

Louisiana Believes

Louisiana Guide to Implementing Eureka Math: Geometry

To assist teachers with the implementation of the Geometry Eureka Math curriculum, this document provides multiple layers of guidance regarding how Eureka Math lessons correlate with Louisiana Student Standards for Mathematics (LSSM). Eureka Math is a focused, coherent math curriculum which provides ample instructional guidance for teachers. This Louisiana Guide for Implementing Eureka Math goes a step further to point out places in which teachers may need to make strategic decisions considering student needs and time availability.

This guidance document is considered a “living” document as we believe that teachers and other educators will find ways to improve the document as they use it. Please send feedback to LouisianaStandards@la.gov so that we may use your input when updating this guide.

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Sample Year-Long Schedule for Math Instruction

Geometry

The following sample schedule integrates the Eureka curriculum, LEAP 360 Interim Assessments and flex days to allow teachers to move at a pace that best supports student learning. Flex days could be used for remediation, enrichment lessons, assessment, or other instructional activities. This sample should be used to guide instructional timing but should not dictate exactly what lesson a teacher should be on during a given day. The guidance has been broken into 9 weeks, as this is the calendar that most Louisiana schools systems follow.

- Coding: 1.1-A represents Module 1.Lesson 1-Topic A
- Lessons marked as “optional for remediation” in the [Louisiana Guide to Implementing Eureka](#), have been marked by *. Teachers should determine best use of these lessons based on their students.
- Lessons marked as “optional for enrichment” in the [Louisiana Guide to Implementing Eureka](#) have not been included in this calendar. Teachers may determine to use these during “flex” days.
- Even though only one day on this calendar has been marked for the LEAP Interim assessments, teachers may determine to split these over 2-3 days.

	Day 1	Day 2	Day 3	Day 4	Day 5
Week 1	FLEX	FLEX	LEAP 360 Diagnostic Assessment	FLEX	1.1-A
Week 2	1.2-A	1.3-A	1.4-A	FLEX	1.6-B*
Week 3	1.7-B*	1.8-B	1.9-B	1.10-B	1.11-B
Week 4	FLEX	1.12-C	1.13-C	1.14-C	1.15-C
Week 5	1.16-C	1.17-C	1.19-C	1.20-C	1.21-C
Week 6	FLEX	FLEX	1.22-D	1.23-D	1.24-D
Week 7	1.25-D	1.26-D	1.27-D	FLEX	1.28-E
Week 8	1.29-E	1.30-E	1.33-G*	1.34G*	FLEX
Week 9	LEAP 360 INTERIM 1	FLEX	FLEX	FLEX	FLEX
Week 10	2.1-A	2.2-A	2.3-A	2.4-A	2.5-A
Week 11	FLEX	2.6-B	2.7-B	2.8-B	2.9-B
Week 12	FLEX	2.12-C	2.13-C	2.14-C	2.15-C
Week 13	2.16-C	2.17-C	2.18-C	FLEX	FLEX
Week 14	FLEX	2.21-D	2.22-D	2.23-D	2.24-D

Week 15	FLEX	2.25-E	2.26-E	2.27-E	2.28-E
Week 16	2.29-E	FLEX	FLEX	FLEX	3.1-A
Week 17	3.2-A	3.3-A	3.4-A	FLEX	FLEX
Week 18	FLEX	FLEX	FLEX	FLEX	FLEX
Week 19	FLEX	FLEX	3.5-B	3.6-B	3.7-B
Week 20	3.8-B	3.10-B	3.11-B	3.12-B	LEAP 360 INTERIM 3
Week 21	FLEX	FLEX	FLEX	4.1-A	4.4-A
Week 22	4.5-B	4.6-B	4.7-B	4.8-B	FLEX
Week 23	FLEX	FLEX	4.9-C	4.10-C	4.11-C
Week 24	FLEX	4.12-D	4.13-D	FLEX	FLEX
Week 25	FLEX	LEAP 360 INTERIM 2	5.1-A	5.2-A	5.3-A
Week 26	5.4-A	5.5-A	5.6-A	FLEX	FLEX
Week 27	FLEX	FLEX	FLEX	FLEX	FLEX
Week 28	5.7-B	5.8-B	5.9-B	FLEX	FLEX
Week 29	FLEX	FLEX	FLEX	5.11-C	5.12-C
Week 30	5.13-C	5.14-C	5.15-C	5.16-C	FLEX
Week 31	FLEX	5.17-D	5.18-D	5.20-D	FLEX
Week 32	FLEX	FLEX	FLEX	FLEX	FLEX
Week 33	Reserved for state testing (dates will vary)				
Week 34					
Week 35					
Week 36					

Focus in the Standards

Not all content in a given grade/course is emphasized equally in the standards. Some clusters require greater emphasis than others based on the depth of the ideas, the time that they take to master, and/or their importance to future mathematics or the demands of college and career readiness. More time in these areas is also necessary for students to meet the Louisiana Standards for Mathematical Practice.

To say that some things have greater emphasis is not to say that anything in the standards can safely be neglected in instruction. Neglecting material will leave gaps in student skill and understanding and may leave students unprepared for the challenges of a later grade. Students should spend the large majority of their time on the major work of the grade (■). Supporting work (■) and, where appropriate, additional work (■) can engage students in the major work of the grade.

Overview of Lessons

Eureka Math modules are separated into topics (divided by black lines) and lessons. This section is devoted to helping teachers identify the standards on which each lesson is focused, whether on grade level or not. The grade level standards are color-coded to denote their focus. Again, this alignment does not explicitly align to the alignment guidance provided in Eureka Math. Furthermore, not every lesson is entirely focused on grade level standards, and, as such, many lessons can be used for either remediation or enrichment. In this section you will also find notes on specific lessons that can be used for differentiation, along with details/rationale for the recommended action. An asterisk is used to denote a standard that is not addressed in its entirety in that single lesson. The part(s) of the standard that are addressed are directly quoted from the LSSM standard and are shown in purple. A star (*) is used to denote a modeling standard.

Module 1: Congruence, Proof, and Constructions

Lesson	Course Level Content Standards	Standards from other Grades/Courses	Action	Notes/Rationale for Action
1.1-A	GM: G-CO.A.1*, GM: G-CO.D.12, GM: G-CO.D.13*		O	<ul style="list-style-type: none"> This Lesson includes knowing precise definitions of circle and line segment which will lead to mastery of GM: G-CO.A.1. This lesson focuses on constructing and equilateral triangle inscribed in a circle which will lead to mastery of GM: G-CO.A.13.

1.2-A	GM: G-CO.A.1*, GM: G-CO.D.12, GM: G-CO.D.13*		O	<ul style="list-style-type: none"> This Lesson includes knowing precise definitions of circle and line segment which will lead to mastery of GM: G-CO.A.1 This Lesson focuses on constructing an equilateral triangle and a regular hexagon inscribed in a circle which will lead to mastery of GM: G-CO.D.13.
1.3-A	GM: G-CO.A.1*, GM: G-CO.D.12		O	<ul style="list-style-type: none"> This Lesson includes knowing precise definitions of angle, circle, and line segment which will lead to mastery of GM: G-CO.A.1
1.4-A	GM: G-CO.A.1, GM: G-CO.D.12		O	
1.5-A	GM: G-CO.A.1, GM: G-CO.D.12		E	<ul style="list-style-type: none"> While this Lesson provides opportunities for students to continue practicing constructions, it focuses on points of concurrency, which, while not an explicit expectation of the standards for any grade/course, may prepare students to master GM: G-CO.C.10. the decision to use this Lesson should be made at the teacher level.
1.6-B		7.G.B.5	R	<ul style="list-style-type: none"> While this Lesson does not present new content, it does provide more formal definitions of previously defined terms, and students may benefit from the review of Grade 7 content. Additionally, there exists problems within the Lesson that require algebraic skills beyond that of Grade 7 standards. The decision to use this Lesson should be made at the teacher level.
1.7-B		7.G.B.5, 8.G.A.5	R	<ul style="list-style-type: none"> While this Lesson does not present new content, it does provide more formal definitions of previously defined terms, and students may benefit from the review of Grade 8 content. Additionally, the Lesson requires students to combine their algebraic skills with their understanding of Grade 8 concepts to solve missing angle problems. The decision to use this Lesson should be made at the teacher level.
1.8-B		7.G.B.5, 8.G.A.5	O	<ul style="list-style-type: none"> Similar to Lessons 6-7, this Lesson does not present new content; however, like Lessons 6-7, it provides opportunities for students to justify their reasoning which prepares them for writing proofs beginning in Lesson 9. While choosing to skip Lesson 6-7 may be acceptable with some groups of students, teaching Lesson 8 should prove advantageous long term for students as they pursue Mastery of GM: G-CO.C.9.
1.9-B	GM: G-CO.C.9		O	
1.10-B	GM: G-CO.C.9, GM: G-CO.D.12		O	

R = optional for remediation; E = optional for enrichment; O = on grade level

1.11-B	GM: G-CO.C.9, GM: G-CO.D.12		O	
1.12-C	GM: G-CO.A.2*, GM: G-CO.A.5*, GM: G-CO.C.9	7.G.B.5, 8.G.A.5	O	<ul style="list-style-type: none"> This Lesson includes describing transformations as functions that take points in the plane as inputs and give other points as outputs and comparing transformations that preserve distance and angle to those that do not which will lead to mastery of GM: G-CO.A.2. This Lesson includes specifying a sequence of transformations that will carry a given figure onto another which will lead to mastery of GM: G-CO.A.5
1.13-C	GM: G-CO.A.2, GM: G-CO.A.4, GM: G-CO.A.5, GM: G-CO.D.12		O	<ul style="list-style-type: none"> This Lesson includes developing definitions of rotations in the terms of angles, circles which will lead to mastery of GM: G-CO.A.4
1.14-C	GM: G-CO.A.2, GM: G-CO.A.4*, GM: G-CO.A.5, GM: G-CO.D.12		O	<ul style="list-style-type: none"> This Lesson includes developing definitions of reflections in terms of circles, perpendicular lines, and line segments which will lead to mastery of GM: G-CO.A.4.
1.15-C	GM: G-CO.A.2, GM: G-CO.A.3, GM: G-CO.D.12		O	<ul style="list-style-type: none"> This Lesson includes specifying a sequence of transformations that will carry a given figure onto another which will lead to mastery of GM: G-CO.A. 5.
1.16-C	GM: G-CO.A.2, GM: G-CO.A.4, GM: G-CO.A.5, GM: G-CO.D.12		O	<ul style="list-style-type: none"> This Lesson includes developing definitions of translations in terms of parallel lines, and line segments which will lead to mastery of GM: GCO.A.4.

1.17-C	GM: G-CO.A.2, GM: G-CO.A.4, GM: G-CO.A.5, GM: G-CO.D.12		O	
1.18-C	GM: G-CO.A.1*, GM: G-CO.A.2, GM: G-CO.B.6*, GM: G-CO.C.9, GM: G-CO.D.12		E	<ul style="list-style-type: none"> • This Lesson includes knowing precise definitions of parallel line which will lead to mastery of GM: GCO.A.1. • This Lesson includes using geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure which will lead to mastery of GM: G-CO.B.6. • While this Lesson includes having students perform various transformations, its focus is on establishing the parallel postulate, which is not an explicit expectation of the standards for any grade/ course. The decision to use this Lesson should be made at the teacher level.
1.19-C	GM: G-CO.A.2, GM: G-CO.A.5, GM: G-CO.B.6, GM: G-CO.B.7		O	
1.20-C	GM: G-CO.A.2, GM: G-CO.A.5, GM: G-CO.B.6, GM: G-CO.B.7		O	
1.21-C	GM: G-CO.A.2, GM: G-CO.A.5, GM: G-CO.B.6, GM: G-CO.B.7		O	
1.22-D	GM: G-CO.B.7, GM: G-CO.B.8		O	

1.23-D	GM: G-CO.C.10, GM: G-SRT.B.5*		O	<ul style="list-style-type: none"> This Lesson includes using congruence criteria for triangles to prove relationships in geometric figures which will lead to mastery of GM: G-SRT.B.5.
1.24-D	GM: G-CO.B.7, GM: G-CO.B.8, GM: G-SRT.B.5*		O	<ul style="list-style-type: none"> This Lesson includes using congruence criteria for triangles to prove relationships in geometric figures which will lead to mastery of GM: G-SRT.B.5.
1.25-D	GM: G-CO.B.7, GM: G-CO.B.8, GM: G-SRT.B.5*		O	<ul style="list-style-type: none"> This Lesson includes using congruence criteria for triangles to prove relationships in geometric figures which will lead to mastery of GM: G-SRT.B.5.
1.26-D	GM: G-SRT.B.5*		O	<ul style="list-style-type: none"> This Lesson includes using congruence criteria for triangles to prove relationships in geometric figures which will lead to mastery of GM: G-SRT.B.5.
1.27-D	GM: G-SRT.B.5*		O	<ul style="list-style-type: none"> This Lesson includes using congruence criteria for triangles to prove relationships in geometric figures which will lead to mastery of GM: G-SRT.B.5.
1.28-E	GM: G-CO.C.11		O	
1.29-E	GM: G-CO.C.9, GM: G-CO.C.10		O	
1.30-E	GM: G-CO.C.9, GM: G-CO.C.10		O	
1.31-F	GM: G-CO.D.12		E	
1.32-F	GM: G-CO.D.12, GM: G-CO.D.13		E	<ul style="list-style-type: none"> As noted by the authors, “Lessons 31 and 32 are lessons for classes that have been completely successful with all other material.” The decision to use these Lessons should be made at the teacher level.

1.33-G			R	<ul style="list-style-type: none"> As noted by the authors, “In Topic G, students review material covered throughout the module.” As such, these Lessons should be reserved for students who need a review, and the decision to use these Lessons should be made at the teacher level.
1.34-G			R	

Module 2: Similarity, Proof, and Trigonometry

Lesson	Course Level Content Standards	Standards from other Grades/Courses	Action	Notes/Rationale for Action
2.1-A	GM: G-CO.D.12, GM: G-SRT.A.1, GM: G-MG.A.3*		O	
2.2-A	GM: G-CO.A.2*, GM: G-CO.D.12, GM: G-SRT.A. 1, GM: G-MG.A.3*		O	<ul style="list-style-type: none"> This Lesson includes describing transformations as functions that take points in the plane as inputs and give other points as outputs which will lead to mastery of GM: G-CO.A.2
2.3-A	GM: G-CO.D.12, GM: G-SRT.A.1			<ul style="list-style-type: none"> While this Lesson may prove challenging for students, it serves as the basis for proving one of the theorems listed with GM: G-SRT.B.4 and, as such, should prove advantageous for students long term.
2.4-A	GM: G-SRT.A.1, GM: G-SRT.B.4, GM: G-SRT.B. 5*		O	<ul style="list-style-type: none"> This Lesson includes using similarity criteria for triangles to solve problems which will lead to mastery of GM: G-SRT.B.5.
2.5-A	GM: G-SRT.A.1, GM: G-SRT.B.4, GM: G-SRT.B. 5*		O	<ul style="list-style-type: none"> This Lesson includes using similarity criteria for triangles to solve problems which will lead to mastery of GM: G-SRT.B.5

2.6-B	GM: G-SRT.A.1		O	<ul style="list-style-type: none"> It should be noted that Exercise 4 assumes know the relationship between the slopes of perpendicular lines. Given the understanding is the explicit expectation of GM: G-GPE.B.5 which is not introduced until Module 4. It is safe to assume that majority, if not all, students will be able to produce the exemplar response provided in the Teacher’s Edition.
2.7-B	GM: G-SRT.A.1		O	
2.8-B	GM: G-SRT.A.1		O	
2.9-B	GM: G-SRT.A.1		O	
2.10-B			E	<ul style="list-style-type: none"> This Lesson allows students to use their understanding of and skills associated with dilations to divide a line segment into n equal pieces. While this may prove to be an enjoyable activity for students, it does not align to the explicit expectations of the GM standards. The decision to use this Lesson would be made at the teacher level
2.11-B	GM: G-SRT.A.1		E	<ul style="list-style-type: none"> While some students may enjoy and/or benefit from a deeper understanding of dilations, this Lesson goes beyond the explicit expectations of the GM: SRT standards, and, as such, the decision to include it should be made at the teacher level.
2.12-C	GM: G-CO.A.2, GM: G-CO.D.12, GM: G-SRT.A. 2*		O	<ul style="list-style-type: none"> This Lesson includes using the definition of similarity in terms of similarity transformations to decide if they are similar which will lead to mastery of GM: G-SRT.A.2.
2.13-C	GM: G-CO.D.12		O	<ul style="list-style-type: none"> This Lesson focuses on constructing similarity transformations, which is beyond the explicit expectation of the GM: G-SRT standards. The decision to use this Lesson should be made at the teacher level.
2.14-C	GM: G-SRT.A.2, GM: G-C.A.1		O	
2.15-C	GM: G-SRT.A.3, GM: G-SRT.B.5*		O	<ul style="list-style-type: none"> This Lesson includes using similarity criteria for triangles to solve problems which will lead to mastery of GM: G-SRT.B.5.

2.16-C	GM: G-SRT.B.5*		O	This Lesson focuses on using similarity criteria for triangles to solve problems which will lead to mastery of GM: G-SRT.B.5.
2.17-C	GM: G-SRT.B.4, GM: G-SRT.B.5*		O	This Lesson includes using similarity criteria for triangles to solve problems which will lead to mastery of GM: G-SRT.B.5.
2.18-C	GM: G-SRT.B.4, GM: G-SRT.B.5*		O	This Lesson includes using similarity criteria for triangles to solve problems and to prove relationships in geometric figures which will lead to mastery of GM: G-SRT.B.5.
2.19-C	GM: G-CO.C.9; GM: G-MG.A.1*		E	These Lessons focus on studying how ancient Greeks used geometry to solve real-world problems. While the Lessons and context may be interesting for some students, many will likely struggle to engage with and follow the Lessons. The decision to use these Lessons should be made at the teacher level.
2.20-C	GM: G-MG.A.1*		E	
2.21-D	GM: G-SRT.B.4, GM: G-SRT.B.5*		O	<ul style="list-style-type: none"> This Lesson focuses on using similarity criteria for triangles to solve problems which will lead to mastery of GM: G-SRT.B.5. It should be noted that the Opening Exercise assumes students remember the Pythagorean Theorem and understand its intended use. Some students may find it beneficial to have a quick review on the Pythagorean Theorem prior to engaging with this Lesson. It should also be noted that problem 5 on the Problem Set assumes students know how to simplify a radical and how to multiply radicals; however, there is no standard prior to Algebra II that expects that understanding/skill. Therefore, students should be allowed to leave their answer unsimplified. It should also be noted that problem 7 on the Problem Set requires the students to solve a quadratic equation. While students should have mastered this skill in Algebra I, most would probably find it beneficial to have an example problem in class that expects the same prior to completing the Problem Set independently.
2.22-D		A2: N-RN.A.2	O	<ul style="list-style-type: none"> These Lessons focus on performing arithmetic with expressions involving radicals. Since the LEAP 2025 assessment will not require students to simplify radicals nor perform arithmetic with expressions involving radicals, the decision to use these Lessons should be made at the teacher level.
2.23-D		A2: N-RN.A.2		
2.24-D	GM: G-SRT.B.4, GM: G-SRT.B.5*, GM: G-SRT.C.6*		O	<ul style="list-style-type: none"> This Lesson includes using similarity criteria for triangles to solve problems and to prove relationships in geometric figures which will lead to mastery of GM: G-SRT.B.5. This Lesson includes understanding that by similarity, side ratios in right triangles, including special right triangles (30-60-90 and 45-45-90), are properties of the angles in the triangle which will lead to mastery of GM: G-SRT.C.6.

2.25-E	GM: G-SRT.C.6*		O	<ul style="list-style-type: none"> This Lesson focuses on understanding that by similarity, side ratios in right triangles, including special right triangles (30-60-90 and 45-45- 90), are properties of the angles in the triangle which will lead to mastery of GM: G-SRT.C.6.
2.26-E	GM: G-SRT.C.6, GM: G-SRT.C.8**		O	<ul style="list-style-type: none"> This Lesson includes using trigonometric ratios to solve right triangles in applied problems which will lead to mastery of GM: G-SRT.C.8.
2.27-E	GM: G-SRT.C.7		O	
2.28-E	GM: G-SRT.C.7, GM: G-SRT.C.8**		O	<ul style="list-style-type: none"> This Lesson includes using trigonometric ratios to solve right triangles in applied problems which will lead to mastery of GM: G-SRT.C.8. It should be noted that there exists problems in both the Classwork and Exit Ticket portions of the Lesson that expect students to apply properties of right triangles to approximate values of non-right triangles. Since this is not an explicit expectation of the standards for any grade/course, the decision to include and/or modify such problems should be made at the teacher level.
2.29-E	GM: G-SRT.C.8**		O	<ul style="list-style-type: none"> This Lesson includes using trigonometric ratios to solve right triangles in applied problems which will lead to mastery of GM: G-SRT.C.8. It should be noted that the final portion of the Classwork and, subsequently, the first problem of the Exit Ticket push students to connect the tangent value to the slope of a line plotted on the coordinate plane. Since this is not an explicit expectation of the standards for any grade/course, the decision to include and/or modify such problems should be made at the teacher level.
2.30-F	GM: G-SRT.C.8*	A2: F-TF.C.8	E	<ul style="list-style-type: none"> While the problems in this Lesson do not reference trigonometric functions, the work of the Lesson mores aligns with the content of Algebra II than it does Geometry. As such, the decision to use this Lesson should be made at the teacher level.
2.31-F	GM: G-SRT.C.8*		E	<ul style="list-style-type: none"> These Lessons align to and focus on the content articulated in G-SRT.D.9-11, which, although part of the original set of Common Core State Standards for Mathematics (CCSSM), are not included in the LSSM for any grade/course. Therefore, the decision to use these Lessons should be made at the teacher level.
2.32-F	GM: G-SRT.C.8*		E	
2.33-F	GM: G-SRT.C.8*		E	
2.34-F	GM: G-SRT.C.8*		E	<ul style="list-style-type: none"> This Lesson focuses on solving missing single problems using a calculator to calculate inverse trig ratios, which is not an explicit expectation of the GM: G-SRT standards. As such, the decision to use this Lesson should be made at the teacher level.

Module 3: Extending to Three Dimensions

Lesson	Course Level Content Standards	Standards from other Grades/Courses	Action	Notes/Rationale for Action
3.1-A			O	<ul style="list-style-type: none"> While this Lesson does not align to the explicit expectations of the GM: G-GMD standards, it does serve as foundation for mastery of GM: G-GMD.A. 1 and should prove beneficial for students long term
3.2-A			O	<ul style="list-style-type: none"> This Lesson focuses on formalizing previously studied properties of area from Grades 3 - 5. The notation used throughout is beyond the explicit expectations of the GM standards. The decision to use this Lesson should be made at the teacher level.
3.3-A			O	<ul style="list-style-type: none"> While this Lesson does not align to the explicit expectations of the GM: G-GMD standards, it does serve as foundation for mastery of GM: G-GMD.A. 1 and should prove beneficial for students long term.
3.4-A	GM: G-GMD.A.1*		O	<ul style="list-style-type: none"> This Lesson focuses on giving an informal argument for the formulas for the circumference of a circle; area of a circle which will lead to mastery of GM: G-GMD.A.1.
3.5-B			O	<ul style="list-style-type: none"> While this Lesson does not align to the explicit expectations of the GM: G-GMD standards, it does serve as foundation for mastery of the GM: G-GMD standards and should prove beneficial for students long term.
3.6-B	GM: G-GMD.B.4		O	
3.7-B	GM: G-GMD.B.4		O	
3.8-B	GM: G-GMD.A.1*, GM: G-MG.A.2*		O	<ul style="list-style-type: none"> This Lesson includes giving an informal argument for the formula for the volume of a cylinder which will lead to mastery of GM: G-GMD.A.1
3.9-B			E	<ul style="list-style-type: none"> The Lesson focuses on scaling principals related to volume, which is not an explicit expectation of the standards for any grade or course. As such, the decision to use this Lesson should be made at the teacher level.

Lesson	Course Level Content Standards	Standards from other Grades/Courses	Action	Notes/Rationale for Action
3.10-B	GM: G-GMD.A.1*, GM: G-GMD.A.3**		O	<ul style="list-style-type: none"> This Lesson focuses on giving an informal argument for the formula for the volume of a cylinder which will lead to mastery of GM: GGMD.A.1. This Lesson includes using volume formulas for cylinders to solve problems which will lead to mastery of GM: G-GMD.A.1.
3.11-B	GM: G-GMD.A.1*, GM: G-GMD.A.3**, GM: MG.A.1, GM: G-MG.A.3*		O	<ul style="list-style-type: none"> This Lesson focuses on giving an informal argument for the formula for the volume of a cone which will lead to mastery of GM: G-GMD.A.1. This Lesson includes using volume formulas for pyramids and cones to solve problems which will lead to mastery of GM: G-GMD.A.1.
3.12-B	GM: G-GMD.A.3**, GM: G-MG.A.1*, GM: G-MG.A. 3*		O	<ul style="list-style-type: none"> This Lesson includes using volume formulas for spheres to solve problems which will lead to mastery of GM: G-GMD.A.1.
3.13-B	GM: G-GMD.B.4, GM: G-MG.A.1*, GM: G-MG.A.3*		E	<ul style="list-style-type: none"> While this Lesson includes ideas studied in previous Lessons, its focus is on understanding how 3D printers work. While some students may find this interesting, it is not aligned to the explicit expectations of the GM standards, and, as such, the decision to use this Lesson should be made at the teacher level.

Module 4: Connecting Algebra and Geometry through Coordinates

Lesson	Course Level Content Standards	Standards from other Grades/Courses	Action	Notes/Rationale for Action
4.1-A	GM: G-MG.A.1*, GM: G-MG.A.3*		O	
4.2-A	GM: G-MG.A.1*, GM: G-MG.A.3*	A1: A-REI.D.12	E	<ul style="list-style-type: none"> While these Lessons do not align to the explicit expectations of the GM: G-GPE standards, they do connect the learning of the Lesson back to the original exploratory challenge related to programming a robot vacuum. The programming a robot vacuum problem extends throughout the entire Module. If you plan to utilize the robot vacuum problem, then these Lessons should prove beneficial for students long term. In either case, the decision to use these Lessons should be made at the teacher level.
4.3-A	GM: G-MG.A.1*, GM: G-MG.A.3*		E	<ul style="list-style-type: none"> It should be noted that part b of the Opening Exercise uses the point-slope form of a line for the exemplar answers found in the Teacher Materials; however, the point-slope form of a line is not an explicit expectation of the standards for any grade/course. As such, most, if not all, students will not be familiar with the point-slope form of a line.
4.4-A	GM: G-MG.A.1*, GM: G-MG.A.3*	A1: A-REI.C.6, A1: A-REI.D.12	O	
4.5-B	GM: G-GPE.B.4, GM: G-GPE.B.5*		O	<ul style="list-style-type: none"> This Lesson focuses on proving the slope criteria for perpendicular lines and use them to solve geometric problems which will lead to mastery of GM: G-GMD.A.1.
4.6-B	GM: G-GPE.B.5*		O	<ul style="list-style-type: none"> This Lesson focuses on using them (the slope criteria for perpendicular lines) to solve geometric problems which will lead to mastery of GM: G-GMD.A.1.
4.7-B	GM: G-GPE.B.5*		O	<ul style="list-style-type: none"> This Lesson focuses on using them (the slope criteria for perpendicular lines) to solve geometric problems which will lead to mastery of GM: G-GMD.A.1. It should be noted that the Opening Exercise involves moving equations of lines from standard form to slope-intercept form. While students may not be familiar with standard form, they should be familiar with slope-intercept, and they have the skills (A1: A-CED.A.4) to rearrange the equations.
4.8-B	GM: G-GPE.B.4, GM: G-GPE.B.5		O	

Lesson	Course Level Content Standards	Standards from other Grades/Courses	Action	Notes/Rationale for Action
4.9-C	GM: G-GPE.B.7*		O	
4.10-C	GM: G-GPE.B.7*		O	
4.11-C	GM: G-GPE.B.7*	A1: A-REI.D.12	O	
4.12-D	GM: G-GPE.B.4, GM: G-GPE.B.6		O	
4.13-D	GM: G-GPE.B.4, GM: G-GPE.B.6		O	
4.14-D	GM: G-MG.A.1*, GM: G-MG.A.3*		E	<ul style="list-style-type: none"> A note from the author: This is an optional lesson intended to allow students to explore parametric equations and compare them with more familiar linear equations.
4.15-D	GM: G-GPE.B.4		E	<ul style="list-style-type: none"> This Lesson focuses on creating a formula for finding the shortest distance between a line and a point not on the line which is not an explicit expectation of the GM standards. As such, the decision to use this Lesson should be made at the teacher level.

Module 5: Circles with and Without Coordinates

Lesson	Course Level Content Standards	Standards from other Grades/Courses	Action	Notes/Rationale for Action
5.1-A	GM: G-CO.C.1*, GM: G-C.A.2, GM: G-C.A.3		O	<ul style="list-style-type: none"> This Lesson includes knowing precise definitions of circle which will lead to mastery of GM: G-CO.A.1.
5.2-A	GM: G-C.A.2		O	
5.3-A	GM: G-C.A.2, GM: G-C.A.3		O	
5.4-A	GM: G-C.A.2		O	
5.5-A	GM: G-C.A.2, GM: G-C.A.3		O	
5.6-A	GM: G-C.A.2, GM: G-C.A.3		O	
5.7-B	GM: G-C.A.1, GM: G-C.A.2		O	
5.8-B	GM: G-C.A.2		O	
5.9-B	GM: G-C.B.5		O	
5.10-B	GM: G-C.B, GM: G-MG.A.1*, GM: G-MG.A.3*		O	
5.11-C	GM: G-C.A.2		O	<ul style="list-style-type: none"> It should be noted that the Example from the Classwork portion of the Lesson and problem 6 from the Problem Set align to CCSSM G-C.A.4, which is not included in the LSSM. While problem 6 should be omitted altogether, the Lesson provides alternative approaches to the Example, which, in turn, make it more appropriate for students in LA. The decision on how best to modify this portion of the Lesson should be made at the teacher level.

R = optional for remediation; E = optional for enrichment; O = on grade level

Lesson	Course Level Content Standards	Standards from other Grades/Courses	Action	Notes/Rationale for Action
5.12-C	GM: G-C.A.2, GM: G-C.A.3		O	
5.13-C	GM: G-C.A.2, GM: G-C.A.3		O	
5.14-C	GM: G-C.A.2		O	
5.15-C	GM: G-C.A.2		O	
5.16-C	GM: G-SRT.B.5, GM: G-C.A.2		O	
5.17-D	GM: G-GPE.A.1*, GM: G-GPE.B.4		O	<ul style="list-style-type: none"> This Lesson focuses on deriving the equation of a circle of given center and radius using the Pythagorean Theorem which will lead to mastery of GM: G-GPE.A.1.
5.18-D	GM: G-GPE.A.1, GM: G-GPE.B.4	A1: A-SSE.B.3a, A1: A-SSE.B.3b	O	
5.19-D			E	<ul style="list-style-type: none"> This Lesson focuses on creating the equation for a tangent line which is not an explicit expectation of the GM standards. As such, the decision to use this Lesson should be made at the teacher level.
5.20-E	GM: G-C.A.3		O	
5.21-E			E	<ul style="list-style-type: none"> It should be noted that the content of this Lesson aligns to CCSSM G-SRT.D.9, which is not included in the LSSM. The decision to use this Lesson should be made at the teacher level.

Standards by Course

This section aims to further inform teachers on the alignment between Eureka Math and the LSSM. Standards, or parts thereof, highlighted in orange are addressed in Eureka Math but with limited exposure. It is recommended that teachers pay careful attention to these places to ensure students have mastered the standards, or parts thereof, using only Eureka Math. If not, teachers should supplement to ensure mastery for all students. Standards, or parts thereof, highlighted in red are not included in the Eureka Math curriculum thus necessitating the need to supplement to ensure mastery for all students.

Code	Standard
GM: G-CO.A.1	Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.
GM: G-CO.A.2	Represent transformations in the plane using, e.g., transparencies, tracing paper, or geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).
GM: G-CO.A.3	Given a rectangle, parallelogram, trapezoid, or regular polygons, describe the rotations and reflections that carry it onto itself.
GM: G-CO.A.4	Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.
GM: G-CO.A.5	Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.
GM: G-CO.B.6	Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.
GM: G-CO.B.7	Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.
GM: G-CO.B.8	Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.
GM: G-CO.C.9	Prove and apply theorems about lines and angles. Theorems include: <i>vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.</i>

Code	Standard
GM: G-CO.C.10	Prove and apply theorems about triangles. <i>Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.</i>
GM: G-CO.C.11	Prove and apply theorems about parallelograms. <i>Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.</i>
GM: G-CO.D.12	Make formal geometric constructions with a variety of tools and methods, e.g., compass and straightedge, string, reflective devices, paper folding, or dynamic geometric software. <i>Examples: copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.</i>
GM: G-CO.D.13	Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.
GM: G-SRT.A.1	Verify experimentally the properties of dilations given by a center and a scale factor: a. Dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor.
GM: G-SRT.A.2	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.
GM: G-SRT.A.3	Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.
GM: G-SRT.B.4	Prove and apply theorems about triangles. <i>Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity; SAS similarity criteria, SSS similarity criteria, AA similarity criteria.</i>
GM: G-SRT.B.5	Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.
GM: G-SRT.C.6	Understand that by similarity, side ratios in right triangles, including special right triangles (30-60-90 and 45-45-90) are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.
GM: G-SRT.C.7	Explain and use the relationship between the sine and cosine of complementary angles

Code	Standard
GM: G-SRT.C.8★	Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.
GM: G-C.A.1	Prove that all circles are similar.
GM: G-C.A.2	Identify and describe relationships among inscribed angles, radii, and chords, including the following: <i>the relationship that exists between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; and a radius of a circle is perpendicular to the tangent where the radius intersects the circle.</i>
GM: G-C.A.3	Construct the inscribed and circumscribed circles of a triangle and prove properties of angles for a quadrilateral inscribed in a circle.
GM: G-C.B.5	Use similarity to determine that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.
GM: G-GPE.A.1	Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.
GM: G-GPE.B.4	Use coordinates to prove simple geometric theorems algebraically. <i>For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point $(1, \sqrt{3})$ lies on the circle centered at the origin and containing the point $(0, 2)$</i>
GM: G-GPE.B.5	Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).
GM: G-GPE.B.6	Find the point on a directed line segment between two given points that partitions the segment in a given ratio.
GM: G-GPE.B.7★	Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula. ↔
GM: G-GMD.A.1	Give an informal argument, e.g., dissection arguments, Cavalieri's principle, or informal limit arguments, for the formulas for the circumference of a circle; area of a circle; volume of a cylinder, pyramid, and cone.
GM: G-GMD.A.3*	Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems. ↔
GM: G-GMD.B.4	Identify the shapes of two-dimensional cross sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.
GM: G-MG.A.1★	Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder). *

Code	Standard
GM: G-MG.A.2★	Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot). ↔
GM: G-MG.A.3★	Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios). ↔
GM: S-CP.A.1	Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (“or,” “and,” “not”). ↔
GM: S-CP.A.2	Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent. ↔
GM: S-CP.A.3	Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B. ↔
GM: S-CP.A.4	Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. <i>For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.</i> ↔
GM: S-CP.A.5	Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. <i>For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.</i> ↔
GM: S-CP.B.6	Find the conditional probability of A given B as the fraction of B’s outcomes that also belong to A, and interpret the answer in terms of the model.
GM: S-CP.B.7	Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model. ↔

Standards by Module

Using the alignment guidance provided in Eureka Math, each module is presented visually, outlining the topics and the standards taught within each topic. The standards are color-coded to denote their focus.

Module 1: Congruence, Proof, and Constructions						
Topic A	Topic B	Topic C	Topic D	Topic E	Topic F	Topic G
Basic Constructions	Unknown Angles	Transformations/ Rigid Motions	Congruence	Proving Properties of Geometric Figures	Advanced Constructions	Axiomatic Systems
GM: G-CO.A.1	GM: G-CO.C.9	GM: G-CO.A.2	GM: G.CO.B.7	GM: G-CO.D.13	GM: G-CO.D.13	GM: G-CO.A.1
GM: G-CO.D.12		GM: G-CO.A.3	GM: G-CO.B.8			GM: G-CO.A.2
GM: G-CO.D.13		GM: G-CO.A.4				GM: G.CO-A.3
		GM: G-CO.A.5				GM: G-CO-A.4
		GM: G-CO.B.6				GM: G-CO.A.5
		GM: G-CO.B.7				GM: G-CO.B.6
		GM: G-CO.D.12				GM: G-CO.B.7
						GM: G-CO.B.8
						GM: G-CO.C.9
						GM: G-CO.C.10
						GM: G-CO.C.11
						GM: G-CO.D.12
						GM: G-CO.D.13

Module 2: Similarity, Proof, and Trigonometry				
Topic A	Topic B	Topic C	Topic D	Topic E
Scale Drawings	Dilations	Similarity and Dilations	Applying Similarity to Right Triangles	Trigonometry
GM: G-SRT.A.1	GM: G-SRT.A.1	GM: G-SRT.A.2	GM: G-SRT.B.4	GM: G-SRT.C.6
GM: G-SRT.B.4	GM: G-SRT.B.4	GM: G-SRT.A.3		GM: G-SRT.C.7
GM: G-MG.A.3*		GM: G-SRT.B.5		GM: G-SRT.C.8*
		GM: G-MG.A.1*		

Module 3: Extending to Three Dimensions	
Topic A	Topic B
Area	Volume
GM: G-GMD.A.1	GM: G-GMD.A.1
	GM: G-GMD.A.3*
	GM: G-GMD.B.4
	GM: G.MG.A.1*
	GM: G.MG.A.2
	GM: G.MG.A.3

Module 4: Connecting Algebra and Geometry through Coordinates			
Topic A	Topic B	Topic C	Topic D
Rectangular and Triangular Regions Defined by Inequalities	Perpendicular and Parallel Lines in the Cartesian Plane	Perimeters and Areas of Polygonal Regions in the Cartesian Plane	Partitioning and Extending Segments and Parameterization of lines
GM: G-GPE.B.7*	GM: G-GPE.B.4	GM: G-GPE.B.7*	GM: G-GPE.B.4
	GM: G-GPE.B.5		GM: G-GPE.B.6

Module 5: Circles with and Without Coordinates				
Topic A	Topic B	Topic C	Topic D	Topic E
Central and Inscribed Angles	Arcs and Sector	Secants and Tangents	Equations for Circles and Their Tangents	Cyclic Quadrilaterals and Ptolemy's Theorem
GM: G-C.A.2	GM: G-C.A.1	GM: G-C.A.2	GM: G-GPE.A.1	GM: G-C.A.3
GM: G-C.A.3	GM: G-C.A.2	GM: G-C.A.3	GM: G-GPE.B.4	
	GM: G-C.B.5			

Standards by Lesson

Eureka Math does not provide a lesson-level alignment to the Louisiana Student Standards for Mathematics (LSSM). Although this work was influenced by the alignment guidance provided in Eureka Math, it does not always align perfectly with the alignment guidance provided in Eureka Math.

The numbers listed denote the Module and Lesson in which a particular standard is addressed. For example, Module 1, Lesson 18 (1.18) helps move students towards mastery of GM: G-CO.B.6.

Major Work	
GM: G-CO.B.6	1.18 (E), 1.19, 1.20, 1.21
GM: G-CO.B.7	1.19, 1.20, 1.21, 1.22, 1.24, 1.25
GM: G-CO.B.8	1.22, 1.24, 1.25
GM: G-CO.C.9	1.9, 1.10, 1.11, 1.12, 1.18 (E), 1.29, 1.30, 2.19 (E)
GM: G-CO.C.10	1.23, 1.29, 1.30
GM: G-CO.C.11	1.28
GM: G-SRT.A.1	2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.11 (E)
GM: G-SRT.A.1a	See alignment for GM: G-SRT.A.1.
GM: G-SRT.A.1b	See alignment for GM: G-SRT.A.1.
GM: G-SRT.A.2	2.12, 2.14
GM: G-SRT.A.3	2.15
GM: G-SRT.B.4	2.4, 2.5, 2.17, 2.18, 2.21, 2.24
GM: G-SRT.B.5	1.23, 1.24, 1.25, 1.26, 1.27, 2.4, 2.5, 2.15, 2.16, 2.17, 2.18, 2.21, 2.24, 5.16
GM: G-SRT.C.6	2.24, 2.25, 2.26
GM: G-SRT.C.7	2.27, 2.28

Major Work	
GM: G-SRT.C.8*	2.26, 2.28, 2.29, 2.30 (E), 2.31 (E), 2.32 (E), 2.33 (E), 2.34 (E)
GM: G-GPE.B.4	4.5, 4.8, 4.12, 4.13, 4.14 (E), 5.17, 5.18
GM: G-GPE.B.5	4.5, 4.6, 4.7, 4.8
GM: G-GPE.B.6	4.12, 4.13
GM: G-GPE.B.7*	4.9, 4.10, 4.11
GM: G-MG.A.1*	2.19 (E), 2.20, 3.11, 3.12, 3.13 (E), 4.1, 4.2 (E), 4.3 (E), 4.4, 4.14 (E), 5.10
GM: G-MG.A.2*	3.8
GM: G-MG.A.3*	2.1, 2.2, 3.11, 3.12, 3.13 (E), 4.1, 4.2 (E), 4.3 (E), 4.4, 4.14 (E), 5.10

Supporting Work	
GM: G-CO.A.1	1.1, 1.2, 1.3, 1.4, 1.5, 1.18 (E), 5.1
GM: G-CO.A.2	1.12, 1.13, 1.14, 1.15, 1.16, 1.17, 1.18 (E), 1.19, 1.20, 1.21, 2.2, 2.12
GM: G-CO.A.3	1.15
GM: G-CO.A.4	1.13, 1.14, 1.16, 1.17
GM: G-CO.A.5	1.12, 1.13, 1.14, 1.16, 1.17, 1.19, 1.20, 1.21
GM: G-CO.D.12	1.1, 1.2, 1.3, 1.4, 1.10, 1.11, 1.13, 1.14, 1.15, 1.16, 1.17, 1.18 (E), 1.31 (E), 1.32 (E), 2.1, 2.2, 2.3, 2.12, 2.13
GM: G-CO.D.13	1.1, 1.2, 1.5, 1.32 (E)

Additional Work	
GM: G-C.A.1	2.14, 5.7,
GM: G-C.A.2	5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16
GM: G-C.A.3	5.1, 5.3, 5.5, 5.6, 5.12, 5.13, 5.20
GM: G-C.B.5	5.9
GM: G.GPE.A.1	5.17, 5.18
GM: G-GMD.A.1	3.4, 3.8, 3.10, 3.11, 3.12
GM: G-MD.A.3*	3.10, 3.11
GM:G-GMD.B.4	3.6, 3.7, 3.13 (E)
GM: S-CP.A.1	For S-CP Standards, see EUREKA Crosswalks: https://www.louisianabelieves.com/docs/default-source/curricular-resources/eureka-math-geometry.pdf?sfvrsn=6
GM: S-CP.A.2	
GM: S-CP.A.3	
GM: S-CP.A.4	
GM: S-CP.A.5	
GM: S-CP.B.6	
GM: S-CP.B.7	