DR. M.K.K. ARYA MODEL SCHOOL

SYLLABUS FOR CLASS VIII (2017-2018)

SUBJECT – MATHS

Syllabus to be completed from April till September

1. Rational numbers

2. Linear Equations in One Variable

3. Understanding Quadrilaterals

4. Practical Geometry

5. Data Handling

6. Squares and Square Roots

7. Cubes and Cube Roots

8. Comparing Quantities

15. Introduction to Graphs

16. Playing with Numbers

APRIL:

Week 1(April 6-7): **Basic Concepts**

Week 2(April 10-15): **CH. 1 Rational Numbers**

Comparison of rational numbers, addition and subtraction of rational numbers, multiplication and division of rational numbers, properties of rational numbers.

Week 3(April 17-22): Representation of a rational number on a number line, rational numbers between two given rational numbers,

Week 4(April 24-29): **CH. 2 Linear Equations in One Variable**

 solving linear equations in one variable, some applications on linear equations, solving equations having variable on both sides.

Week 5(April 24-29): some more applications on linear equations, reducing equations to simpler form.

MAY:

Week 1(May 1-6):   **CH. 3**   **Understanding Quadrilaterals**

Classification of polygons, diagonals, convex and concave polygons, angle sum property, measure of exterior angles of polygons, kinds of quadrilaterals.

Week 2(May 8-12):   All the properties of special quadrilaterals, some special parallelograms and their properties

Week 3(May 15-20):   **CH. 4**   **Practical Geometry**

Constructing a quadrilateral when: four sides and a diagonal are given, two diagonals and three sides are given, two adjacent sides and three angles are given.

Week 4(May 22-27):   Constructing a quadrilateral when: three sides and two included angles are given, some special cases.

JULY:

Week 1(July 3-8):   **CH. 5**   **Data Handling**

Organising and grouping data, bar graphs, histograms, circle graphs or pie chart, chance and probability.

Week 2(July 10-15):   **CH. 6**   **Squares and Square Roots**

Properties of square numbers, some interesting patters in squares, finding the square of a number, pythagorean triplets, finding square roots by prime factorisation method.

Week 3(July 17-22):   Finding square roots by long division, square roots of decimals, estimating square root.

Week 4(July 24-29):   **CH. 7**   **Cubes and Cube Roots**

Smallest multiple that is a perfect cube, cube root through prime factorisation, finding cube roots of cube numbers by estimation.

AUGUST:

Week 1 (July 31-August 5):   **CH. 8**   **Comparing Quantities**

Recalling ratio and percentage, finding increase or decrease percent, finding discounts, profit and loss, finding cost price, selling price, profit%, loss%, Finding sales tax and value added tax,

Week 2(August 7-11): Calculating compound interest when rate is compounded annually or half yearly, applications of compound interest formula.

Week 3(August 14-19): **CH. 15 Introduction to Graphs**

Bar graph, pie graph, histogram, line graphs, linear graphs, plotting a point, coordinates, some applications (quantity and cost, principal and simple interest, time and distance)

Week 4(August 21-26): **CH. 16 Playing with numbers**

Numbers in general form, finding the missing numerals represented by alphabets in sums involving any of four operations, test of divisibility by 2,3,5,9 and 10 and related problems.

Activities:

1.Convex and concave polygon.

2.Angle sum property of a quadrilateral.

3.Angle sum property of a polygon.

4.(a) Kite (b) Rhombus

5.Properties of a parallelogram.

6.Property of diagonals of a rhombus.

7.Property of diagonals of a rectangle.

8.Statistics.

9.Magic of numbers.

SEPTEMBER: REVISION and HALF YEARLY EXAMS

Syllabus to be completed from October till December

9: Algebraic Expressions and Identities

10: Visualising Solid Shapes

11: Mensuration

12: Exponents and Powers

13: Direct and Inverse Proportions

14: Factorisation

OCTOBER:

Week 1(October 3-7):   CH. 9   Algebraic Expressions and Identities

Like and unlike terms, addition and subtraction of algebraic expression, multiplying two or more monomials, multiplying monomial by polynomial.

Week 2(October 9-13):   Multiplying a polynomial by a polynomial, standard identities.

Week 3(October 16-18):   CH. 12   Exponents and Powers

Powers with negative exponents, laws of exponents, standard form and scientific notation using exponents.

Week 4(October 23-28):   CH. 14   Factorisation

Method of common factors, factorisation by regrouping terms.

NOVEMBER:

Week 1(November 2-3):   Factorisation using identities,

Week 2(November 6-10): Division of algebraic expressions (monomial by monomial, polynomial by monomial)**,** Division of algebraic expressions (polynomial by polynomial), error finding.

Week 3(November 13-18):   CH. 11   Mensuration

Area of basic solid shapes (rectangle, square, triangle, parallelogram, circle), area of trapezium, area of general quadrilateral.

Week 4(November 20-25): Surface area of cube, cuboid and cylinder, volume of cube, cuboid and cylinder.

DECEMBER:

Week 1(November 27-December 2):   CH. 13   Direct and Inverse Proportions

Direct proportion: simple and direct word problems

Week 2(December 4-8): Inverse proportion: simple and direct word problems

Week 3(December 11-16):   CH. 10   Visualising Solid Shapes

Views of 3D shapes, mapping space around us, counting faces, edges and vertices of 3D shapes with flat faces and verification of Euler's rule, convex and regular polyhedron.

Activities:

1. To make a dice with the help of a paper net. Throw this dice 100 times and write down the outcomes in a table and note down the observations.
2. (a) Algebraic identity $(a + b)^2 = a^2 + b^2 + 2ab$
   (b) Algebraic identity $(x + a)(x + b) = x^2 + ax + bx + ab$

(c) Algebraic identity $a^2 - b^2 = (a + b)(a - b)$

3. To explore the relationship between:

(a) Length (in cm) and perimeter (in cm).

(b) Length (in cm) and area (in cm^2) of 5 squares of different dimension drawn on a square paper.

4. Cubes and Cuboids.

5. Different view of three dimensional figures.

6. To find the formula for surface area of a cuboid.

7. Lateral surface area of a Right Circular Cylinder.

8. To find the formula of a Right Circular Cylinder.

9. To find the formula for the volume of a cuboid.

10. To study the difference between surface area of two unit   cubes and the cuboid formed by joining them.

11. To find volume of a right circular cylinder.

JANUARY: REVISION