**Course Name:** PLANE GEOMETRY Mrs. Hanczyc

**RESOURCE BOOK**: Prentice Hall, “Geometry” **AUTHORS:** Bass, Charles, Johnson, Kennedy; Copyright 2004

**Objectives:** Plane Geometry is for all college bound and career oriented students. It includes the study of the properties of physical shapes such as angles, triangles, polygons, and circles with emphasis on theory, problem solving and practical applications. Integrated into problem solving is the deductive reasoning approach and the use of algebraic concepts to arrive at solutions.

**MATERIAL COVERED:**

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| **Chapter 1: Tools of Geometry** **Section 1-6**: Midpoint and distance **Section 1-7** Perimeters, Circumference and Areas **Chapter 2: Reasoning and Proofs** **Section 2-5:** Proving Angles Congruent **Chapter 3: Parallel and Perpendicular Lines** **Section 3-1:** Properties of Parallel Lines **Section 3-2:** Proving Lines Parallel **Section 3-4:** The Polygon-Angle Sum Theorems **Section 3-6** Slopes of Parallel and perpendicular lines **Chapter 4: Congruent Triangles** **Section 4-1:** Congruent Figures **Section 4-2:** Triangle Congruence by SSS and SAS **Section 4-3:** Triangle Congruence by ASA and AAS **Section 4-4:** Using Congruent Triangles: CPCTC **Section 4-5:** Isosceles and Equilateral Triangles **Section 4-6:** Congruence in Right Triangles **Chapter 5: Relationships Within Triangles** **Section 5-1:** Mid-segments of a Triangle **Section 5-2:** Bisectors in Triangles **Section 5-3:** Concurrent Lines (Medians, Altitudes, Perpendicular Bisectors, Angle Bisectors) **Section 5-5:** Inequalities in Triangles **Chapter 6: Quadrilaterals** **Section 6-1:** Classifying Quadrilaterals **Section 6-2:** Properties of Parallelograms **Section 6-3:** Proving that a Quadrilateral is a Parallelogram **Section 6-4:** Special Parallelogram **Section 6-5:** Trapezoids and Kites **Section 6.6:** Placing figures in the coordinate plane **Section 6-7:** Proofs using coordinate geometry  | **Chapter 7**: **Area** **Section 7-1:** Areas of Parallelograms and Triangles **Section 7-2:** The Pythagorean Theorem and its Converse **Section 7-3:** Special Right Triangles **Section 7-4:** Areas of Trapezoids, Rhombuses and Kites **Section 7-5:** Areas of Regular Polygons **Section 7-6:** Circles and Arcs **Section 7-7:** Areas of Circles and Sectors **Section 7-8**: Geometric Probability **Chapter 8: Similarity** **Section 8-2** Similar Polygons **Section 8-3** Proving Triangles Similar **Section 8-4** Similarity in Right Triangles **Section 8-5:** Proportions in Triangles **Section 8-6:** Perimeters and Areas of Similar Figures **Chapter 9: Right Triangle Trigonometry** **Section 9-1:** Tangent Ratio **Section 9-2:** Sine & cosine Ratios **Section 9-3:** Angles of Elevation & Depression **Chapter 10: Surface Area and Volume** **Section 10-3:** Surface Areas of Prisms and Cylinders **Section 10-4:** Surface Areas of Pyramids and Cones **Section 10-5:** Volumes of Prisms and Cylinders **Section 10-6:** Volumes of Pyramids and Cones **Section 10-7:** Surface Area and Volume of Spheres **Section 10-8:** Areas and Volumes of Similar Solids **Chapter 11: Circles** **Section 11-1:** Tangent Lines **Section 11-2:** Chords and Arcs **Section 11-4:** Angle Measures and Segment Lengths  |