SPS Geometry Scope and Sequence - Year at a Glance

Geometry Course Overview:
For the first several units, students practice generating conjectures and observations. This begins with work on compass and straightedge constructions. They gradually build up to formal proof, engaging in a cycle of conjecture, rough draft, peer feedback, and final draft narratives. To support their proof writing, students record definitions and theorems in a reference chart, which will be used and expanded throughout the course. Students build on their middle school study of transformations of figures. Students use transformation-based definitions of congruence and similarity, allowing them to rigorously prove the triangle congruence and similarity theorems. They apply these theorems to prove results about quadrilaterals, isosceles triangles, and other figures. Students extend their understanding of similarity when they study right triangle trigonometry, which in future courses will be expanded into a study of periodic functions. Next, students derive volume formulas and study the effect of dilation on both area and volume. They connect ideas from algebra and geometry through coordinate geometry, reviewing theorems and skills from prior units using the structure of the coordinate plane. They use transformations and the Pythagorean Theorem to build equations of circles, parabolas, parallel lines, and perpendicular lines from definitions, and they link transformations to the concept of functions. Students analyze relationships between segments and angles in circles and develop the concept of radian measure for angles, which will be built upon in subsequent courses. They close the year by extending what they learned about probability in grade 7 to consider probabilities of combined events, including identifying when events are independent. Within the classroom activities, students have opportunities to engage in aspects of mathematical modeling. Additionally, modeling prompts are provided for use throughout the course. Modeling prompts offer opportunities for students to engage in the full modeling cycle. These can be implemented in a variety of ways. Please see the course guide for a more detailed explanation of modeling prompts. Read more about how, when, and why to use the mathematical modeling prompts in the Curriculum Guide. <u>Notation</u> Within student-facing text, these materials use words rather than symbols to allow students to focus on content without needing to translate the meanings of symbols while reading. To increase exposure to different notation, images with given information marked using ticks or arrows include a caption with the symbolic notation (like $\overline{AB} \cong \overline{CD}$). Teachers are encouraged to use the symbolic notation when recording student responses, since that is an appropriate use of shorthand.

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	Unit of Study	Length of Unit	Time Frame
Semester 1	Unit 0: Community and Routines	5 days	Quarter 1
	Unit 1: Constructions and Rigid Transformation	22 days	Quarter 1
	Unit 2: Congruence	16 days	Quarter 1
	Unit 3: Similarity	15 days	Quarter 2
	Unit 4: Right Triangle Trigonometry	11 days	Quarter 2
		69 days in S1	
Semester 2	Unit 5: Solid Geometry	20 days	Quarter 3
	Unit 6: Coordinate Geometry	19 days	Quarter 3
	Unit 7: Circles	16 days	Quarter 4
	Unit 8: Conditional Probability	11 days	Quarter 4
		66 days in S2	
	Total days	**135 days**	

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	Unit 0	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8
	Community and Routines	Congruence and Rigid Transformations	Congruence	Similarity	Right Triangle Trigonometry	Solid Geometry	Coordinate Geometry	Circles	Conditional Probability
	5 days	21 days	16 days	15 days	11 days	20 days	19 days	16 days	11 days
Content Standards	Build community	N-Q.A.2	N-Q.A.3	N-Q.A.1	N-Q.A.2	N-Q.A.1	N-Q.A.1	A-SSE.A.1b	S-ID.B.5
		N-Q.A.3	G-CO.A.1	N-Q.A.3	N-Q.A.3	A-SSE.A.1a	A-SSE.A.1a	A-SSE.A.2	S-CP.A.1
	Establish classroom norms	G-CO.A.1	G-CO.A.5	A-CED.A.4	G-SRT.B.5	A-SSE.A.1b	A-SSE.B.3	G-CO.C.9	S-CP.A.2
		G-CO.A.2	G-CO.B.6	G-CO.C.10	G-SRT.C.6	A-CED.A.2	A-CED.A.2	G-CO.C.10	S-CP.A.3
		G-CO.A.3	G-CO.B.7	G-SRT.A.1a	G-SRT.C.7	F-IF.C.7b	A-CED.A.4	G-SRT.B.5	S-CP.A.4
	Practice math discourse	G-CO.A.4	G-CO.B.8	G-SRT.A.1b	G-SRT.C.8	G-SRT.C.8	A-REI.C.7	G-SRT.C.8	S-CP.B.5
		G-CO.A.5	G-CO.C.9	G-SRT.A.2	G-GMD.A.1	G-GMD.A.1	G-CO.A.1	G-C.A.2	S-CP.B.6
		G-CO.C.9	G-CO.C.10	G-SRT.A.3	G-MG.A.3	G-GMD.A.3	G-CO.A.2	G-C.A.3	S-CP.B.7
		G-CO.C.10	G-CO.C.11	G-SRT.B.4		G-GMD.B.4	G-CO.A.5	G-C.B.5	
		G-CO.D.12	G-MG.A.3	G-SRT.B.5		G-MG.A.1	G-CO.B	G-GMD.A.1	
		G-CO.D.13		G-C.A.1		G-MG.A.2	G-CO.C.10	G-MG.A.3	
		G-MG.A.3		G-MG.A.3		G-MG.A.3	G-SRT.B.5		
							G-C.A.2		
							G-GPE.A.1		
							G-GPE.A.2		
							G-GPE.B.4		
							G-GPE.B.5		
							G-GPE.B.6		
							G-GPE.B.7		

Major Standards | Supporting Standards | Additional Standards