

Louisiana Believes

Louisiana Guide to Implementing Eureka Math: Grade 4

To assist teachers with the implementation of the 4th Grade 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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Focus in the Standards

Not all content in a given grade 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.

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, and the standard(s) that serve as the primary focus, for that topic, are bolded.

Module 1: Place Value, Rounding, and Algorithms for Addition and Subtraction					
Topic A	Topic B	Topic C	Topic D	Topic E	Topic F
Place Value of Multi-Digit Whole Numbers	Comparing Multi-Digit Whole Numbers	Rounding Multi-Digit Whole Numbers	Multi-Digit Whole Number Addition	Multi-Digit Whole Number Subtraction	Addition and Subtraction Word Problems
4.OA.A.1	4.NBT.A.2	4.NBT.A.3	4.OA.A.3	4.OA.A.3	4.OA.A.3
4.NBT.A.1			4.NBT.A.1	4.NBT.A.1	4.NBT.A.1
4.NBT.A.2			4.NBT.A.2	4.NBT.A.2	4.NBT.A.2
			4.NBT.B.4	4.NBT.B.4	4.NBT.A.4

Module 2: Unit Conversions and Problem Solving with Metric Measurement	
Topic A	Topic B
Metric Unit Conversions	Application of Metric Unit Conversions
4.MD.A.1	4.MD.A.1
4.MD.A.2	4.MD.A.2

Module 3: Multi-Digit Multiplication and Division							
Topic A	Topic B	Topic C	Topic D	Topic E	Topic F	Topic G	Topic H
Multiplicative Comparison Word Problems	Multiplication by 10, 100, and 1,000	Multiplication of up to Four Digits by Single-Digit Numbers	Multiplication Word Problems	Division of Tens and Ones with Successive Remainders	Reasoning with Divisibility	Division of Thousands, Hundreds, Tens, and Ones	Multiplication of Two-Digit by Two-Digit Numbers
4.OA.A.1	4.OA.A.1	4.OA.A.2	4.OA.A.1	4.OA.A.3	4.OA.B.4	4.OA.A.3	4.OA.A.3
4.OA.A.2	4.OA.A.2	4.NBT.A.1	4.OA.A.2	4.NBT.B.6		4.NBT.A.1	4.NBT.B.5
4.OA.A.3	4.NBT.A.1	4.NBT.B.5	4.OA.A.3			4.NBT.B.6	4.MD.A.3
4.MD.A.3	4.NBT.B.5		4.NBT.B.5				

Module 4: Angle Measure and Plane Figures			
Topic A	Topic B	Topic C	Topic D
Lines and Angles	Angle Measurement	Problem Solving with the Addition of Angle Measures	Two-Dimensional Figures and Symmetry
4.G.A.1	4.MD.C.5	4.MD.C.7	4.G.A.1
	4.MD.C.6		4.G.A.2
			4.G.A.3

Module 5: Fraction Equivalence, Ordering, and Operations							
Topic A	Topic B	Topic C	Topic D	Topic E	Topic F	Topic G	Topic H
Decomposition and Fraction Equivalence	Fraction Equivalence Using Multiplication and Division	Fraction Comparison	Fraction Addition and Subtraction	Extending Fraction Equivalence to Fractions Greater than 1	Addition and Subtraction of Fractions by Decomposition	Repeated Addition of Fractions as Multiplication	Explore a Fraction Pattern
4.NF.B.3a	4.NF.A.1	4.NF.A.2	4.NF.A.1	4.NF.A.1	4.NF.B.3c	4.OA.A2	4.OA.C.5
4.NF.B.3b	4.NF.B.3b		4.NF.B.3a	4.NF.A.2	4.MD.A.2	4.NF.B.4	
4.NF.B.4a			4.NF.B.3d	4.NF.B.3		4.MD.A.2	
			4.MD.A.2	4.NF.B.4a		4.MD.B.4	
				4.NBT.B.6			
				4.MD.B.4			

Module 6: Decimal Fractions				
Topic A	Topic B	Topic C	Topic D	Topic E
Exploration of Tenths	Tenths and Hundredths	Decimal Comparison	Addition with Tenths and Hundredths	Money Amounts as Decimal Numbers
4.NBT.A.1	4.NBT.A.1	4.NF.C.7	4.NF.B.3c	4.NF.C.5
4.NF.C.6	4.NF.A.1	4.MD.A.1	4.NF.C.5	4.NF.C.6
4.MD.A.1	4.NF.C.5	4.MD.A.2	4.NF.C.6	4.MD.A.2
	4.NF.C.6		4.MD.A.1	
	4.NF.C.7			
	4.MD.A.1			

Module 7: Exploring Measurement with Multiplication			
Topic A	Topic B	Topic C	Topic D
Measurement Conversion Tables	Problem Solving with Measurement	Investigation of Measurements Expressed as Mixed Numbers	Year in Review
4.OA.A.1	4.OA.A.2	4.OA.A.3	
4.OA.A.2	4.OA.A.3	4.NBT.B.5	
4.NBT.B.5	4.NBT.B.5	4.NBT.B.6	
4.MD.A.1	4.NBT.B.6	4.MD.A.1	
4.MD.A.2	4.MD.A.1	4.MD.A.2	
	4.MD.A.2		

Alternative Sequence

On page 3 of Module 4, the authors of the curriculum note, “The placement of Module 4 in A Story of Units was determined based on the New York State Education Department Pre-Post Math Standards document, which placed 4.NF.5–7 outside the testing window and 4.MD.5 inside the testing window.”

This is not in alignment with LDOE’s Content Emphases Clusters (<http://www.louisianabelieves.com/docs/default-source/year-long-planning/grade-4-math-focus-document.pdf?sfvrsn=4>), which reverses those priorities, labeling 4.NF.C as Major Work and 4.MD.C as an Additional Work. As a result, it is permissible to move Module 4 to after Module 6, changing the order of the modules to the following: Modules 1, 2, 3, 5, 6, 4, and 7.

Overview of the 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 focussed, 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. Any text in purple is a direct quote from the LSSM.

Module 1: Place Value, Rounding, and Algorithms for Addition and Subtraction

Lesson	Course Level Content Standards	Action	Notes/Rationale for Action
1.1	4.OA.A.1, 4.OA.A.2	O	
1.2	4.OA.A.2, 4.NBT.A.1	O	
1.3	4.NBT.A.1, 4.NBT.A.2*	O	<ul style="list-style-type: none"> This Lesson includes reading and writing multi-digit whole numbers using base-ten numerals and number names which will lead to mastery of 4.NBT.A.2.
1.4	4.NBT.A.2*	O	<ul style="list-style-type: none"> This Lesson includes reading and writing multi-digit whole numbers using base-ten numerals, number names, and expanded form which will lead to mastery of 4.NBT.A.2.
1.5	4.NBT.A.2	O	
1.6	4.NBT.A.2*, 4.NBT.B	O	<ul style="list-style-type: none"> This Lesson includes reading and writing multi-digit whole numbers using base-ten numerals, number names, and expanded form which will lead to mastery of 4.NBT.A.2.
1.7	4.NBT.A.3	O	
1.8	4.NBT.A.3	O	
1.9	4.NBT.A.3	O	<ul style="list-style-type: none"> It should be noted that these Lessons include application problems in their Problem Sets and Homeworks which extend beyond the explicit expectation of the target standard. The decision to include such problems should be made at the teacher level.
1.10	4.NBT.A.3	O	

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

Lesson	Course Level Content Standards	Action	Notes/Rationale for Action
1.11	4.NBT.B.4	O	<ul style="list-style-type: none"> It should be noted that this Lesson includes application problems in its Problem Set and Homework which extend beyond the explicit expectation of the target standard. The decision to include such problems should be made at the teacher level.
1.12	4.OA.A.3, 4.NBT.A.3, 4.NBT.B.4	O	
1.13	4.NBT.B.4	O	<ul style="list-style-type: none"> It should be noted that these Lessons include application problems in their Problem Sets and Homeworks which extend beyond the explicit expectation of the target standard. The decision to include such problems should be made at the teacher level.
1.14	4.NBT.B.4	O	
1.15	4.NBT.B.4	O	
1.16	4.OA.A.3, 4.NBT.A.3, 4.NBT.B.4	O	
1.17	4.OA.A.3*, 4.NBT.B.4	O	<ul style="list-style-type: none"> This Lesson includes solving multi-step word problems which will lead to mastery of 4.OA.A.3.
1.18	4.OA.A.3, 4.NBT.A.3, 4.NBT.B.4	O	
1.19	4.OA.A.3, 4.NBT.B.4	E	<ul style="list-style-type: none"> This Lesson focusses on creating word problems from given tape diagrams and number sentences which extends beyond the explicit expectation of 4.OA.A.3.

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Module 2: Unit Conversions and Problem Solving with Metric Measurement

Lesson	Course Level Content Standards	Action	Notes/Rationale for Action
2.1	4.NBT.B.4, 4.MD.A.1, 4.MD.A.2	O	
2.2	4.NBT.B.4, 4.MD.A.1, 4.MD.A.2	O	
2.3	4.NBT.B.4, 4.MD.A.1, 4.MD.A.2	O	
2.4	4.NBT.A.2, 4.MD.A.1	O	
2.5	4.OA.A.3, 4.NBT.B.4, 4.MD.A.2	O	

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Module 3: Multi-Digit Multiplication and Division

Lesson	Course Level Content Standards	Standards from other Grades	Action	Notes/Rationale for Action
3.1	4.MD.A.3*	3.MD.C.6, 3.MD.D.8*	O	<ul style="list-style-type: none"> This Lesson focusses on applying the area and perimeter formulas for rectangles in mathematical problems which will lead to mastery of 4.MD.A.3.
3.2	4.OA.A.2, 4.MD.A.3		O	
3.3	4.OA.A.2, 4.MD.A.3		O	
3.4	4.NBT.B.5		O	<ul style="list-style-type: none"> It should be noted that this Lesson includes problems that extend beyond the explicit limitation of 4.NBT.B.5 by expecting students to calculate products of two numbers with more than two digits. Although these problems could be considered beyond the work of 5th Grade, they should prove advantageous for students long term, and the decision to include/modify such problems should be made at the teacher level.
3.5	4.OA.A.2, 4.NBT.B.5*		O	<ul style="list-style-type: none"> This Lesson focusses on multiplying a whole number of up to four digits by a one-digit whole number using strategies based on place value and the properties of operations; illustrating and explaining the calculation by using equations, rectangular arrays, and/or area models which will lead to mastery of 4.NBT.B.5.
3.6	4.NBT.B.5*		O	<ul style="list-style-type: none"> This Lesson focusses on multiplying two two-digit numbers, using strategies based on place value and the properties of operations; illustrating and explaining the calculation by using equations, rectangular arrays, and/or area models which will lead to mastery of 4.NBT.B.5.
3.7	4.NBT.B.5*		O	<ul style="list-style-type: none"> These Lessons focus on multiplying a whole number of up to four digits by a one-digit whole number using strategies based on place value and the properties of operations; illustrating and explaining the calculation by using equations, rectangular arrays, and/or area models which will lead to mastery of 4.NBT.B.5.
3.8	4.NBT.B.5*		O	
3.9	4.OA.A.2, 4.NBT.B.5*	5.NBT.B.5	E	<ul style="list-style-type: none"> These Lessons focus on multiplying a whole number of up to four digits by a one-digit whole number using strategies based on place value and the properties of operations; illustrating and explaining the calculation by using equations, rectangular arrays, and/or area models which will lead to mastery of 4.NBT.B.5.
3.10	4.OA.A.2, 4.NBT.B.5*	5.NBT.B.5	E	
3.11	4.OA.A.2, 4.NBT.B.5*	5.NBT.B.5	E	
3.12	4.OA.A.2, 4.OA.A.3		O	

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Lesson	Course Level Content Standards	Standards from other Grades	Action	Notes/Rationale for Action
3.13	4.OA.A.2, 4.OA.A.3		O	
3.14	4.OA.A.3*, 4.NBT.B.6		O	<ul style="list-style-type: none"> This Lesson includes <i>solving problems in which remainders must be interpreted</i> which will lead to mastery of 4.OA.A.3.
3.15	4.NBT.B.6		O	
3.16	4.NBT.B.6	6.NS.B.2	O	<ul style="list-style-type: none"> It should be noted that this Lesson introduces students to the standard algorithm for long division which is not the explicit expectation until 6th Grade, 6.NS.B.2. Although the Lesson does a good connecting the algorithm to place value, students are not required to know the algorithm until Grade 6. Furthermore, the Problem Set, Exit Ticket, and Homework expect students to use the algorithm. The decision to include/modify such problems should be made at the teacher level.
3.17	4.NBT.B.6	6.NS.B.2	O	<ul style="list-style-type: none"> It should be noted that this Lesson expects students to use the standard algorithm for long division which is not the explicit expectation until 6th Grade, 6.NS.B.2. Furthermore, the Problem Set, Exit Ticket, and Homework expect students to use the algorithm. The decision to include/modify such problems should be made at the teacher level.
3.18	4.NBT.B.6	6.NS.B.2	E	<ul style="list-style-type: none"> This Lesson focusses on finding quotients using the standard algorithm which is not the explicit expectation until 6th Grade, 6.NS.B.2.
3.19	4.OA.A.3*, 4.NBT.B.6		O	<ul style="list-style-type: none"> This Lesson includes <i>solving problems in which remainders must be interpreted</i> which will lead to mastery of 4.OA.A.3.
3.20	4.NBT.B.6	6.NS.B.2	O	<ul style="list-style-type: none"> It should be noted that these Lessons expect students to use the standard algorithm for long division which is not the explicit expectation until 6th Grade, 6.NS.B.2. Furthermore, the Problem Sets, Exit Tickets, and Homeworks expect students to use the algorithm. The decision to include/modify such problems should be made at the teacher level.
3.21	4.NBT.B.6	6.NS.B.2	O	
3.22	4.OA.B.4a, 4.OA.B.4b, 4.OA.B.4d		O	
3.23	4.OA.B.4b, 4.OA.B.4d		O	
3.24	4.OA.B.4b, 4.OA.B.4c		O	

Lesson	Course Level Content Standards	Standards from other Grades	Action	Notes/Rationale for Action
3.25			E	<ul style="list-style-type: none"> This Lesson focusses on applying knowledge of 4.OA.B.4 to complete a task by crossing out multiples to find primes (called the sieve of Eratosthenes).
3.26	4.OA.A.2, 4.NBT.B.6		O	
3.27	4.NBT.B.6	6.NS.B.2	O	<ul style="list-style-type: none"> It should be noted that this Lesson expects students to use the standard algorithm for long division which is not the explicit expectation until 6th Grade, 6.NS.B.2. Furthermore, the Problem Set, Exit Ticket, and Homework expect students to use the algorithm. The decision to include/modify such problems should be made at the teacher level.
3.28	4.NBT.B.6	6.NS.B.2	O	<ul style="list-style-type: none"> It should be noted that, although the sample student work shows the standard algorithm as the primary method for finding quotients, the directions do not require the use of the standard algorithm. Furthermore, students should be encouraged to engage with the division using concrete strategies until understanding is fully developed.
3.29	4.NBT.B.6	6.NS.B.2	O	
3.30	4.NBT.B.6	6.NS.B.2	O	
3.31	4.OA.A.3, 4.NBT.B.6		O	
3.32	4.OA.A.3, 4.NBT.B.6		O	
3.33	4.NBT.B.6		O	<ul style="list-style-type: none"> It should be noted that this Lesson expects students to use the standard algorithm for long division which is not the explicit expectation until 6th Grade, 6.NS.B.2. Furthermore, the Problem Set, Exit Ticket, and Homework expect students to use the algorithm. The decision to include/modify such problems should be made at the teacher level.
3.34	4.NBT.B.5*		O	<ul style="list-style-type: none"> These Lessons focus on multiplying two two-digit numbers using strategies based on place value and the properties of operations; illustrating and explaining the calculation by using equations, rectangular arrays, and/or area models which will lead to mastery of 4.NBT.B.5.
3.35	4.NBT.B.5*		O	
3.36	4.NBT.B.5*		O	
3.37	4.NBT.B.5*	5.NBT.B.5	E	<ul style="list-style-type: none"> These Lessons focus on multiplying two two-digit numbers using strategies based on place value and the properties of operations; illustrating and explaining the calculation by using equations, rectangular arrays, and/or area models which will lead to mastery of 4.NBT.B.5. These Lessons focus on connecting area models and partial products to the standard algorithm for multiplication which is not the explicit expectation until Grade 5, 5.NBT.B.5.
3.38	4.NBT.B.5*	5.NBT.B.5	E	

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Module 4: Angle Measure and Plane Figures

Lesson	Course Level Content Standards	Standards from other Grades	Action	Notes/Rationale for Action
4.1	4.MD.C.5*, 4.G.A.1*		O	<ul style="list-style-type: none"> This Lesson includes recognizing angles as geometric shapes that are formed wherever two rays share a common endpoint which will lead to mastery of 4.MD.C.5. This Lesson focusses on drawing points, lines, line segments, rays, angles (right, acute, obtuse) and identifying them in two-dimensional figures which will lead to mastery of 4.G.A.1.
4.2	4.G.A.1*		O	<ul style="list-style-type: none"> This Lesson focusses on drawing angles (right, acute, obtuse) and identifying them in two-dimensional figures which will lead to mastery of 4.G.A.1.
4.3	4.G.A.1*		O	<ul style="list-style-type: none"> This Lesson focusses on drawing perpendicular lines and identifying them in two-dimensional figures which will lead to mastery of 4.G.A.1.
4.4	4.G.A.1*		O	<ul style="list-style-type: none"> This Lesson focusses on drawing parallel lines and identifying them in two-dimensional figures which will lead to mastery of 4.G.A.1.
4.5	4.MD.C.5a, 4.MD.C.5b, 4.MD.C.5c, 4.MD.C.6*		O	<ul style="list-style-type: none"> These Lessons include measuring angles in whole-number degrees using a protractor which will lead to mastery of 4.MD.C.6.
4.6	4.MD.C.5a, 4.MD.C.5b, 4.MD.C.5c, 4.MD.C.6*		O	
4.7	4.MD.C.5a, 4.MD.C.5b, 4.MD.C.5c, 4.MD.C.6		O	
4.8	4.MD.C.6		O	
4.9	4.MD.C.7*		O	<ul style="list-style-type: none"> This Lesson focusses on recognizing angle measure as additive which will lead to mastery of 4.MD.C.7.
4.10	4.MD.C.7		O	
4.11	4.MD.C.7		O	
4.12	4.G.A.3		O	

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Lesson	Course Level Content Standards	Standards from other Grades	Action	Notes/Rationale for Action
4.13	4.G.A.1*, 4.G.A.2*		O	<ul style="list-style-type: none"> This Lesson focusses on recognizing angle measure as additive which will lead to mastery of 4.MD.C.7.
4.14	4.G.A.1*, 4.G.A.2, 4.G.A.3	7.G.A.2	O	<ul style="list-style-type: none"> This Lesson focusses on recognizing angle measure as additive which will lead to mastery of 4.MD.C.7.
4.15	4.G.A.1*, 4.G.A.2*	7.G.A.2	O	<ul style="list-style-type: none"> This Lesson focusses on recognizing angle measure as additive which will lead to mastery of 4.MD.C.7.
4.16			E	<ul style="list-style-type: none"> This Lesson focusses on reasoning about attributes to construct quadrilaterals on square or triangular grid paper which is not an explicit expectation of the 4.G standards.

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Module 5: Fraction Equivalence, Ordering, and Operations

Lesson	Course Level Content Standards	Standards from other Grades	Action	Notes/Rationale for Action
5.1	4.NF.B.3b		O	
5.2	4.NF.B.3b		O	
5.3	4.NF.B.3b, 4.NF.B.4a		O	
5.4	4.NF.B.3b	3.NF.A.3a, 3.NF.A.3b*	O	
5.5	4.NF.B.3b, 4.NF.B.4a	3.NF.A.3a, 3.NF.A.3b*	O	
5.6	4.NF.B.3b, 4.NF.B.4a	3.NF.A.3a, 3.NF.A.3b*	O	
5.7	4.NF.A.1		O	
5.8	4.NF.A.1		O	
5.9	4.NF.A.1		O	
5.10	4.NF.A.1		O	
5.11	4.NF.A.1	3.NF.A.3a	O	
5.12	4.NF.A.2		O	
5.13	4.NF.A.2		O	
5.14	4.NF.A.1*, 4.NF.A.2	3.NF.A.3d	O	• These Lessons include generating equivalent fractions which will lead to mastery of 4.NF.A.1.
5.15	4.NF.A.1*, 4.NF.A.2		O	
5.16	4.NF.B.3a, 4.NF.B.3b	3.NF.A.3c*	O	
5.17	4.NF.B.3a, 4.NF.B.3b	3.NF.A.3c*	O	

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Lesson	Course Level Content Standards	Standards from other Grades	Action	Notes/Rationale for Action
5.18	4.NF.B.3a, 4.NF.B.3b	3.NF.A.3c*	O	
5.19	4.NF.B.3d		O	
5.20	4.NF.B.3a	3.NF.A.3b, 5.NF.A.1	E	<ul style="list-style-type: none"> This Lesson focusses on adding fractions with unlike denominators which is not the explicit expectation until 5th Grade, %.NF.A.1.
5.21	4.NF.A.1*, 4.NF.B.3a	3.NF.A.3b, 3.NF.A.3c*, 5.NF.A.1	E	<ul style="list-style-type: none"> This Lesson includes generating equivalent fractions which will lead to mastery of 4.NF.A.1. This Lesson focusses on adding fractions with unlike denominators which is not the explicit expectation until 5th Grade, %.NF.A.1.
5.22	4.NF.B.3a, 4.NF.B.3b	3.NF.A.3c*	O	
5.23	4.NF.B.3a, 4.NF.B.4a	3.NF.A.3c*	O	
5.24	4.NF.B.3b, 4.NF.B.4a, 4.NF.B.4b	3.NF.A.3c*	O	
5.25	4.NF.B.3b, 4.NF.B.4a, 4.NF.B.4b	3.NF.A.3c*	O	
5.26	4.NF.A.2		O	
5.27	4.NF.A.1*, 4.NF.A.2		O	<ul style="list-style-type: none"> This Lesson includes generating equivalent fractions which will lead to mastery of 4.NF.A.1.
5.28	4.MD.B.4		O	
5.29			O	<ul style="list-style-type: none"> This Lesson focusses on using estimation strategies including rounding to compute sums and differences of mixed numbers. It should be noted that, although this Lesson does not align to any of the explicit expectations of the 4.NF standards, it should lead to mastery of 4.NF.B.3a. The decision to use this Lesson should be made at the teacher level.
5.30	4.NF.B.3a, 4.NF.B.3b	3.NF.A.3c*	O	
5.31	4.NF.B.3c*		O	<ul style="list-style-type: none"> This Lesson focusses on adding mixed numbers with like denominators which will lead to mastery of 4.NF.B.3c.

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

Lesson	Course Level Content Standards	Standards from other Grades	Action	Notes/Rationale for Action
5.32	4.NF.B.3a, 4.NF.B.3b		O	
5.33	4.NF.B.3c*		O	<ul style="list-style-type: none"> This Lesson focusses on subtracting mixed numbers with like denominators which will lead to mastery of 4.NF.B.3c.
5.34	4.NF.B.3c*		O	<ul style="list-style-type: none"> This Lesson focusses on subtracting mixed numbers with like denominators which will lead to mastery of 4.NF.B.3c.
5.35	4.NF.B.4b		O	
5.36	4.NF.B.4b, 4.NF.B.4c		O	
5.37	4.NF.B.4b, 4.NF.B.4c		O	
5.38	4.NF.B.4b, 4.NF.B.4c		O	
5.39	4.OA.A.2, 4.NF.B.4c		O	
5.40	4.OA.A.2, 4.NF.B.4c, 4.MD.A.2*, 4.MD.B.4		O	<ul style="list-style-type: none"> This Lesson includes solving word problems involving distances, liquid volumes, masses of objects; representing measurement quantities using diagrams such as number line diagrams that feature a measurement scale which will lead to mastery of 4.MD.A.2.
5.41	4.OA.C.5		O	

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

Module 6: Decimal Fractions

Lesson	Course Level Content Standards	Standards from other Grades	Action	Notes/Rationale for Action
6.1	4.NF.C.6		O	
6.2	4.NF.C.6		O	
6.3	4.NF.C.6	5.NBT.A.3a	O	
6.4	4.NF.C.5, 4.NF.C.6, 4.MD.A.1		O	<ul style="list-style-type: none"> This Lesson includes knowing relative sizes of measurement units within one system of units which will lead to mastery of 4.MD.A.1.
6.5	4.NF.A.1, 4.NF.C.6		O	
6.6	4.NF.C.6		O	
6.7		5.NBT.A.3a	E	<ul style="list-style-type: none"> It should be noted that, if Module 4 is taught after Module 6, students will not be adequately prepared to engage with the Application Problem in this Lesson. This Lesson focusses on reading and writing decimals using base-ten numerals, number names, and expanded form which is the explicit expectation of 5.NBT.A.3a.
6.8		5.NBT.A.1*	E	<ul style="list-style-type: none"> This Lesson focusses on recognizing that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right which is the explicit expectation of 5.NBT.A.1.
6.9	4.NF.C.7		O	
6.10	4.NF.C.7		O	
6.11	4.NF.C.6, 4.NF.C.7*		O	<ul style="list-style-type: none"> This Lesson focusses on comparing two decimals to hundredths by reasoning about their size which will lead to mastery of 4.NF.C.7.
6.12	4.NF.A.1, 4.NF.C.5, 4.NF.C.6		O	
6.13	4.NF.C.5, 4.NF.C.6		O	

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

Lesson	Course Level Content Standards	Standards from other Grades	Action	Notes/Rationale for Action
6.14	4.NF.C.5, 4.NF.C.6, 4.MD.A.2*		O	<ul style="list-style-type: none"> This Lesson focusses on solving word problems involving distances, intervals of time, liquid volumes, masses of objects which will lead to mastery of 4.MD.A.2.
6.15	4.NF.C.6		O	
6.16	4.MD.A.2*		O	<ul style="list-style-type: none"> This Lesson focusses on using the four operations to solve word problems involving money and problems that require expressing measurements given in a larger unit in terms of a smaller unit which will lead to mastery of 4.MD.A.2.

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

Module 7: Exploring Measurement with Multiplication

Lesson	Course Level Content Standards	Standards from other Grades	Action	Notes/Rationale for Action
7.1	4.MD.A.1, 4.MD.A.2*		O	<ul style="list-style-type: none"> These Lessons include solving word problems involving distances, liquid volumes, masses of objects and problems that require expressing measurements given in a larger unit in terms of a smaller unit which will lead to mastery of 4.MD.A.2.
7.2	4.MD.A.1, 4.MD.A.2*		O	
7.3	4.MD.A.1, 4.MD.A.2*		O	
7.4	4.OA.A.2, 4.MD.A.2*		O	<ul style="list-style-type: none"> This Lesson includes solving word problems involving distances, intervals of time, liquid volumes, masses of objects and problems that require expressing measurements given in a larger unit in terms of a smaller unit which will lead to mastery of 4.MD.A.2.
7.5			E	<ul style="list-style-type: none"> This Lesson focusses on creating word problems from given tape diagrams which extends beyond the explicit expectation of 4.MD.A.2.
7.6	4.MD.A.1*, 4.MD.A.2*		O	<ul style="list-style-type: none"> These Lessons include knowing relative sizes of measurement units within one system of units; within a single system of measurement, expressing measurements in a larger unit in terms of a smaller unit which will lead to mastery of 4.MD.A.1.
7.7	4.MD.A.1*, 4.MD.A.2*		O	
7.8	4.MD.A.1*, 4.MD.A.2*		O	<ul style="list-style-type: none"> These Lessons include solving word problems involving distances, intervals of time, liquid volumes, masses of objects and problems that require expressing measurements given in a larger unit in terms of a smaller unit which will lead to mastery of 4.MD.A.2.
7.9	4.MD.A.1*, 4.MD.A.2*		O	
7.10	4.MD.A.2*		O	<ul style="list-style-type: none"> These Lessons focus on using the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects and problems that require expressing measurements given in a larger unit in terms of a smaller unit which will lead to mastery of 4.MD.A.2.
7.11	4.MD.A.2*		O	
7.12	4.MD.A.1*		O	<ul style="list-style-type: none"> These Lessons include knowing relative sizes of measurement units within one system of units; within a single system of measurement, expressing measurements in a larger unit in terms of a smaller unit which will lead to mastery of 4.MD.A.1.
7.13	4.MD.A.1*		O	

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

Lesson	Course Level Content Standards	Standards from other Grades	Action	Notes/Rationale for Action
7.14	4.OA.A.2, 4.MD.A.2*		O	<ul style="list-style-type: none"> This Lesson focusses on using the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects and problems that require expressing measurements given in a larger unit in terms of a smaller unit which will lead to mastery of 4.MD.A.2.
7.15	4.MD.A.3, 4.MD.D.8		O	
7.16	4.MD.A.3, 4.MD.D.8	7.G.A.2	O	<ul style="list-style-type: none"> It should be noted that this Lesson has a large emphasis on creating composite figures which is beyond the explicit expectations of the 5.MD and 5.G standards. The decision to include/modify this Lesson should be made at the teacher level.
7.17			R	<ul style="list-style-type: none"> Reserve this Lesson to be used with students who need more practice solidifying Grade 4 fluencies.
7.18			R	<ul style="list-style-type: none"> Reserve this Lesson to be used with students who need more practice solidifying Grade 4 vocabulary.

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

Additional Notes on Eureka-Specific Strategies/Representations

In Module 3 students are introduced to and expected to use the standard algorithm for long division, which is not the explicit expectation of the standards until Grade 6, 6.NS.B.2. The expectation of calculating quotients using the standard algorithm continues through the remainder of the curriculum. The decision to introduce the standard algorithm for long division should be made at the teacher level and only after students have demonstrated understanding of the explicit expectations of 4.NBT.B.6.

In Module 5 there exists problems throughout the entirety of the Module that extend beyond the explicit denominator limitations for the 4.NF standards. The decision to include/modify such problems should be made at the teacher level.

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 1 (1.1) helps move students towards mastery of 4.OA.A.1.

Major Work	
4.OA.A.1	1.1
4.OA.A.2	1.1, 1.2 3.2, 3.3, 3.5, 3.9, 3.10, 3.11, 3.12, 3.13, 3.26 5.39, 5.40 7.4, 7.14
4.OA.A.3	1.12, 1.16, 1.17, 1.18, 1.19 2.5 3.12, 3.13, 3.14, 3.19, 3.31, 3.32
4.NBT.A.1	1.2, 1.3

Major Work	
4.NBT.A.2	1.3, 1.4, 1.5, 1.6 2.4
4.NBT.A.3	1.7, 1.8, 1.9, 1.10, 1.12, 1.16, 1.18
4.NBT.B.4	1.11, 1.12, 1.13, 1.14, 1.15, 1.16, 1.17, 1.18, 1.19 2.1, 2.2, 2.3, 2.5
4.NBT.B.5	3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.34, 3.35, 3.36, 3.37, 3.38
4.NBT.B.6	3.14, 3.15, 3.16, 3.17, 3.18, 3.19, 3.20, 3.21, 3.26, 3.27, 3.28, 3.29, 3.30, 3.31, 3.32, 3.33
4.NF.A.1	5.7, 5.8, 5.9, 5.10, 5.11, 5.14, 5.15, 5.21, 5.27 6.5, 6.12
4.NF.A.2	5.12, 5.13, 5.14, 5.15, 5.26, 5.27
4.NF.B.3	See alignment for 4.NF.B.3a, 4.NF.B.3b, 4.NF.B.3c, and 4.NF.B.3d
4.NF.B.3a	5.16, 5.17, 5.18, 5.20, 5.21, 5.22, 5.23, 5.30, 5.32
4.NF.B.3b	5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.16, 5.17, 5.18, 5.22, 5.24, 5.25, 5.30, 5.32
4.NF.B.3c	5.31, 5.33, 5.34
4.NF.B.3d	5.19
4.NF.B.4	See alignment for 4.NF.B.4a, 4.NF.B.4b, and 4.NF.B.4c
4.NF.B.4a	5.3, 5.5, 5.6, 5.23, 5.24, 5.25
4.NF.B.4b	5.24, 5.25, 5.35, 5.36, 5.37, 5.38
4.NF.B.4c	5.36, 5.37, 5.38, 5.39, 5.40
4.NF.C.5	6.4, 6.12, 6.13, 6.14
4.NF.C.6	6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.11, 6.12, 6.13, 6.14, 6.15
4.NF.C.7	6.9, 6.10, 6.11

Supporting Work	
4.OA.B.4	See alignment for 4.OA.B.4a, 4.OA.B.4b, 4.OA.B.4c, and 4.OA.B.4d
4.OA.B.4a	3.22
4.OA.B.4b	3.22, 3.23, 3.24
4.OA.B.4c	3.24
4.OA.B.4d	3.22, 3.23
4.MD.A.1	2.1, 2.2, 2.3, 2.4 6.4 7.1, 7.2, 7.3, 7.6, 7.7, 7.8, 7.9, 7.12, 7.13
4.MD.A.2	2.1, 2.2, 2.3, 2.5 5.40 6.14, 6.16 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 7.8, 7.9, 7.10, 7.11, 7.14
4.MD.A.3	3.1, 3.2, 3.3 7.15, 7.16
4.MD.B.4	5.28, 5.40
4.MD.D.8	7.15, 7.16

Additional Work	
4.OA.C.5	5.41
4.MD.C.5	4.1
4.MD.C.5a	4.5, 4.6, 4.7
4.MD.C.5b	4.5, 4.6, 4.7

Additional Work	
4.MD.C.5c	4.5, 4.6, 4.7
4.MD.C.6	4.5, 4.6, 4.7, 4.8
4.MD.C.7	4.9, 4.10, 4.11
4.G.A.1	4.1, 4.2, 4.3, 4.4, 4.13, 4.14, 4.15
4.G.A.2	4.13, 4.14, 4.15
4.G.A.3	4.12, 4.14

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
4.OA.A.1	Interpret a multiplication equation as a comparison and represent verbal statements of multiplicative comparisons as multiplication equations, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7, and 7 times as many as 5.
4.OA.A.2	Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison (Example: 6 times as many vs. 6 more than).
4.OA.A.3	Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. <i>Example: Twenty-five people are going to the movies. Four people fit in each car. How many cars are needed to get all 25 people to the theater at the same time?</i>
4.OA.B.4	Using whole numbers in the range 1–100,
4.OA.B.4a	Find all factor pairs for a given whole number.
4.OA.B.4b	Recognize that a given whole number is a multiple of each of its factors.
4.OA.B.4c	Determine whether a given whole number is a multiple of a given one-digit number.
4.OA.B.4d	Determine whether a given whole number is prime or composite.
4.OA.C.5	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. <i>For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</i>

Code	Standard
4.NBT.A.1	Recognize that in a multi-digit whole number less than or equal to 1,000,000, a digit in one place represents ten times what it represents in the place to its right. <i>For example, (1) recognize that $700 \div 70 = 10$; (2) in the number 7,246, the 2 represents 200, but in the number 7,426 the 2 represents 20, recognizing that 200 is ten times as large as 20, by applying concepts of place value and division.</i>
4.NBT.A.2	Read and write multi-digit whole numbers less than or equal to 1,000,000 using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.
4.NBT.A.3	Use place value understanding to round multi-digit whole numbers, less than or equal to 1,000,000, to any place.
4.NBT.B.4	Fluently add and subtract multi-digit whole numbers, with sums less than or equal to 1,000,000, using the standard algorithm.
4.NBT.B.5	Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
4.NBT.B.6	Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
4.NF.A.1	Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. (Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.)
4.NF.A.2	Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model. (Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.)
4.NF.B.3	Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$. (Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.)
4.NF.B.3a	Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. Example: $3/4 = 1/4 + 1/4 + 1/4$.
4.NF.B.3b	Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. <i>Examples: $3/8 = 1/8 + 1/8 + 1/8$; $3/8 = 1/8 + 2/8$; $2 \frac{1}{8} = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8$.</i>

Code	Standard
4.NF.B.3c	Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
4.NF.B.3d	Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.
4.NF.B.4	Multiply a fraction by a whole number. (Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.)
4.NF.B.4a	Understand a fraction a/b as a multiple of $1/b$. <i>For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.</i>
4.NF.B.4b	Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. <i>For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$.)</i>
4.NF.B.4c	Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. <i>For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?</i>
4.NF.C.5	Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. <i>For example, express $3/10$ as $30/100$, and add $3/10 + 4/100 = 34/100$.</i>
4.NF.C.6	Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 0.62 as $62/100$; describe a length as 0.62 meters; locate 0.62 on a number line diagram; represent $62/100$ of a dollar as $\\$0.62$.</i>
4.NF.C.7	Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.
4.MD.A.1	Know relative sizes of measurement units within one system of units including: ft, in; km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. (Conversions are limited to one-step conversions.) Record measurement equivalents in a two-column table. <i>For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...</i>
4.MD.A.2	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving whole numbers and/or simple fractions (addition and subtraction of fractions with like denominators and multiplying a fraction times a fraction or a whole number), and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

Code	Standard
4.MD.A.3	Apply the area and perimeter formulas for rectangles in real-world and mathematical problems. <i>For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.</i>
4.MD.B.4	Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. <i>For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.</i>
4.MD.C.5	Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.
4.MD.C.5a	An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle
4.MD.C.5b	An angle that turns through $\frac{1}{360}$ of a circle is called a "one-degree angle," and can be used to measure angles.
4.MD.C.5c	An angle that turns through n one-degree angles is said to have an angle measure of n degrees.
4.MD.C.6	Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
4.MD.C.7	Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems, e.g., by using an equation with a letter for the unknown angle measure.
4.MD.D.8	Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real-world problems.
4.G.A.1	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
4.G.A.2	Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
4.G.A.3	Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.