Topics in Geometry (draft)

- Definitions, postulates and theorems
- Properties and Measures of Line Segments and Angles
- Distance and Midpoint
- Geometric Proof - Inductive and deductive reasoning
- Parallel and perpendicular lines, transversal and angle relationships
- Triangles: properties, similar and congruent triangles and corresponding parts
- Right triangles, Pythagorean Theorem, right triangle trigonometry
- Use the properties of special triangles: $45^\circ$-$45^\circ$-$90^\circ$ and $30^\circ$-$60^\circ$-$90^\circ$
- Inequalities in a triangle
- Convex Polygons
- Quadrilaterals (parallelograms, kites, squares, rectangles, rhombuses and trapezoids) and their properties
- Ratios, Rates and Proportions
- Circles: Properties, Related Segments, Angles, tangent and secant lines, area and perimeter
- Polygons: Properties, area, perimeter, similar and congruent polygons
- Symmetry and Transformation of geometric figures
- The Rectangular Coordinate system
- Graphs of Linear Equations and Slope
- Applications of geometry to real world situations
- Surface Area and Volume of Solid Figures

Optional: Sets and Venn diagrams
  - Indirect proof
  - Basic geometric constructions with compass and straightedge
  - Equations of lines