Admiralty Primary School

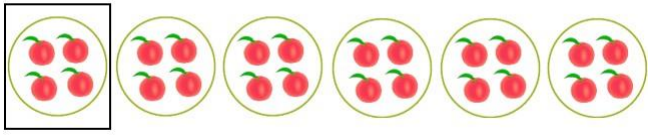
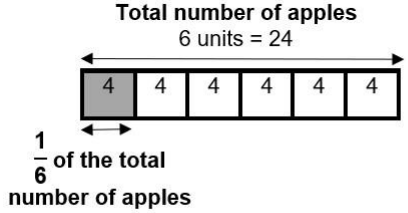
Primary 4 Mathematics

Lesson Focus

Semester 1

Numbers To 100 000 – Pupils will learn how to recognise, write and compare numbers up to 100 000.		
Key Concepts	**Learning Objectives**	**Maths Vocabulary**
• Counting relates to finding the quantity of objects • The relative value of a number can be known through comparing it with other	• Recognise number notation and the respective value and place value of each digit • Relate how big numbers are used in real life • Compare and order numbers within 100 000 • Identify and describe patterns in number sequences • Estimate a big number and explain how the estimation is done • Round numbers to the nearest 10, 100 or 1000 with the use of ≈	• place value • ones, tens, hundreds, thousands • digit, value of digit, stands for • estimate, approximately • increasing order, decreasing order
Factors and Multiples – Pupils will learn about factors and multiples, and how they are related.		
Key Concepts	**Learning Objectives**	**Maths Vocabulary**
• Factors are the numbers that are multiplied to get a product • Dividing the product by a factor leaves no remainder • Multiples are the numbers obtained by multiplying factors	• Relate the concepts of factor and multiple to multiplication and division. 4 *(factor)* × 5 *(factor)* = 20 *(product)* 20 is the multiple of 4. 20 is also the multiple of 5. • List the factors of a given whole number up to 100 factors and share the different ways of writing the products e.g. 36 = 9 × 4 and 36 = 3 × 12. • make a list of the first 12 multiples of a given 1-digit number and use this method to identify the common multiples of two given 1-digit numbers. • Find the common factors and multiples of two given whole numbers	• Multiple • Factor • Product • Quotient • Remainder

Four Operations of Whole Numbers – Pupils will learn how to multiply and divide up to 4-digit numbers.		
Key Concepts	**Learning Objectives**	**Maths Vocabulary**
• Parts are added to make up a whole • A whole is the sum of different parts • Comparing numbers results in one number being more or less than the other number by a certain value • Multiplication is conceptualised from repeated addition of equal-sized groups of objects • Division is conceptualised as equal sharing or equal-sized grouping of objects	• Add and subtract up to 4-digit numbers with and without renaming • use a variety of mental strategies (number bond, making tens, breaking down numbers, using patterns etc) for the 4 operations and explain the process. • Multiply and divide numbers up to 4 digits by a 1-digit number, and numbers up to 3 digits by a 2-digit number • Estimate the answer before doing the calculation and check the reasonableness of the calculated answer by comparing it with the estimated value. • Draw and use the part-whole and comparison models to represent and solve word problems involving the four operations. • Apply the problem-solving strategies and heuristics strategies like systematic listing, guess and check, recognizing patterns and working backwards.	• Divide, quotient, remainder • Multiply, multiple, factor, product • ___times as many (eg. Twice is two times as many) • units • Part-whole • Comparison • Difference • Total
Tables and Line Graphs – Pupils will learn how to read, present and interpret data in tables and line graphs.		
Key Concepts	**Learning Objectives**	**Maths Vocabulary**
• Data can be organized and presented for interpretation using table & line graphs • Bar graphs are used for comparison of data across categories • Line graphs display data which are collected over a period of time. Line graphs shows the trend on how the data changes at regular intervals.	• Present, read, and interpret data from tables and graphs • Discuss how data is collected and displayed in a bar graph • Read and interpret data from bar graphs and line graphs • Identify the differences and suitability of presenting data between a bar graph and a line graph • Recognise and explain why a bar graph and line graph may be misleading	• Data • scale • Tally • Table • Row and column • Bar graph • Line graph • Labels, category • Horizontal scale, vertical scale

Fractions – Pupils will learn about mixed numbers, improper fractions, comparison of fractions, adding and subtracting fractions and fractions of a set.		
Key Concepts	**Learning Objectives**	**Maths Vocabulary**
• A fraction tells us how much of a whole it represents. • A mixed number is a whole number, and a proper fraction represented together. • An improper fraction is a fraction with a numerator greater than the denominator • A fraction may be expressed as a part of a set of objects	• Relate fractions in measurements such as $\frac{1}{10}$ kg or $1\frac{2}{5}$ litres • Convert between mixed numbers and improper fractions • Compare and order fractions involving mixed numbers and/or improper fractions using different strategies such as comparing using half as a benchmark, comparing the numerators/ denominators and comparing using equivalent fractions. • Find the sum or difference of the equal parts being counted (numerator), out of the number of equal parts in the whole (denominator) in addition and subtraction of fraction. • Add and subtract fractions in different denominators by converting them into common denominators applying the concept of equivalent fractions and common multiples. • Describe fractions as a set of objects and represent it in pictorial illustration and model drawing using the concept of equal grouping. Why is $\frac{1}{6}$ of 24 apples = 4?   1 unit = 24 ÷ 6 = 4 • Solve problems involving fraction of a set.	• Improper fractions, like fractions, unlike fractions, equivalent fractions • Simplest form • Numerator and denominator • Halves, thirds, quarters, fifths.. • Part-whole • units

Angles – Pupils will learn how to name angles, measure and draw angles using a protractor		
Key Concepts	**Learning Objectives**	**Maths Vocabulary**
• An angle is a measure of the amount of turning made between two straight lines about a point (vertex)	• Name an angle using notation ∠ABC or ∠a • Estimate before measuring angles • Measure an angle accurately using protractor • Draw an angle using a protractor and mark it with correct labelling. • Associate the amount of turning, clockwise or anti-clockwise, with an angle measured in degrees. (Eg. One-quarter turn is 90 degrees)	• Figure • Degrees • Right angle, acute angle, obtuse angle
Symmetry – Pupils will learn what symmetric figures are (figures that have one or more lines of symmetry), and how to construct and draw symmetric figures and patterns.		
Key Concepts	**Learning Objectives**	**Maths Vocabulary**
• Symmetry is based on the concept of reflection, that is, a symmetric figure can be divided into 2 halves where each half is the mirror image of the other	• Identify if a figure or letter is symmetric • Identify lines of symmetry and state the number of lines of symmetry in a figure/pattern • Complete a symmetric figure/pattern on a square grid given half the symmetric figure/pattern • Use shapes to complete symmetric figures • Complete a symmetric pattern by shading a required number of squares	• Symmetry • Symmetric figure • Line of symmetry • Mirror image • Halves

Squares and Rectangles – Pupils will learn the properties of squares and rectangles, how to draw them, and how to find unknown sides and angles.		
Key Concepts	**Learning Objectives**	**Maths Vocabulary**
• A square is a four-sided figure with 4 equal sides and 4 right angles • A square is a special type of rectangle	• State the properties of a square and a rectangle • Draw a square or rectangle on a square grid, and with the aid of a set square or protractor without a square grid • Find unknown sides and angles of a square and a rectangle	• Square • Rectangle • Equal sides • Parallel • Perpendicular • Right angle

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Lesson Focus

Semester 2

Decimals – Pupils will learn to read write and compare decimals up to 3 decimals, and round decimals to 2 decimal places.		
Key Concepts	**Learning Objectives**	**Maths Vocabulary**
• Decimal is made up of a whole-number part and a fractional part.	• Identify the whole number parts and fractional parts in a decimal • State the place value (…ones, tenths, hundredths and thousandths) of each digit in a number up to 3 decimal places • Express a fraction with a denominator 10, 100 or 1000 as a decimal and vice versa. • Compare and order decimals by first comparing the whole-number parts, then tenths, hundredths and thousandth in order. • Represent equivalent decimals such as 0.7 = 0.70 = 0.700 • Recognise that the number of decimal places does not represent the value of the decimals. For example, 1.021 (3 decimal places) is less than 1.8 (1 decimal place) • Round a decimal to the nearest whole number, or up to 2 decimal places • Solve word problems involving mixed numbers, fractions and decimals	• Decimals • Fractions, numerator, denominator, simplest form • Place values, tenths, hundredths, thousandths • Compare, smaller than, greater than, more than, less than • Rounding

Four Operations of Decimals – Pupils will learn how to add, subtract, multiply and divide decimals using the standard algorithm.		
Key Concepts	**Learning Objectives**	**Maths Vocabulary**
• Parts are added to make up a whole and a whole is the sum of different parts • Multiplication is conceptualised from repeated addition of equal-sized groups of objects • Division is conceptualised as equal sharing or equal-sized grouping of objects	• Add and subtract decimals up to 2 decimal places with and without renaming using the concept of place value. • Add and subtract decimals with 1 decimal place mentally • Estimate the sum and difference between 2 decimals • Solve up to 2-step word problems involving addition and/or subtraction of decimals • Multiply and divide decimals up to 2 decimal places by a 1-digit whole number • Estimate the product in multiplication/quotient in division of decimals by a whole number • Divide a whole number by a 1-digit whole number and present the answer in decimal instead of quotient and remainder. • Round the quotients to 1 or 2 decimal places after dividing • Solve up to 2-step word problems involving the 4 operations of decimals	• Decimals • Decimal places • Place values • Add, subtract, multiply, divide • Product, factor, quotient, remainder • Estimate
Pie charts – Pupils will learn how to read, present and interpret data in pie chart		
Key Concepts	**Learning Objectives**	**Maths Vocabulary**
• Data can be organized and presented for interpretation using pie chart • A pie chart is used for data comparisons among different categories in proportional parts of a circle, showing part-whole relationships.	• Explain how data is represented in pie chart using the concept of fraction or part-whole relationship. • Present, read, and interpret data from tables, graphs and pie chart.	• Table • Data • Scale • Interval • Pie chart • Fraction • Part , whole • Half, quarter, tenth

Area and Perimeter – Pupils will learn how to find the unknown sides of squares and rectangles given their areas or perimeters, and how to find the areas and perimeters of composite figures made up of squares and rectangles.		
Key Concepts	**Learning Objectives**	**Maths Vocabulary**
• Area is the amount of surface space taken up by a closed figure • Perimeter is the distance around a closed figure	• Find the perimeter and area of a closed figure • Measure area in square centimetres (cm^2) and square metres (m^2) • Find the unknown side of a rectangle/square given its area or perimeter and one of the sides • Identify the shapes that make up a composite figure, and find the area and/or perimeter of the composite figure • Solve non-routine problems involving the area and/or perimeter of squares and/or rectangles	• Length • breadth • Area • Perimeter
Nets – Pupils will learn to identify and draw 2D representation of 3D geometric figures and visualize the nets of 3D geometric figures.		
Key Concepts	**Learning Objectives**	**Maths Vocabulary**
• A prism has faces of the same shape and size at opposite ends with the identical faces at opposite ends parallel to each other • A pyramid has a flat face as a base and triangular faces meet at a vertex.	• Name the 3D geometric figures. • Identify and discuss the similarities and differences between prisms and pyramids. • Draw 3D geometric figures on the isometric grid. • Visualise, identify and draw nets of 3D shapes.	• Geometrical properties: Flat face, curve face, vertex, vertices, edge, edges • Cube, cuboid, cone, cylinder, prism, pyramid • Net • base