers; begin to use short multiplication to multiply 4-digit numbers by 1-digit numbers

2D shapes; angles; measures

Understand what a polygon is; draw polygons using dotted square and isometric paper; revise terms obtuse, acute and reflex angles, perpendicular and parallel sides; recognise quadrilaterals as polygons and identify their properties; classify quadrilaterals;

Week 18 focuses on developing understanding of polygons and angles, particularly in relation to quadrilaterals; metric units are then revised and regularly used imperial units are taught.

draw regular polygons and explore their properties; revise metric units of weight, capacity and length; understand that we can measure in imperial units and relate these to their instances in daily life

Fractions

Week 19 focuses on revising proper fractions and equivalent fractions, and then moves on to mixed numbers and improper fractions; proper fractions are multiplied by whole numbers.

Place mixed numbers on lines; count up in fractions using equivalence; convert improper fractions to mixed numbers and vice versa; write improper fractions as mixed numbers and vice versa; multiply proper fractions by whole numbers

Addition and subtraction

Week 20 focuses on rehearsing column subtraction and extending to larger / more difficult numbers; column addition and subtraction are used to solve problems.

Solve subtraction of 4-digit numbers using written column subtraction (decomposition); add several numbers using written column addition; use column to solve problems

Year 5, Summer Term 1

Addition and subtraction

Week 21 focuses on adding and subtracting numbers in the context of money and contextual problems.

Add mentally 2-place decimal numbers in the context of money using rounding; add several small amounts of money using mental methods; mentally subtract amounts of money including giving change; calculate the difference between two amounts using counting up; solve word problems, including 2-step problems, choosing an appropriate method

Fractions; multiplication

Week 22 focuses on multiplying and converting fractions; and on short and long multiplication of whole numbers.

Multiply fractions less than 1 by whole numbers, convert improper fractions to whole numbers; use short multiplication to multiply 3-digit and 4-digit numbers by 1-digit numbers; use long multiplication to multiply 2-digit and 3-digit numbers by teens numbers

Place value and decimals

Week 23 focuses on place value in decimals, including multiplying and dividing by 10 and 100.

Read, write and compare decimals to three decimal places, understanding that the third decimal place represents thousandths; multiply and divide numbers by 10, 100 and 1000 using 3-place decimal numbers in the calculations; place 2-place decimals on a number line and round them to the nearest tenth and whole number; read, write, order and compare 3-place decimal numbers; understand and use negative numbers in the context of temperature

Coordinate geometry; 2D and 3D shapes

Week 24 focuses on plotting, reflecting and translating shapes on coordinate grids; and on extending understanding of properties of 2D and 3D shapes.

Read and mark co-ordinates in the first two quadrants; draw simple polygons using co-ordinates; translate simple polygons by adding to and subtracting from the co-ordinates; reflect simple shapes in the y axis or in a line, noting the effect on the co-ordinates; translate simple shapes and note what happens to the co-ordinates; draw regular and irregular 2D shapes using given dimensions and angles; use the properties of 2D shapes, including rectangles, to derive related facts; identify 3D shapes from 2D representations; create 3D shapes using 2D nets and draw 3D shapes

Addition and subtraction

Week 25 focuses on written methods of addition and subtraction, and choosing efficient strategies to solve problems.

Add 5-digit numbers using written column addition; subtract 5-digit numbers using written method (decomposition); check answers to subtractions using written column addition; solve subtractions of 4- and 5-digit numbers using written column subtraction or number line counting up

Year 5, Summer Term 2

Multiplication and division and fractions

Weeks 26 and 27 focus on factors and multiples; on securing the concept of equivalent fractions to enable calculations with

Identify factors and multiples, find factor pairs; revise equivalent fractions; compare and order fractions with related denominators; add fractions with same or related denominators, then convert answer into a mixed number; subtract fractions with same and related denominators, revise multiplying fractions by whole numbers

fractions; and on further developing written methods of multiplication and division.

Multiplication and division and fractions

Weeks 26 and 27 focus on factors and multiples; on securing the concept of equivalent fractions to enable calculations with fractions; and on further developing written methods of multiplication and division.

Use short division to divide 3-digit numbers by 1-digit numbers and 4-digit numbers by 1-digit numbers, including those which leave a remainder; express a remainder as a fraction; use long multiplication to multiply 3-digit and 4-digit numbers by teens numbers

Area and perimeter; volume

Week 28 focuses on calculating areas, perimeters and volumes, and understanding the difference between measurement in one, two and three dimensions.

Find the area and perimeter of squares and rectangles by calculation and pursue a line of enquiry; estimate and find the area of irregular shapes; calculate the perimeter and area of composite shapes; use the relations of area and perimeter to find unknown lengths; begin to understand the concept of volume; find the volume of a cube or cuboid by counting cubes; understand volume as measurement in three dimensions; relate volume to capacity; recognise and estimate volumes

Fractions, decimals and percentages

Week 29 focuses on understanding percentages and how they relate to fractions and decimals, and solving problems by finding percentages of amounts.

Understand what percentages are, relating them to hundredths; know key equivalences between percentages and fractions, finding percentages of amounts of money; find equivalent fractions, decimals and percentages; solve problems involving fraction and percentage equivalents; write dates using Roman numerals

Revision

Week 30 focuses on revision of: line graphs; calculating time intervals; finding cubes of numbers; using factors to multiply; and solving scaling problems involving fractions and measures.

Find cubes of numbers to 10; draw and interpret line graphs showing change in temperature over time; begin to understand rate; use timetables using the 24-hour clock and use counting up to find time intervals of several hours and minutes; solve problems involving scaling by simple fractions; use factors to multiply; solve scaling problems involving measure