Outline of coursework:

1st nine weeks:

1. Basics of Geometry – terms, points, lines, planes, and angles
2. Reasoning and Proof – conditional statements, deductive reasoning, properties, theorems
3. Parallel and Perpendicular Lines - angles, proof of parallel lines, slope and equations of lines

2nd nine weeks:

1. Congruent Triangles – triangle sum, proof of congruent triangles, isosceles and equilateral triangles
2. Triangles relationships – midsements, perpendicular bisectors, angle bisectors, medians, altitudes, triangle inequalities
3. Similarity – ratios, proportions, similar polygons and triangles, proportionality theorem

3rd nine weeks:

1. Right triangles and Trigonometry – Pythagorean theorem, similar right triangles, special right triangles, trigonometry
2. Quadrilaterals – angle measures in polygons, parallelograms, rhombuses, squares, rectangles, trapezoids and kites, identification of special polygons
3. Transformations – translations, reflections, rotations, composite transformations, symmetry, dilations

4th nine weeks:

1. Circles – tangents, arcs, chords, inscribed angles, angle relationships, segment relationships, equations and graphs of circles
2. Area – triangles, parallelograms trapezoids, kites, rhombuses, similar figures, circumference and areas of circles and sectors, areas of regular polygons, geometric probability
3. Volume and Surface Area – prisms, cylinders, pyramids, cones, spheres, similar solids