Dawood Public School
Course Outline 2017-18
Math
Class IV

MONTHS	CONTENTS	DURATION
AUGUST	Place value + Comparing and Ordering Rounding off to the nearest 10's and 100's Divisibility rule Multiplication and Division Times Table 2-10 Activity Calendar Mental Math	1 week 1 week 3 days 1 week
SEPTEMBER	Angles – Reflex + Complimentary + Supplementary Prime & Composite Numbers Multiples and L.C.M Factors and H.C.F Times table 10-13 Activity Calendar Mental Math	1 week 3 days 1.4 week 1 week
OCTOBER	Fractions: Mixed number & Improper Fractions: Addition and Subtraction Fractions: Multiplication Squares and Rectangles Times Table 14 Activity Calendar Mental Math	1 week 1 week 1 week 1 week
NOVEMBER	Activity Calendar Mental Math Revision for Mid-term	
DECEMBER	Mid-term Exams Activity Calendar	
JANUARY	Decimals: Place value + Conversion Decimals: Comparing & Ordering Decimals: Four Operations Times table of 15 Activity Calendar Mental Math	1 week 1 week 2 weeks
FEBRUARY	Area & Perimeter: Square & Rectangle Composite Figure Time: Conversion Activity Calendar Mental Math	2 weeks 1 week 1 week
MARCH	Time: Duration Circle Triangle Times Table 2 - 15 Activity Calendar Mental Math	2 week 1 week 1 week
APRIL	Activity Calendar Mental Math Revision for Final term	
MAY	Final term Exams	

Syllabus Content:

AUGUST:

TOPICS	NUMBERS TO 100,000, DIVISIBILITY RULES, MULTIPLICATION & DIVISION		
SUB-TOPICS	**LEARNING OUTCOMES**	**WORKBOOK/BOOK PAGES**	**ACTIVITY**
Numbers beyond 10,000	Students should be able to: *recognize large numbers *read the numbers *differentiate between digit and a number *write in words, in standard form and in expanded form. *recognize each digit's place value. *tell what each digit stands for *how many thousands, hundreds, tens and ones in a number *what number comes before and after *make a smaller and a bigger number from given digits	Book: Page # 1 - 19 W/b 4A: Page # 1 - 19	*By using flash cards
Comparing & Ordering Rounding off to nearest Tens and Hundreds Divisibility Rules	*compare numbers *write numbers in ascending and descending order *complete the number pattern. *round off numbers to the nearest 10's, 100's *apply divisibility rules of 2, 3, 4, 5, 6, 9 and 10.		*Digits will be given, students will arrange and form numbers divisible by 2, 3, 4, 5, 6, 9, or 10
Multiplication Multiplying by tens Division Word problems	*label multiplier, multiplicand, product, divisor, dividend, quotient and remainder. *do double and triple multiplication. *multiply by 10's and it's multiples. *dividing by a one-digit divisor. *read and comprehend story sums. And decide the appropriate operator to be used. *solve puzzles involving 4 operations.	Book: Page # 29 - 47	*Learning tables through "BUZZ" activity.
Times Table 2-5 Mental Math	*write and learn the table. *write the answer of table asked in dodging form. *match the answer to the question. *fill in the blank *listen carefully, comprehend, calculate and write answer of mental math questions mentally and within seconds.	W/b 4A Page # 30 – 40, 42 - 47	

Sample Questions:

NUMBERS TO 10,000:
Q **What does the underline digit stands for?**
I) 27, 545 (II) 14 672

Q. Complete the table:

Standard form	Expended form	Word form
34 781		
	90 000 + 4 000 + 100 + 0 + 8	
		Forty-two thousand three hundred and one

DIVISIBILITY RULES:
Q. Is 23 456 divisible by 2? _____
Q. 34 560 is divisible by 3. _____ (Yes/ No)

MULTIPLICATION & DIVISION:
Q. Find the product of 1239 and 16
Q. Find the quotient of 345 by 9

MENTAL MATH:
Q. What is the value of 6 in 3467?
Q. Product of 5 and 5.
Q. Is 239 divisible by 4?

SEPTEMBER:

TOPICS	ANGLES, NUMBERS TO 100,000 (CONT.)		
SUB-TOPICS	LEARNING OUTCOMES	WORKBOOK/BOOK PAGES	ACTIVITY
Types of Angles	Students should be able to: *identify, describe and draw right, acute, obtuse, reflex, straight, complimentary and supplementary angles. *find compliment or supplement of a given angle.	Book: Page # 170 – 192 W/b 4B: Page # 56 - 64	*Angles activity will be conducted using children's arms. And making angles with matchsticks.
Prime & composite numbers	*identify if a number is prime or composite.		*Grid of Numbers 1-100 Activity
Factors and H.C.F			
Multiples and L.C.M	*recognize factors and multiples. *list all the factors of a 2-digit number.	Book: Page # 20 – 27	*By making different equal

	*find prime factors of a number. *find HCF & LCM of given 2-digit numbers	W/b 4A Page # 20 - 25	groups of a assigned number concept of prime, composite numbers and factors will be taught.
Times table 10-13	*write and learn the table. *write the answer of table asked in dodging form. *match the answer to the question. *fill in the blank		
Mental math	*listen carefully, comprehend, calculate mentally and write answer of mental math question within seconds.		

Sample Questions:
ANGLES:
Q. Draw 190⁰ angle.
Q. Find complement and supplement angles of 45⁰.

PRIME AND COMPOSITE NUMBERS:
Q. List all the prime numbers between 2 to 30.
Q. Sort out prime and composite numbers from the given list of numbers.

H.C.F AND L.C.M:
Q. List all the factors of 34.
Q. List first 20 multiples of 5.
Q. Find H.C.F/L.C.M of 12 and 18.

MENTAL MATH:
Q. Is 19 composite or prime number?
Q. Angle greater than 90⁰ and less than 180⁰ is called _____.

OCTOBER:

TOPICS	FRACTIONS I & II, SQUARES & RECTANGLES		
SUB-TOPICS	LEARNING OUTCOMES	WORKBOOK/BOOK PAGES	ACTIVITY
Improper, proper Fractions and mixed no. Add & Sub Fraction Simplest form Fraction of a set Multiplying fraction Word problems	Students should be able to: *identify improper fraction, proper fraction and mixed number. *convert mixed number into improper fraction and vice versa. *draw figure of the given fraction. *Add and subtract unlike and like fractions. *express the fraction in its simplest form *interpret fraction as part of a set of objects. *multiply fraction by a whole number. *solve word problems involving fractions.	Book: Page # 49 – 67, 69 - 83 W/b 4A Page # 51 – 62, 66 – 68, 71-73, 105- 114	*using pencil colors fraction of a set will be taught. *donuts activity
Properties of Squares & Rectangles Finding unknown angles and sides	*define quadrilateral. *list out the properties of squares and rectangles. *Find unknown angles of square and rectangles. *Find unknown sides of square & rectangles	Book: Page # 201 – 206 W/b 4B Page # 94 – 99	
Time table 14	*write and learn the table. *write the answer of table asked in dodging form. *match the answer to the question. *fill in the blank		
Mental Math	*listen carefully, comprehend, calculate and write answer of mental math questions mentally and within seconds.		

Sample Questions:

FRACTIONS:

Q. Draw figure for the following fractions.

i. $\frac{2}{5}$ ii. $3\frac{3}{4}$

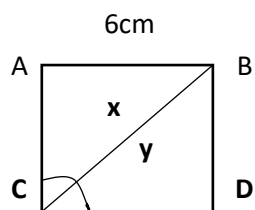Q. Solve.

- $\frac{2}{5} + \frac{12}{15}$
- $\frac{3}{8} - \frac{1}{9}$

- $\frac{3}{5} \times 25$

Squares and Rectangles:

Q. Fill in the blanks. <x= 45°

6cm

A ____ B

x

y

C ____ D

- <y = _____
- CD= _____
- BD // _____

MENTAL MATH:

Q. In a _____ fraction the denominator is greater than the numerator.

Q. There are _____ pairs of perpendicular lines in a rectangle.

NOVEMBER: **REVISION FOR MID-TERM**

DECEMBER: **MID-TERM EXAMS**

JANUARY:

TOPICS	DECIMALS I & DECIMALS II		
SUB- TOPICS	LEARNING OUTCOMES	WORKBOOK/BOOK PAGES	ACTIVITY
Decimal Place values Comparing & Ordering Rounding Off Conversion	Students should be able to: *identify place value of tenths, hundredths and thousandths. *read and write decimal numbers. *compare and order decimal numbers. *round off to nearest whole, nearest tenths and nearest hundredths. *convert decimal to fraction and vice-versa.	Book: Page # 125 – 149, 152 - 177 W/b 4B Page # 1 – 25, 30 - 53	*using piece of chalk or chocolate decimal places will be taught.

Add Subtract Multiply Divide	*add, subtract, multiply and divide decimal numbers.		
Times table 15	*write and learn the table. *write the answer of table asked in dodging form. *match the answer to the question. *fill in the blank		
Mental Math	*listen carefully, comprehend, calculate mentally and write answer of mental math questions within seconds.		

Sample Questions:

Decimals:
Q. Identify place value of digit 9 in:
- 13.569
- 123.09
- 5.906

Q. Round off 345.67 to nearest whole.
Q. Round off 345.67 to nearest tenths.
Q. Convert 3.67 to fraction.
Q. Multiply 345.65 by 2.

Mental Math:
Q. Second place value after decimal point is.
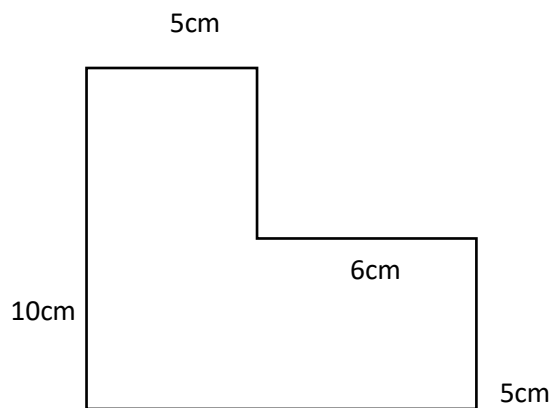Q. _____ tenths are equal to 1 ones.

FEBRUARY:

TOPICS	AREA & PERIMETER, TIME		
SUB-TOPICS	LEARNING OUTCOMES	WORKBOOK/BOOK PAGES	ACTIVITY
Area and Perimeter of Square & Rectangle Composite Shape	Students should be able to: *define area and perimeter. *find area and perimeter of square & rectangle using formula. *find the missing side when area or perimeter of square is given. *find the missing length or breadth when area or perimeter of rectangle is given. *find area and perimeter of composite shape.	Book: Page # 208 - 220 W/b 4B Page # 103 - 115	*students will find out area and perimeter of their erasers.
Time: Conversion	*read and write digital time. *convert time from 12-hour format to 24-hour format and vice-versa.	Book: Page # 227 – 235 W/b: Page # 127 - 132	*observe time on your digital clock. *observe change of time at midnight of 24-hour format in digital watch or mobile.
Mental Math	*listen carefully, comprehend, calculate and write answer of mental math questions mentally and within seconds.		

Sample Questions:

Area and Perimeter:
Q. Find the area and perimeter of a card sheet with all sides of equal length 5 cm.
Q. Find the length if the area is= 49cm^2.
Q. Find the breadth if the length = 7cm and the area = 21cm^2.
Q. Find the area and perimeter of a given composite shape.

Time:

Q. Complete the following table.

12-hour	24-hour
4:15 p.m.	
	00:15
	18:47

Mental Math:

Q. Write 12:15 p.m. in 24-hour format.

Q. The formula for finding the perimeter of rectangle is _____.

MARCH:

TOPICS	TIME (CONT.), CIRCLE, TRIANGLE		
SUB-TOPICS	LEARNING OUTCOMES	WORKBOOK/BOOK PAGES	ACTIVITY
Time: Duration Word problems	Students should be able to: *add and subtract durations. *remember formulas to find out duration, starting time and ending time. *solve story sums to find out duration, starting time or ending time.	Book: Page # 236 – 240 W/b 4B Page # 133 – 137	
Labeling Circle Drawing circle	*define and label chord, radius, diameter, centre, circumference, and quadrant. *draw circle and semi-circle.		*draw different shapes or figures (flower) with circle.
Types of Triangle	*identify and recognize kinds of triangle according to its sides and angles		*Triangle Hunt; searching different types of triangles in surrounding
Mental Math	*listen carefully, comprehend, calculate mentally and write answer of mental math questions within seconds.		

Sample Questions:

TIME: DURATION

Q. A train arrived at Islamabad station at 4:14 from Lahore. It reached after travelling for 2 hours. At what time did it leave from Lahore?

TRIANGLE:

Q. Identify type of triangle.

* 5Km, 5m, 5cm _____
* 40°, 130°, 10° _____

CIRCLE:

Q. Label chord and diameter in the given circle.

Mental Math:

Q. Radius is a _____ which starts from the centre and touches the circumference at only one point.

Q. Tri means _____.

Q. The formula for finding duration is _____.

APRIL: REVISION FOR FINALTERM

MAY: FINAL EXAMS

Assessment and Homework:

Students will be assessed by taking test of each and every chapter. Home Work shall be given on a daily basis.

Mathematical Symbols:

* + ADDITION
* - SUBTRACTION
* × MULTIPLICATION
* ÷ DIVISION
* < LESS THAN
* \> GREATER THAN
* = EQUALS TO
* ~ APPROXIMATE
* / FRACTION
* ml MILLI LITRE
* l LITRE
* cm CENTIMETRES
* m METRES
* kg KILOGRAM
* g GRAMS
* ° DEGREE
* ‖‖ PARALLEL LINES
* ↔ LINE
* ↑ RAY
* __ LINE SEGMENT
* ⊥ PERPENDICULAR LINES

- ∟ ANGLE
- ▲ TRIANGLE
- HCF HIGHEST COMMON FACTORS
- LCM LEAST COMMON MULTIPLE

Important Formulae:

- P = 2(l + b)   PERIMETER OF RECTANGLE
- P= 4 × l   PERIMETER OF SQUARE
- A = l × b   AREA OF RECTANGLE
- A = l × l   AREA OF SQUARE
- Duration = Ending time – Starting time
- Starting time = Ending time – duration
- Ending time = Starting time + Duration

Keywords:

- **Angle**- Amount of turning between two lines or rays.
- **Common Factors** - A factor of two or more numbers. A number that will divide exactly into different numbers.
- **Complementary Angles** - The two angles involved when the sum is 90°.
- **Composite Number** - A composite number has at least one other factor aside from its own. A composite number cannot be a prime number.
- **Constant** - A value that doesn't change.
- **Congruent** - Objects and figures that have the same size and shape. The shapes can be turned into one another with a flip, rotation or turn.
- **Chord**- A line segment that touches the circumference at two points but does not pass through the centre of the circle.
- **Circumference**- Boundary of a circle.
- **Denominator** - The denominator is the bottom number of a fraction. (Numerator is the top number) The Denominator is the total number of parts.
- **Degree** - The unit of an angle, angles are measured in degrees shown by the degree symbol: °
- **Difference** - The difference is what is found when one number is subtracted from another. Finding the difference in a number requires the use of subtraction.
- **Diameter**- A line segment that touches the circle at two points and passes through the centre of the circle.
- **Digit** - Digits are making reference to numerals. 176 is a 3 digit number.
- **Dividend** – The number that is being divided.
- **Diviso**r - The number that is dividing a dividend.
- **Equilateral** - All sides are equal.
- **Even Number** - A number that can be divided or is divisible by 2.
- **Evaluate** - To calculate the numerical value.
- **Factor** - A number that will divide into another number exactly. (The factors of 10 are 1, 2 and 5).
- **Fraction -** A number that shows part of a whole. It consists of a numerator and a denominator.
- **Geometry** - The study of lines, angles, shapes and their properties. Geometry is concerned with physical shapes and the dimensions of objects.
- **Improper Fraction - A fraction where the denominator greater than the numerator.** E.g., 6/4
- **Isosceles** - A polygon having two sides equal in length.
- **Kilometer** - A unit of measure that equals 1000 meters.
- **Like Fractions** - Fractions having the same denominator. (Numerator is the top, denominator is the bottom)
- **Line** - A set of points joined together.
- **Line Segment** - A straight path that has a beginning and an end - endpoints.

- **Mixed Numbers** - Mixed numbers refer to whole numbers with fractions or decimals. Example 3 1/2 or 3.5.
- **Multiple** - The multiple of a number is the product of the number and any other whole number. (2,4,6,8 are multiples of 2)
- **Multiplication** - Often referred to as 'fast adding'. Multiplication is the repeated addition of the same number 4x3 is the same as saying 3+3+3+3.
- **Numerator** - The top number in a fraction. In 1/2, 1 is the numerator and 2 is the denominator. The numerator is the portion of the denominator.
- **Odd Number** - A whole number that always has one as a remainder when divided by 2.
- **Operation** - Refers to addition, subtraction, multiplication or divisions which are called the four operations in mathematics or arithmetic.
- **Perimeter** - The total distance around the outside of a polygon. The total distance around is obtained by adding together the units of measure from each side.
- **Perpendicular** - When two lines or line segments intersect and form right angles.
- **Prime Numbers -** Prime numbers are integers that are greater than 1 and are only divisible by them and 1.
- **Product** - The sum obtained when any two or more numbers are multiplied together.
- **Proper Fraction** - A fraction where the denominator is greater than the numerator.
- **Protractor** - A semi-circle device used for measuring angles. The edge is subdivided into degrees. Commonly known as D.
- **Quotient** - The answer of a division sum.
- **Radius**- A line segment that touches the circle at one point and starts from the centre of the circle.
- **Ray** - A straight line with one endpoint. The line extends infinitely.
- **Rectangle** - A 4- sided figure with opposite sides equal in measurement.
- **Remainder** - The number that is left over when the number cannot be divided evenly.
- **Subtraction** - The operation of finding the difference between two numbers or quantities. A process of 'taking away'.
- **Supplementary Angles** - Two angles are supplementary if their sum totals 180°.
- **Triangle** - Three sided polygon.
- **Unlike Fractions**- A set of fraction with different denominators.
- **Vertex**- A point of intersection where two (or more) rays meet, often called the corner. Wherever sides or edges meet on polygons or shapes. The point of a cone, the corners of cubes or squares.
- **Whole Number** - A whole number doesn't contain a fraction. A whole number is a positive integer which has 1 or more units and can be positive or negative.

Resource List:

Books:

- Dr Fong Ho Kheong, ChelviRamakrishnan, GanKeeSoon(2nd edition), My Pals are her Book 1a and 1b,Singapore; Marshall Cavendish Education
- Lawler, Dr Graham (4th Edition) , Understanding Maths Book 1,2
- Winnie Tan and S. T. Rajah, Progressive Mathematics Book 1,2, Oxford University press;
- P.N. Singh, A. K. Roy, and S. Dudeja (Second edition), New Count Down Mathematics Book 1,2, Oxford University Press; SPMG Mathematics Book 1,2

Websites:

- www.teachingpacks.co.uk/the-mental-maths-pack/
- www.nrich.com
- www.softschools.com/math/worksheets
- http://www.onlinemathlearning.com
- http://www.mathdrills.com
- http://www.mathcrush.com