

# Kendall Park Learning Center

## Course Title: Geometry (Advanced Credit)

**Course Length:** Six weeks (120 hours)

**Description:**

This course covers a full year of Geometry and provides students with a thorough background in geometry topics needed for continued study in mathematics and applied subjects. These topics include fundamental postulates and theorems, parallel and perpendicular lines, congruence, similarity, inequalities, properties of geometric figures, right triangle trigonometry, coordinate geometry and transformations.

**Prerequisites:**

Geometry is a course offered to students who have completed a high school level of Algebra 1 with at least a B.

**Requirement:**

Students must pass with at least A- to receive full credit for this class.

**Topics Covered:**

1. Basic Definitions and Their Uses
  - Points, Lines, Planes and Angles
2. Logic
  - Deductive and Inductive Reasoning
  - Direct Proof
3. Angles and Perpendicular Lines
4. Parallel Lines and Planes
5. Constructions
6. Coordinate Geometry
  - Distance Formula
  - Slope
7. Polygons
  - Angle measures
  - Congruent Polygons
8. Triangles
  - Angles
  - Classification
  - Congruent Triangles
  - Special Segments
9. Quadrilaterals
  - Parallelograms
  - Rectangles
  - Rhombi
  - Squares
  - Trapezoids
10. Inequalities
  - Inverses and Contra positives
  - Indirect Proof
  - Triangle Inequalities
11. Similar Polygons

- Ratio and Proportion
- Similar Triangles
- 12. Right Triangles
  - Similarity
  - Pythagorean Theorem
  - Special Right Triangles
  - Trigonometry (Applications with Right Triangles)
  - Apply Trigonometry to General Triangles
- 13. Circles
  - Definitions
  - Arcs
  - Angles
  - Segments
- 14. Locus of Points
- 15. Area (Plane Figures)
  - Polygons
  - Circles
  - Similar Figures
  - Geometric Probability
- 16. Solids
  - Definitions
  - Surface Area
  - Volume
- 17. Transformations
  - Reflections
  - Translations
  - Rotations
  - Dilations

**Material Used:**

Text: Larson, Boswell, Stiff, Geometry: Applying, Reasoning, Measuring, McDougal Littell

New Jersey Department of Education Core Curriculum Standards for Mathematics.  
[www.state.nj.us/njded/cccs](http://www.state.nj.us/njded/cccs)