UNIT 1:
Basics of Geometry
September

1. Segment and angles
2. Line segment
3. Parallel Lines and Transversals
4. Corresponding angles, alternate interior angles, alternate exterior angles, same side interior angles
5. Angles in a Triangle
6. Sum of interior angles is 180 degrees, Exterior angles equals two opposite interior angles in a triangle
7. Inequalities in Triangles
8. Sum of the two short sides must be greater than the longest side of the triangle
9. The Pythagorean Theorem and Its Converse
10. Distance ,Midpoint Formulas and directed line segment
11. Slope of a Parallel Line and Slope of a Perpendicular Line
12. Equation of a Line
13. Equation of Parallel and Perpendicular Lines

Unit 2:
Constructions
October

1. Construction of a perpendicular bisector
2. Construction of an angle bisector
3. Construction of perpendicular lines
4. Construction of parallel lines
5. Determine whether two lines are parallel or perpendicular

Unit 3:
Quadrilaterals
November

1.   Regular Polygons (Project)

2.   Polygons and angle measure

3.   Sum of interior and exterior angles of a given regular polygon

4.   Types and Properties of Quadrilaterals (Parallelogram, rhombus, square, rectangle, and trapezoid)

5.   Classifying Quadrilaterals

6.   Inscribed Triangle, Square, and Hexagon (Regular Polygons)

Unit 4:
Transformations in the Plane
December

1.   Translation

2.   Reflection

3.   Rotations

4.   Dilations

5.   Composition of Transformation

Unit 5:
Coordinate Geometry
January

1. Triangles and Quadrilaterals in the coordinate plane

2. Investigate, justify and apply properties of triangles and quadrilaterals in the coordinate plane using the distance, midpoint, and slope formulas

3. Congruence and similarity

4. Triangle congruence

5. Proving Triangles Similar (AA, SAS, and SSS theorems)

6. Solving Similarity Problems

7. Proportionality in a Triangle

8. Proportionality in a Right Triangle

9. Concurrence, Medians and Altitudes in a Triangle

10. Right Triangle Trigonometry

Unit 6:
Circles
February

1. Area and Circumference of a Circle

2. Chords and Circles

3. Tangent to Circles

4. Secants-Secants to Circles

5. Tangents and Secants

6. Arcs Arc Length

7. Chord- Chord relationship in a Circle

8. Arcs of a Circle cut by two parallel lines

9. Two tangents to a circle from the same external point

10. Two secants in a circle from the same external point

Unit 7:
Circles in Coordinate Geometry
March

       1.   Circles in the coordinate plane

       2.   Writing the equation of a circle with the center at the origin and a radius

       3.   Write the equation of a circle given its graph

       4.   Write the equation of a circle with its center not in the origin

       5.   Graphing circles with a given center and radius

       6.   Linear and Quadratic systems of an equation (graphically)

Unit 8:
Solid Geometry
April

       1.   Lines and Planes in three-dimensional space

       2.   Planes and lines in space

       3.   Perpendicular and parallel planes

       4.   Three-dimensional shapes and types

       5.   Measurement of three-dimensional shapes (Project)

       6.   Prisms, Cylinders and Cones

Unit 9:
Trigonometry
May

1. Right Triangle Trigonometry

2. The Pythagorean Theorem

3. Pythagorean Triples

4. Special Right Triangles (30-60-90) (45-45-90)

5. The Sine, Cosine, Tangent Ratios

6. Sine and Cosine of Complementary Angles, Co-functions

7. Using Inverse Sine, Inverse Cosine and Inverse Tangent

8. Sine and Cosine Law