03 Geometry Long Range Plans 2025-2026
Semester 1 (41 A–days, 41 B–days)

Day	Date	Learning Targets	Text	Standard	Assessments and Activities	Notes
Topic #1 - Foundations of Geometry (7+1 days)						
Higher Order Questions: •In what ways can congruence be useful? •How can relationships between angles be used to solve problems? •How can relationships between segments be used to solve problems?			**Vocabulary:** congruent, collinear points, coplanar points, line, segment, angle, ray, point, postulate, midpoint, perpendicular, bisect, angle bisector, perpendicular bisector, conditional statement, hypothesis, conclusion, vertical angles, linear pair, complementary, supplementary, right angle, acute angle, obtuse angle			**Theorems/Postulates:** •Segment Addition Postulate •Angle Addition Postulate •Vertical Angle Theorem •Linear Pair Theorem
LINK TO MILC ACTIVITIES FOR TOPIC #1						
1	**A:** 8/13 **B:** 8/14	•Demonstrate mastery of Algebra 1 skills			•Opening day activities •Course Pre-Test Review •Poof Book for Pre-requisite Skills	
2	**A:** 8/15 **B:** 8/18	•Identify basic geometric symbols •Correctly name geometric figures •Identify and describe collinear and coplanar points	1–1a	KY.HS.G.1	•Make A Poster Project •Naming Figures Task Cards	Include noncollinear and noncoplanar points
3	**A:** 8/19 **B:** 8/20	•Use the Segment and angle Addition Postulates to find measures	1–1b	KY.HS.G.1 KY.HS.G.6		
4	**A:** 8/21 **B:** 8/25	•Use the midpoint and distance formulas to solve problems	1–3	KY.HS.G.23	•**Lesson Quiz 1–1a**	Include angle bisector problems with this section (covered a little in 1–2 but you will need to supplement) and partitioning a segment
5	**A:** 8/26 **B:** 8/27	•Rewrite a statement in conditional form (identify hypothesis and conclusion) •Write the converse of a statement	1–5	KY.HS.G.6	•**Lesson Quiz 1–1b** •**Course Pre–Test** •**Desmos Activity**	
6	**A:** 8/28 **B:** 8/29	•Apply properties of vertical angles and linear pairs to find missing values •Solve problems involving complementary and supplementary angles	1–7	KY.HS.G.6	•**Lesson Quiz 1–3**	Include finding complements and supplements (book assumes students know this and does not cover it)
7	**A:** 9/2 **B:** 9/3	•*All Topic #1 Learning Targets*	ALL	ALL	•**Lesson Quiz 1–5** •Review day activities	
8	**A:** 9/4 **B:** 9/5	•*All Topic #1 Learning Targets*	ALL	ALL	•**Topic #1 Exam**	

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Topic #2 - Parallel and Perpendicular Lines (6 days)						
Higher Order Questions: •What relationships are formed when parallel lines are cut by a transversal? •How can I prove lines parallel? •How can I use slope to solve problems involving parallel and perpendicular lines?			**Vocabulary:** parallel, coplanar, transversal, corresponding angles, alternate exterior angles, alternate interior angles, same–side interior angles			**Theorems/Postulates:** •Same-Side Interior Angles Postulate •Alternate Interior Angles Theorem •Corresponding Angles Theorem •Alternate Exterior Angles Theorem •Parallel lines have equal slopes •Perpendicular lines have opposite reciprocal slopes (in other words, the product of slopes equals –1)
LINK TO MILC ACTIVITIES FOR TOPIC #2						
9	**A:** 9/8 **B:** 9/9	•Identify four pairs of angles formed by coplanar lines and a transversal •Solve problems involving the measures of special angle pairs formed by parallel lines	2-1	KY.HS.G.6 KY.HS.G.7	•**City Designer Activity** (count as a formative quiz grade) •Special Angle Pairs Foldable	Make sure to define parallel lines as "two coplanar lines that never intersect" (enVision doesn't define this and it is on our test)
10	**A:** 9/10 **B:** 9/11	•Prove that two lines are parallel	2-2	KY.HS.G.6 KY.HS.G.7 KY.HS.G.31	•Desmos Lesson Check •Desmos Lesson Check - 2-column Proofs	Given a diagram students will justify their reasoning as to whether or not the lines are parallel (refer to the questions on the unit review and exam as we are not writing proofs like the book does)
11	**A:** 9/12 **B:** 9/15	•Classify triangles by their sides and angles •Find missing angles in triangles using the Triangle Angle–Sum Theorem •Find missing angles in triangles using the Exterior Angle Theorem	2-3	KY.HS.G.6 KY.HS.G.7	•Triangle Sum Exploration	Supplement classifying triangles by sides and angles
12	**A:** 9/16 **B:** 9/17	•Find the slope between two points •Use slope to identify parallel and perpendicular lines in the coordinate plane •Write equations of parallel and perpendicular lines	2-4	KY.HS.G.1 KY.HS.G.22	•**Lesson Quiz 2–1**	Make sure to emphasize that opposite reciprocals multiply to = –1 (this is how envision identifies perpendicular slopes on the common assessment)
13	**A:** 9/18 **B:** 9/19	•*All Topic #2 Learning Targets*	ALL	ALL	•**Lesson Quiz 2–2** •Review day activities	**3 ACT Math Task: Parallel Paving Company**
14	**A:** 9/22 **B:** 9/23	•*All Topic #2 Learning Targets*	ALL	ALL	•**Topic #2 Exam**	

03 Geometry Long Range Plans 2025-2026
Semester 1 (41 A–days, 41 B–days)

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Topic #4/5 - Triangle Congruence & Relationships in Triangles (8 days)						
Higher Order Questions: •How can I use rigid motion to prove figures congruent? •How can I use properties of isosceles and equilateral triangles to solve for missing values? •How can I determine whether or not 3 side lengths can form a triangle? •How can I prove a line is a perpendicular bisector? •How can I prove a ray is an angle bisector?			**Vocabulary:** acute, obtuse, right, equiangular, equilateral, isosceles, scalene, congruence statement, legs of isosceles triangle, base angles, vertex angle, included angle, included side, non-included side, hypotenuse, legs of right triangle, median, altitude, perpendicular bisector, angle bisector			**Theorems/Postulates:** •Reflexive Property •Isosceles Triangle Theorem •Converse of Isosceles Triangle Theorem •Side–Side–Side (SSS) •Side–Angle–Side (SAS) •Angle–Side–Angle (ASA) •Angle–Angle–Side (AAS) •Corresponding Parts of Congruent Triangles are Congruent (CPCTC) •Hypotenuse–Leg Theorem (HL) •Perpendicular Bisector Theorem •Pythagorean Theorem
LINK TO MILC ACTIVITIES FOR TOPIC #4 and TOPIC #5						
15	**A:** 9/24 **B:** 9/25	•Write congruence statements identifying corresponding parts of congruent figures	4–1	KY.HS.G.6	•Congruence Statement Relay Race	**STEM Task: "Design a Bridge"** Include overlapping triangles (4–6)
16	**A:** 9/26 **B:** 10/7	•Use properties of isosceles triangles to find missing sides and angles •Use properties of equilateral triangles to find missing sides and angles	4–2	KY.HS.G.6	•**Lesson Quiz 2–3**	
17	**A:** 10/8 **B:** 10/9	•Use properties of isosceles triangles to find missing sides and angles •Use properties of equilateral triangles to find missing sides and angles	4–3 4–4	KY.HS.G.5 KY.HS.G.6	•**Lesson Quiz 4–1**	Include overlapping triangles (4–6) and write simple two column proofs
18	**A:** 10/10 **B:** 10/13	•Prove that two triangles are congruent (include HL) •Define, identify, and sketch a median and altitude of a triangle	4–5 5–3	KY.HS.G.5 KY.HS.G.6	•**Lesson Quiz 4–2**	No points of concurrency; just identify/sketch median and altitude
19	**A:** 10/14 **B:** 10/15	•Determine if three segments can form a triangle •Given the angles/sides of a triangle, order the sides/angles from shortest to longest	5–4	KY.HS.G.6	•**Lesson Quiz 4–3/4–4**	
20	**A:** 10/16 **B:** 10/17	•Use the Angle Bisector Theorem to find missing values in triangles •Use the Perpendicular Bisector Theorem to find missing values in triangles	5–1	KY.HS.G.6		Make sure to review the Pythagorean Theorem with Perpendicular Bisector problems
21	**A:** 10/20 **B:** 10/21	•*All Topic #4/5 Learning Targets*	ALL	ALL	•**Lesson Quiz 5–4** •Review activities	
22	**A:** 10/22 **B:** 10/23	•*All Topic #4/5 Learning Targets*	ALL	ALL	•**Topic #4/5 Exam** •A Whale of a Time Step #1	Graph the pre-image for the performance task for Topic #3 for homework tonight
23	**A:** 10/24 **B:** 10/27	***FLEX DAY FOR PSAT***				

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Semester 1 (41 A–days, 41 B–days)

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Topic #3 - Transformations (7 days)						
Higher Order Questions: •How can transformations be used to generate new, congruent figures? •How can I perform a reflection with/without the coordinate plane? •How can I perform a rotation with/without the coordinate plane? •How can I perform a translation? •How can I perform a dilation?			**Vocabulary:** preimage, image, reflection, rotation, translation, vector, component form, composition of transformations, glide reflection, dilation, scale factor, line of symmetry, rotational symmetry, point symmetry			**Theorems/Postulates:** •Reflection in x–axis •Reflection in y–axis •Reflection in y = x •Rotation 90° counterclockwise about origin •Rotation 270° counterclockwise about origin •Rotation 180° about origin •Translations (left/right/up/down) •Compositions of transformations (including glide reflection) •Dilations (enlarge/reduce)
LINK TO MILC ACTIVITIES FOR TOPIC #3						
24	**A:** 10/28 **B:** 10/29	•Identify the 3 basic rigid transformations •Perform reflections in the coordinate plane	3-1	KY.HS.G.2 KY.HS.G.4	•A Whale of a Time Step #2-3	**STEM Task: "Create an Animation"**

03 Geometry Long Range Plans 2025-2026
Semester 1 (41 A–days, 41 B–days)

Day	Date	Learning Targets	Text	Standard	Assessments and Activities	Notes
25	**A:** 10/30 **B:** 10/31	•Perform translations in the coordinate plane •Describe a translation using coordinate notation and component form of a vector	3-2	KY.HS.G.2 KY.HS.G.4	•**A Whale of a Time Step #4**	
26	**A:** 11/3 **B:** 11/4	•Perform rotations in the coordinate plane	3-3	KY.HS.G.2 KY.HS.G.4	•**A Whale of a Time Step #5**	Remember rotations are always counterclockwise
27	**A:** 11/5 **B:** 11/6	•Perform compositions of transformations including a glide reflection	3-4	KY.HS.G.2 KY.HS.G.4	•**A Whale of a Time Step #6**	Remember do the transformations in reverse order from the notation
28	**A:** 11/7 **B:** 11/10	•Sketch/identify lines of symmetry in a figure •Describe a rotation that will carry a figure onto itself •Dilate a figure in the coordinate plane	3-5 7-1*	KY.HS.G.2 KY.HS.G.4 KY.HS.G.9	•**A Whale of a Time Step #7-8**	*If pressed for time, 7-1 can be taught 2nd semester with Topic #7. Only do dilations from the origin.
29	**A:** 11/11 **B:** 11/12	•Describe the transformations that will carry a preimage onto an image	ALL	KY.HS.G.2 KY.HS.G.4	•FAL: Representing and Combining Transformations	
30	**A:** 11/13 **B:** 11/14	•*All Topic #3 Learning Targets*	ALL	ALL	•**Topic #3 Quiz**	Option: use whale as test grade, drop this day

Topic #11 - Extending to 3D (5 days)

Higher Order Questions:	Vocabulary:	Theorems/Postulates:
•How are three-dimensional figures and polygons related? •How can I use volume to model and solve real world problems? •How are the formulas for prism/cylinder and cone/pyramid alike? •How does the volume of a sphere related to the volumes of other solids?	cylinder, prism, pyramid, cone, sphere, hemisphere, area, volume, slant height, edge, vertex, side, altitude, cross section	•Euler's Formula •Volume of prism, cylinder, pyramid, cone, and sphere

LINK TO MILC ACTIVITIES FOR TOPIC #11

Day	Date	Learning Targets	Text	Standard	Assessments and Activities	Notes
31	**A:** 11/17 **B:** 11/18	•I can solve problems involving plane area	Supp			Include all basic shapes and area of a polygon using A=(1/2)aP
32	**A:** 11/19 **B:** 11/20	•I can use Euler's Formula to calculate the number of vertices, faces, and edges in a polygon •I can describe cross sections of polyhedrons •I can describe rotations of polygons about an axis	11-1	KY.HS.G.28	•Exploration: Euler's Formula	No Cavalieri's Principle (right solids only, no oblique)
33	**A:** 11/21 **B:** 11/24	•I can find the volume of prisms and cylinders	11-2	KY.HS.G.24 KY.HS.G.25 KY.HS.G.27 KY.HS.G.29		No surface area **3 ACT Math Task: "Box 'em Up"**
34	**A:** 11/25 **B:** 12/1	•I can find the volume of pyramids, cones, and spheres	11-3 11-4	KY.HS.G.24 KY.HS.G.25 KY.HS.G.27 KY.HS.G.29		No surface area **3 ACT Math Task: "Box 'em Up"**

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Semester 1 (41 A–days, 41 B–days)

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35	A:	12/2	•I can model 3D figures as prisms, cylinders, pyramids, cones, and spheres to solve problems	ALL	KY.HS.G.24 KY.HS.G.25 KY.HS.G.27 KY.HS.G.29	•**Topic #11 Performance Task** (use as a mini-test grade)	Students can work collaboratively in groups to find the volume of real-life items (coffee can, tissue box, tennis or beach ball, etc)
	B:	12/3					
Final Exam Review and Intro to Quadrilaterals							
36	A:	12/4	•I can use coordinate geometry to solve problems involving triangles and quadrilaterals	6-4 9-1	KY.HS.G.21		Use slope, distance, and/or midpoint formula to classify triangles, quadrilaterals, determine coordinates of a the endpoint of a median, etc. For example, "Prove that the quadrilateral is a rectangle by showing the diagonals are congruent" or "Prove that the quadrilateral is a parallelogram by showing its opposite sides are parallel."
	B:	12/5					
37	A:	12/8	***FLEXIBLE DAY*** ***ADDITIONAL ACTIVITIES: CONSTRUCTIONS (Patty Paper, Geometers' SketchPad, compass/straightedge)***				
	B:	12/9					
38	A:	12/10	***FLEXIBLE DAY*** ***ADDITIONAL ACTIVITIES: CONSTRUCTIONS (Patty Paper, Geometers' SketchPad, compass/straightedge)***				
	B:	12/11					
39	A:	12/12	***Final Exam Review***				
	B:	12/15					
40	A:	12/16	***Final Exams***				
	B:	12/17					
41	A:	12/18					
	B:	12/19					

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