

Course Code	1206300
Course Category	6-12
Subject Area	Mathematics
Course Type	Core
Course Title	Informal Geometry
Course Level	2
Course Length	Full Year
Credit Description	1
Abbreviated Title	Informal Geometry

RELATED BENCHMARKS (37) :

Scheme	Descriptor
LA.1112.1.6.1	The student will use new vocabulary that is introduced and taught directly;
LA.1112.1.6.2	The student will listen to, read, and discuss familiar and conceptually challenging text;
LA.1112.1.6.5	The student will relate new vocabulary to familiar words;
LA.910.1.6.1	The student will use new vocabulary that is introduced and taught directly;
LA.910.1.6.2	The student will listen to, read, and discuss familiar and conceptually challenging text;
LA.910.1.6.5	The student will relate new vocabulary to familiar words;
MA.912.D.6.2	Find the converse, inverse, and contrapositive of a statement
MA.912.G.1.1	Find the lengths and midpoints of line segments in two-dimensional coordinate systems.
MA.912.G.1.3	Identify and use the relationships between special pairs of angles formed by parallel lines and transversals.
MA.912.G.2.1	Identify and describe convex, concave, regular, and irregular polygons.
MA.912.G.2.2	Determine the measures of interior and exterior angles of polygons, justifying the method used.
MA.912.G.2.3	Use properties of congruent and similar polygons to solve mathematical or real-world problems.
MA.912.G.2.5	Explain the derivation and apply formulas for perimeter and area of polygons (triangles, quadrilaterals, pentagons, etc.).
MA.912.G.3.1	Describe, classify, and compare relationships among quadrilaterals including the square, rectangle, rhombus, parallelogram, trapezoid, and kite.
MA.912.G.3.2	Compare and contrast special quadrilaterals on the basis of their properties.
MA.912.G.4.1	Classify, construct, and describe triangles that are right, acute, obtuse, scalene, isosceles, equilateral, and equiangular.
MA.912.G.4.2	Define, identify, and construct altitudes, medians, angle bisectors, perpendicular bisectors, orthocenter, centroid, incenter, and circumcenter.
MA.912.G.4.3	Construct triangles congruent to given triangles.

- MA.912.G.4.4 Use properties of congruent and similar triangles to solve problems involving lengths and areas.
- MA.912.G.4.5 Apply theorems involving segments divided proportionally.
- MA.912.G.4.6 Prove that triangles are congruent or similar and use the concept of corresponding parts of congruent triangles.
- MA.912.G.4.7 Apply the inequality theorems: triangle inequality, inequality in one triangle, and the Hinge Theorem.
- MA.912.G.5.1 Prove and apply the Pythagorean Theorem and its converse.
- MA.912.G.5.3 Use special right triangles ($30^\circ - 60^\circ - 90^\circ$ and $45^\circ - 45^\circ - 90^\circ$) to solve problems.
- MA.912.G.5.4 Solve real-world problems involving right triangles.
- MA.912.G.6.2 Define and identify: circumference, radius, diameter, arc, arc length, chord, secant, tangent and concentric circles.
- MA.912.G.6.4 Determine and use measures of arcs and related angles (central, inscribed, and intersections of secants and tangents).
- MA.912.G.6.5 Solve real-world problems using measures of circumference, arc length, and areas of circles and sectors.
- MA.912.G.7.1 Describe and make regular, non-regular, and oblique polyhedra and sketch the net for a given polyhedron and vice versa.
- MA.912.G.7.2 Describe the relationships between the faces, edges, and vertices of polyhedra.
- MA.912.G.7.4 Identify chords, tangents, radii, and great circles of spheres
- MA.912.G.7.5 Explain and use formulas for lateral area, surface area, and volume of solids.
- MA.912.G.7.7 Determine how changes in dimensions affect the surface area and volume of common geometric solids.
- MA.912.G.8.1 Analyze the structure of Euclidean geometry as an axiomatic system. Distinguish between undefined terms, definitions, postulates and theorems.
- MA.912.G.8.2 Use a variety of problem-solving strategies, such as drawing a diagram, making a chart, guess-and-check, solving a simpler problem, writing an equation, and working backwards.
- MA.912.G.8.3 Determine whether a solution is reasonable in the context of the original situation.
- MA.912.G.8.4 Make conjectures with justifications about geometric ideas. Distinguish between information that supports a conjecture and the proof of a conjecture.