Unit Title	Key Concepts	Related Concepts	Global Context	Statement of Inquiry	Approaches to Learning	Objectives	Content - Summary of Unit
Unit 1: Geometric Structure	Systems	Patterns, Simplification	Globalization and Sustainability Strategy and infrastructure, Data-driven decision-making	Patterns and simplification improve the efficiency of systems, which improve infrastructure and data-driven decision-making.	Thinking	A: Knowing and understanding: i, ii, iii D: Applying mathematics in real-life contexts; i, ii, iii, iv, v	In this unit, scholars will explore what they know about geometry as they learn about fundamental properties of segment and angle measures that will be applied throughout the course. Scholars will also lay the foundation for deductive reasoning and writing proofs, skills that will be reinforced throughout the year, as well as future math courses. Scholars will focus on the properties of parallel lines and the angle relationships formed when parallel lines are cut by a transversal. Scholars will examine angle relationships can help prove whether or not lines are parallel, the relationships between parallel lines and triangle angles, and the relationships between the slopes of parallel and perpendicular lines. Scholars will also extend understanding on transformations, moving from the definition of rigid motion to the rigid transformations: reflections, translations, and rotations. The rest of the topic examines how transformations can be combined to create new images and complete proofs, such as the proof for demonstrating that a composition of two or more rigid motions is also a rigid motion.
Unit 2: Congruence & Theorems	Form	Change, System	Fairness and development: Human capability and development	Change and systems impact form improving human capability and development.	Research	B: Investigating Patterns: i, ii, iii D: Applying mathematics in real-life contexts; i, ii, iii, iv, v	In this unit, scholars will focus on congruence and transformations resulting in congruent figures. The lessons include the definitions of congruence and congruence transformations and provides examples to help scholars determine if figures are congruent. Explore various triangles and defines congruence theorems that prove triangles are congruent given congruent angles and sides of the triangles. Scholars will focus on quadrilaterals, examining properties of kites and trapezoids, and then the properties and conditions of parallelograms and special parallelograms.
Unit 3: Applications of Similarity & Trigonometry	Form	Quantity, Space	Fairness and Development: Fairness in games of chance, data-driven decisions	The use of form can influence space and quantity in structure through data driven decisions.	Communication	A: Knowing and understanding: i, ii, iii C: Communicating: i, ii, iii, iv, v	In this unit, scholars will focus on an examination of dilations and similarity transformations. These concepts are then applied to triangles; scholars examine the criteria for proving two triangles similar and analyze similarity in right triangles, including applications of the geometric mean. Scholars will explore applying properties of similar right triangles to understand the Pythagorean Theorem, relationships in special right triangles, and trigonometric ratios. Scholars then extend their understanding of trigonometric ratios to include the Law of Sines and Law of Cosines. Finally, scholars apply what they have learned to various contextual problems.
Unit 4: Application & Problem Solving	Logic	Representation, Simplification	Scientific and technical innovation : Models	Critical thinking involves representing and simplifying concepts to apply logic to create models.	Self-management	B: Investigating Patterns: i, ii, iii C: Communicating: i, ii, iii, iv, v	In this unit, scholars will examine several aspects of coordinate geometry. They begin by analyzing figures on the coordinate plane using slope, midpoint, and distance. Next, scholars examine coordinate proofs, using coordinate geometry to prove properties of figures. Finally, circles on the coordinate plane are considered. Scholars develop equations of circles and use them to solve problems.