Moon Area School District Curriculum Map

Course: Accelerated Geometry
Grade Level: 8
Content Area: Mathematics
Frequency: Full-Year Course

Big Ideas

1. Essentials of geometry represent identifying points, lines, angles, and planes using congruence, midpoints, and the distance formula to represent the relationships.
2. Reasoning and proofs will be applied to algebraic and geometric properties of angles, segments, and diagrams.
3. The use of parallel and perpendicular lines to identify relationships of angles, graphs, and prove theorems.
4. Application of congruent triangle properties, postulates, and theorems.
5. Relationships within triangles using midsegments, bisectors, medians, altitudes, and perpendicular bisectors.
6. Similarity of polygons using proportions, postulates, and theorems.
7. Right triangles and trigonometric ratios using similarity to solve triangles.
8. Properties of quadrilaterals identify special quadrilateral representation.
9. Properties of circles can be used to describe relations among arcs, chords, tangents, and measures.

Essential Questions

10. What are the essential geometric concepts that apply to polygons?
11. How does the role of reasoning apply to conditional statements?
12. How do parallel and perpendicular lines relate to geometric concepts?
13. How are two triangles proven to be congruent to one another?
14. What relationships within triangles can be used in writing proofs?
15. How does proportionality apply to similar figures?
16. What are the unique applications of algebraic concepts apply to right triangles?
17. Describe the properties of special quadrilaterals and angle measures in polygons.
18. How are tangents, chords, and secants applied to circles in order to solve problems?

Primary Resource(s) & Technology:

Geometry by McDougal Littel@2007, IXL online software,
Microsoft Teams, Promethean Boards, Student Laptops/iPads

Big Ideas /EQs	Focus Standard(s)	Assessed Competencies (Key content and skills)	Timeline

1, 10	CC.2.3.HS.A.1 CC.2.3.HS.A.2 Eligible Content: G.1.2.1.2 G.1.3.1.1	Name and sketch geometric figures Use segment postulates to identify congruent segments Find lengths of segments in the coordinate plane Name and classify angles Use special angle relationships to find angle measures Classify polygons Find dimensions of polygons	August - September (4 Weeks)
2, 11	CC.2.3.HS.A.1 CC.2.3.HS.A.3 Eligible Content: G.1.3.2.1	Write definitions as conditional statements. Use postulates involving points, lines, and planes Use algebraic properties in logical arguments too Use properties of special pairs of angles Will write proofs using geometric theorems	September -October (4 Weeks)
3, 12	CC.2.3.HS.A.2 CC.2.3.HS.A.3 Eligible Content: G.1.3.2.1	Identify angle pairs formed by three intersecting lines. Use angles formed by parallel lines and transversals Use angle relationships to prove that lines are parallel Find and compare slopes of lines Find equations of lines Find the distance between a point and a line	October-November (4 Weeks)
4, 13	CC.2.3.HS.A.1 CC.2.3.HS.A.2 CC.2.3.HS.A.3 Eligible Content: G.1.2.1.1 G.1.3.1.1 G.1.3.2.1	Classify triangles and find measures of their angles. Identify congruent figures and classify corresponding parts Use the side lengths to prove triangles are congruent Use sides and angles to prove congruence Use two more methods to prove congruence of triangles. Use congruent triangles to prove corresponding parts congruent Use theorems about isosceles and equilateral triangles. Create an image congruent to a given triangle.	November - December (4 Weeks)
5, 14	CC.2.3.HS.A.3 CC.2.3.HS.A.5 Eligible Content: G.1.2.1.1 G.1.2.1.2 G.1.3.1.1 G.1.3.2.1	Use properties of midsegments and write coordinate proofs Use perpendicular bisectors to solve problems Use angle bisectors to find distance relationships Use medians and altitudes of triangles Find possible side lengths of a triangle Use inequalities to make comparisons in two triangles	January (4 Weeks)
6, 15	CC.2.3.HS.A.3 CC.2.3.HS.A.5 CC.2.3.HS.A.6	Solve problems by writing and solving proportions Use proportions to solve geometry problems Use proportions to identify similar polygons.	February March

	Eligible Content: G.1.2.1.1 G.1.3.1.1 G.1.3.1.2 G.1.3.2.1	Use proportions to identify similar polygons Use AA Similarity postulate. Use the SSS and SAS similarity Theorems. Use proportionality Theorems Use proportions with a triangle or parallel lines. Perform dilations.	(4 Weeks)
7, 16	CC.2.3.HS.A.3 CC.2.3.HS.A.6 CC.2.2.HS.C.9 Eligible Content: G.1.2.1.1 G.1.2.1.3 G.1.3.1.1 G.1.3.1.2 G.1.3.2.1	Find side lengths of different right triangles using the Pythagorean Theorem. Use the converse of the Pythagorean Theorem to determine whether a triangle is right. Use the relationships among the sides of special right triangles. . Use the trigonometric ratios to find indirect measurements for right triangles. Use trigonometry with acute and obtuse triangles	March-April (3 Weeks)
8, 17	CC.2.3.HS.A.2 CC.2.3.HS.A.3 Eligible Content: G.1.2.1.2 G.1.2.1.4	Find angle measures in polygons Find angle and side measures in parallelograms Use properties of rhombuses, rectangles, and squares Use properties of trapezoids and kites Identify special quadrilaterals	April (3 Weeks)
9, 18	CC.2.3HS.A.8 CC.2.3HS.A9 Eligible Content: G.1.1.1.1 G.1.1.1.2 G.1.1.1.3	Use properties of a tangent of a circle Use angle measures to find arc measures Use relationships of arc and chords in a circle Use inscribed angles of circles. Find the measures of angles inside or outside a circle Find segment lengths in circles Write equations of circles in a coordinate plane Write equations of circles in a coordinate plane	May (4 Weeks)