

Kendall Park Learning Center

Course Title: Honors 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.

Requirement:

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

Topics Covered:

1. Introducing the Fundamental Objects
 - Points, Lines, Planes
 - Postulates Regarding the Relationships Between Points, Lines, and Planes
 - Segments, Angles, Rays
 - Congruence of Segments/Angles
2. Logic
 - Simple and Compound Statements
 - Truth tables
 - Laws of inference
 - 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 in a Triangle and Their Properties
9. Quadrilaterals
 - Parallelograms
 - Rectangles
 - Rhombi
 - Squares
 - Trapezoids

- 10. Inequalities
 - Inverses and Contrapositives
 - 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: Geometry, Jurgensen, Brown, Jurgensen - Houghton Mifflin Company
Appropriate Enrichment Activities

New Jersey Department of Education Core Curriculum Standards for Mathematics.
www.state.nj.us/njded/cccs