

CLASS-IX [SESSION- 2020 - 21]

Teachers/learners, please take note that the revised syllabus for the academic session 2020-21.

UNIT I – NUMBER SYSTEM [CHAPTER- REAL NUMBERS]

Exist in current session	Deleted from current session
<p>1. Review of representation of natural Numbers, integers, rational numbers on the <u>number line</u>. Rational number as <u>terminating decimals</u>. <u>Operations on real number</u>.</p> <p>2. Examples of non-terminating decimals. Existence of non-rational numbers (<u>irrational numbers</u>) such as $\sqrt{2}$, $\sqrt{3}$, and their <u>representation on number line</u>.</p> <p>3. Rationalization (with precise meaning) of real numbers of the type $\frac{1}{a+b\sqrt{x}}$ & $\frac{1}{\sqrt{x}+\sqrt{3}}$ (and their combination) where x and y are Natural number and a & b are integers.</p> <p>4. Recall of laws of exponents with integral powers. Rational exponents with positive real bases (to be done by particular cases, allowing learner to arrive at the general laws.)</p>	<p>1. Representation of <u>terminating/ non-terminating recurring decimals</u> on the number line through successive magnification.</p> <p>2. Explaining that every real number is <u>Represented by a unique point on the number line</u> and conversely, viz. every point on the number line represented a unique real number</p> <p>3. Definition of nth root of a real number.</p>

UNIT II – ALGEBRA

[CHAPTER- POLYNOMIALS]

Exist in current session	Deleted from current session
<p>Definition of a <u>polynomials</u> in one variable, With <u>examples</u> and counter examples. Coefficient of a <u>polynomial</u>, terms of a polynomial and zero <u>polynomial</u>. <u>Degree of a polynomial</u>. Constant, <u>linear</u>, quadratic and cubic polynomials. <u>Monomials</u>, <u>binomials</u>, <u>trinomials</u>. Factors and <u>multiples</u>. <u>Zeros of a polynomial</u>. Factorization of ax^2+bx+c, $a \neq 0$ where a, b and c are real numbers and of cubic polynomials using the factor theorem. Recall of algebraic expressions and identities. Verification of <u>identities</u>:</p> $(x + y + z)^2 = x^2 + y^2 + z^2 + 2xy + 2yz + 2zx$ $(x \pm y)^3 = x^3 \pm y^3 \pm 3xy(x \pm y)$ $x^3 \pm y^3 = (x \pm y)(x^2 \pm xy + y^2)$ <p><u>And their use in factorization of polynomials.</u></p>	<p>Motivate and state the remainder theorem with examples.</p> $x^3 + y^3 + z^3 - 3xyz$

[CHAPTER- LINEAR EQUATIONS IN TWO VARIABLES]

Exist in current session	Deleted from current session
Recall of linear equations in two variable. Introduction to the equation in two variables. Focus on linear equations of the type $ax + by + c = 0$. Explain that a linear equation in two variables has infinitely many solutions and justify their being written as ordered pairs of real numbers, plotting them and showing that they lie on a line. Graph of linear equations in two variables. Examples, problems from real life with algebraic and graphical solutions being done simultaneously.	Examples, problem on Ratio and Proportion.
UNIT III- COORDINATE GEOMETRY [CHAPTER- COORDINATE GEOMETRY]	
The Cartesian plane, coordinates of a point, names and Terms associated with the coordinate plane, notations, plotting points in the plane.	No deletion

UNIT IV - GEOMETRY

[CHAPTER- INTRODUCTION TO EUCLID'S GEOMETRY]

Exist in current session	Deleted from current session
	Delete the chapter.
[CHAPTER- LINES AND ANGLES]	
<p>1. (Motivate) <u>If</u> a ray stands on a line, then the sum of the two adjacent angles so formed is 180° and the converse.</p> <p>2. (Prove) <u>If</u> two lines intersect, vertically opposite angles are formed.</p> <p>3. (Motivate) Results on corresponding angles, alternate Angles, interior angles when a transversal intersects two <u>parallel</u> lines.</p> <p>4. (Motivate) Lines which are parallel to a given line are <u>parallel</u>.</p> <p>5. (Prove) The sum of the angles of a triangle is 180°.</p> <p>6. (Motivate) If a side of a triangle is produced, the exterior Angle so formed is equal to the sum of the interior opposite <u>angles</u>.</p>	No deletion.

[CHAPTER- TRIANGLES]

Exist in current session	Deleted from current session
<p>1. (Motivate) Two triangles are congruent if any two <u>sides</u> and the included angle of one triangle is equal to <u>any two sides</u> and the included angle of the other triangle (SAS Congruence).</p> <p>2. (Motivate) Two triangles are congruent if the three <u>Sides</u> of one triangle are equal to three sides of the Other triangle (SSS Congruence).</p> <p>3. (Motivate) Two right triangles are congruent if the Hypotenuse and a side of one triangle are equal (<u>respectively</u>) to the hypotenuse and a side of the other triangle. (RHS Congruence).</p> <p>4. (Prove) <u>The</u> angles opposite to equal sides of a <u>triangle</u> are equal.</p> <p>5. (Motivate) <u>The</u> sides opposite to equal angles of a <u>triangle</u> are equal.</p>	<p>1. Proof of the theorem deleted- Two triangles <u>are</u> congruent if any two angles and the included sides of one triangle is equal to Any two angles and the included side of <u>the</u> other triangle (ASA Congruence).</p> <p>2. Tropic deleted- Triangle inequalities and relation between 'angle and facing side' <u>Inequalities in triangles</u>.</p>

[CHAPTER- QUADRILATERALS]

Exist in current session	Deleted from current session
<p>1. (Prove) The diagonal divides a parallelogram into <u>two</u> congruent triangles.</p> <p>2. (Motivate) <u>In</u> a parallelogram opposite sides are <u>equal</u>, and conversely.</p> <p>3. (Motivate) <u>In</u> a parallelogram opposite angles are <u>equal</u>, and conversely.</p> <p>4. (Motivate) A quadrilateral is a parallelogram if a <u>pair</u> of its opposite sides is parallel and equal.</p> <p>5. (Motivate) <u>In</u> a parallelogram, the diagonals bisect <u>each</u> other and conversely.</p> <p>6. (Motivate) <u>In</u> a triangle, the line segment joining the <u>mid-</u> points of any two sides is parallel to the <u>third</u> side and in half of it and its converse.</p>	No deletion
<h3>[CHAPTER- AREA]</h3>	
	Delete the chapter

[CHAPTER- CIRCLES]

Exist in current session	Deleted from current session
<p>Through examples, arrive at definition of circle and <u>related</u> concept-radius, circumference, diameter , <u>chord</u> , arc, secant, sector, segment, subtended angle.</p> <p>1. (Prove) Equal chords of a circle subtended equal <u>angles</u> at the center and its converse.</p> <p>2. (Motivate) <u>The</u> perpendicular from the center of a <u>circle</u> to a chord bisect the chord and conversely, <u>the</u> <u>line</u> drawn through the center of a circle to bisect <u>the</u> <u>cord</u> is perpendicular to the chord.</p> <p>3. (Motivate) Angles in the same segment of a circle <u>are</u> equal.</p> <p>4. (Motivate) Equal chords of a circle (or of congruent circles) are equidistant from the <u>center</u> (or their respective centers) and conversely.</p> <p>5. (Prove) The angle subtended by an arc at the <u>center</u> is double the angle subtended by it at any <u>point</u> on the remaining part of the circle.</p> <p>6. (Motivate) The sum of either of the pair of the <u>opposite</u> angles of a cyclic quadrilateral is 180° and its converse.</p>	<p>1. There is one and only one circle passing through three given non-collinear points.</p> <p>2. If a line segment joining two points subtends <u>equal</u> angle at two other points lining on the same side of the line containing the segment, <u>the</u> <u>four</u> points lie on a circle</p>

[CHAPTER- CONSTRUCTIONS]

Exist in current session	Deleted from current session
1. Construction of bisectors of line segments and angles of measure 60° , 90° , 45° etc....., equilateral triangles. 2. Construction of a triangle given its base, sum / difference of the other two sides and one base angle.	Construction of a triangle of given perimeter and base triangle.

UNIT V- MENSURATION

[CHAPTER-AREAS]

Area of a triangle using Heron's formula (without proof)	Application of Heron's formula in finding the area of a quadrilateral.
--	--

[CHAPTER- SURFACE AREAS AND VOLUMES]

Surface areas and volumes of cubes, cuboids, spheres (including hemisphere) and right circular cylinders/ Cones.	No deletion
--	-------------

UNIT VI – STATISTICS & PROBABILITY
[CHAPTER- STATISTICS]

Exist in current session	Deleted from current session
Introduction to statistics: Collection of data, <u>presentation</u> of data- tabular form, ungrouped/ <u>grouped</u> , bar graph.	1. Histograms (with varying base length), 2. <u>Frequency Polygons</u> . 3. Mean, Median and mode of ungrouped data.
[CHAPTER- PROBABILITY]	
History, Repeated experiments and observed frequency <u>approach</u> to probability. Focus is on empirical probability. (A large amount of time to be devoted to group and to <u>individual</u> activities to motivate the concept; the <u>experiments</u> to be drawn from real- life situations, and <u>form</u> examples used in the chapter on statistics.)	No deletion

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★
★ **Analyzed & Compiled by**

★ **# Deepak Kumar Choudhary**

★ **TGT (Science)**

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★
★ **R. S. M. Public School, Supaul**

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★