Grade 2 Math Curriculum Guide

In Grade 2, instructional time should focus on four critical areas:

- Extending understanding of base-ten notation
- Building fluency with addition and subtraction
- Using standard units of measurement
- Describing and analyzing shapes

Eugene School District 4J Elementary math curriculum is comprised of LearnZillion with Number Talks and selected math games integrated. The following document contains pacing and usage guidance for these three components.

Overall pacing guidance is given by month to ensure teachers have flexibility to use the information about the major ( ), supporting ( )and additional ( ) work for your grade-level and professional judgment when meeting the needs of students. It is most important to ensure students have opportunities to master grade-level content standards rather than teaching each lesson. Student unit workbooks are color coded to convey the primary domain of their learning.

Instructional Days	172.5	Lessons Available	166
Term 1	88	Units 0-7	83*
Term 2	84.5	Units 8-14	83

* include Unit 0 available lessons

Color Key by Domain	NF	OA	CC	GEO	NBT	MD

Unit-at-a-Glance pages are available for each unit at Eugene4J.LearnZillion.com. These pages detail prior knowledge, common misconceptions, differentiation/game resources, Number Talk recommendations, and more. Unit Planners indicate important vocabulary, materials to prep/gather, possible formative checkpoints, and expected representations/strategies.

Key Concepts for each unit can provide instructional guidance around the main focus for student learning and the depth of exploration and mastery toward a standard. Key Concepts are taught through a sets of lessons based on the 3 aspects of rigor: Conceptual, Fluency/Procedure, and Application. The final focused opportunity for each standard is noted with black outline. A standard that is isolated to a single unit is indicated with +.

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Standards for Math Practice (MP#) have been listed for each unit. While the curriculum highlights opportunities to elevate these in learning, it is essential that these standards be embedded into student learning when they occur regardless of the few called out in this document. For more information on the Standards for Math Practice, please visit: Illustrative Math

Number Talk Guidance: Number Talks are an essential instructional routine provided to support development of mental math fluency and strategic number sense. This important routine should be incorporated outside of the 60-minute math block on a regular basis. A variety of Number Talks have been recommended for use at the start of school, fall, winter and spring. Use your professional judgment along with the collaborative efforts of building staff and Staff Development Specialists when meeting the needs of students.

Game Resource Guidance: It is critical to note that fluency requires a balance of conceptual understanding and computational procedures. Well-posed and engaging math games afford students excellent opportunities to develop this understanding**.** These games have been identified in Investigations and other resources and provided by unit to reinforce prior knowledge concepts or enhance the key concepts of a unit. Guidance is provided for when and how to integrate these games, however, use your professional judgment when meeting the needs of students.

A few questions teams have asked while using this document:

- What are the concepts covered term 1 vs term 2? How does the standard progress over the year? Where does the standard occur before it is finalized?
- Knowing all standards must be learned and the majority of the year (~80%) should be spent on major work ( ), where can we compact, not skip, if needed?
- What is the focus of the unit? What is the primary domain? Is it major ( ), supporting ( ), or additional ( )work?
- How will strategies for fluency (efficiency, accuracy, flexibly) be built through games and Number Talks over the year?
- What are the Key Concepts students should master in this unit? To what depth is the current unit calling for? (range of numbers, strategies, use of abstraction like equations, concept awareness and flexibility, etc.)
- Within the unit, for each Key Concept, what do I want ALL of my students to know an be able to do?
- How can I use the set of lessons available for a Key Concept to support ALL of my students in this learning?
- What “I can” or “I know” statements would make the Key Concepts clear to my learning community?
- What evidence can I gather to show students have learned the Key Concept?
- Considering the Key Concept, how will I support students who need more support or are ready for more challenge? What games or Number Talks might support my learning community?
- How can I leverage and reinforce the Math Practices as students learn Key Concepts?

Reach out to your school’s Staff Development Specialist if clarification or support is needed.

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Reporting Period 1

Instructional Days: 88	**LearnZillion Units:** 0-7 (83 lessons available)

★	**Unit 0: Building a Mathematical Community in Grade 2 (Lessons: 6)**	
	Lesson & Standards	Key Concepts
September - Beg. of Oct.	**Unit 1 - Adding and subtracting within 100**	
	Lessons: 16 (15+assessment) 2.NBT.B.5 2.OA.A.1 2.OA.B.2 MP1, MP7	1. We can add numbers within 100 using our knowledge of place value.
		2. We can subtract numbers within 100 using our knowledge of place value.
		3. We can find unknown values in addition and subtraction situations using the relationship between addition and subtraction.
		4. We can compare known quantities by finding the unknown value.
October	**Unit 2 - Exploring standard units of length**	
	Lessons: 11 (10+assessment) 2.MD.A.1+ 2.MD.A.2+ MP2, MP5, MP6	1. There are different systems of measurement for measuring length, and each system includes different units.
		2. For a given measurement task, certain measurement tools will be more appropriate than others.
		3. There is an inverse relationship between the size of a unit of measurement and the number of those units it takes to equal a given length.
End of Oct. - November	**Unit 3 - Relating addition and subtraction strategies to length**	
	Lessons: 11 (10+assessment) 2.OA.A.1 2.MD.B.5 2.MD.B.6+ MP5, MP6, MP7	1. We can represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ...,
		2. We can use a number line to solve many types of addition and subtraction related to length.
		3. We can use a number line to solve many types of addition and subtraction problems.
November	**Unit 4 - Relating skip counting to time** Ideas to compact:	
	Lessons: 6 (5+assessment) 2.MD.C.7+ 2.NBT.A.2 MP6, MP7	1. We can use skip counting by fives and tens to tell and write time on both analog and digital clocks.

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End Nov - December	**Unit 5 - Solving problems involving money** Ideas to compact:	
	Lessons: 11 (10+assessment) 2.MD.C.8+ MP2 , MP4	1. Different denominations of currency represent different amounts of money: dollar bills, quarters, dimes, nickels, and pennies.
		2. We can make the same amounts of money using different combinations of bills and coins.
		3. We can use addition and subtraction to put together and take apart amounts of money.
End Dec - January	**Unit 6 - Understanding three-digit numbers**	
	Lessons: 11 (10+assessment) 2. NBT.A.1+ 2.NBT.A.1.a+ 2.NBT.A.1.b+ 2.NBT.A.2 MP3, MP4, MP7	1. A bundle of ten tens can be thought of as a hundred.
		2. The digits in a three-digit number represent hundreds, tens, and ones, from left to right.
		3. We can represent three digit numbers in different but equivalent ways.
January	**Unit 7 - Expressing and comparing three-digit numbers**	
	Lessons: 11 (10+assessment) 2.NBT.A.3+ 2.NBT.A.4+ MP3, MP4, MP6, MP7	1. Representing a whole number in different ways (including base-ten numerals, number names, and expanded form) does not change its value.
		2. Understanding the structure of the place value system allows us to determine whether one number (within 1000) is greater than, less than, or equal to another number.
		3. Because 100 is greater than any quantity that can be represented by a 2-digit number, we compare three-digit numbers by looking at the hundreds place first.

Standards in Progress...	**Standards Finalized (moved to in Maintenance)**	**Standards Not Yet Taught**
2.OA.A.1 - Solves one-step word problems with unknowns in all positions and continue to explore one- and two-step word problems leveraging place value and using a symbol for the unknown in term 2. **2.OA.B.2** - Begins to know and leverage mental strategies for fluency (efficient, flexible, accurate) within 20 such as make tens, double, near doubles, etc. **2.NBT.A.2** - Skip count by 5s and 10s. **2.NBT.B.5** - Begins to leverage place value and the relationship of addition and subtraction when solving within 100. **2.MD.B.5** - Begins to leverage place value to add and subtract lengths that are given within 100. Using length provides a contextual foundation to build drawings and equations with unknown quantities.	2.NBT.A.1 2.NBT.A.1.a 2.NBT.A.1.b 2.NBT.A.3 2.NBT.A.4 2.MD.A.1 2.MD.A.2 2.MD.B.6 2.MD.C.7 2.MD.C.8	2.OA.C.3 2.OA.C.4 2.NBT.B.6 2.NBT.B.7 2.NBT.B.8 2.NBT.B.9 2.MD.A.3 2.MD.A.4 2.MD.D.9 2.MD.D.10 2.G.A.1 2.G.A.2 2.G.A.3

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Reporting Period 2

Instructional Days: 84.5	**LearnZillion Units:** 8-14 (83 lessons available)

February	**Unit 8 - Relating skip counting to mental addition and subtraction**	
	Lessons: 6 (5+assessment) 2.NBT.A.2 2.NBT.B.8+ MP8	1. We can use skip counting to add or subtract because, when we count, we move along the number line.
February	**Unit 9 - Generating and representing measurement data to solve problems** Ideas to compact:	
	Lessons: 16 (15+assessment) 2.OA.A.1 2.MD.D.9+ 2.MD.D.10+ MP1. MP2, MP3, MP4, MP6	1. We can generate measurement data by measuring several objects.
		2. We can generate measurement data by measuring a single object more than once.
		3. We can display measurement data by making a line plot.
		4. We can display data by making a picture graph and bar graph.
March	**Unit 10 - Reasoning with shapes and their attributes** Ideas to compact:	
	Lessons: 12 (11+assessment) 2.G.A.1+ 2.G.A.3+ MP2, MP3	1. Certain shapes (triangles, quadrilaterals, pentagons, hexagons, and cubes) are defined by their sides and angles.
		2. Shapes can be partitioned into equal parts; a whole can be divided into two halves, three thirds, or four quarters/fourths.
		3. Equal shares of identical wholes do not need to have the same shape.
April	**Unit 11 - Applying strategies to add and subtract within 1,000**	
	Lessons: 16 (15+assessment) 2.NBT.B.6+ 2.NBT.B.7+ 2.NBT.B.9+ MP1, MP8	1. We use place value to add three-digit numbers.
		2. Sometimes, we compose or decompose tens or hundreds when adding three-digit numbers.
		3. Sometimes, we compose or decompose tens or hundreds when subtracting three-digit numbers.
		4. A group of addends always has the same sum no matter what strategy we use to add them.

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End of Apr. - May	**Unit 12 - Developing foundations of multiplication through exploring even and odd numbers** Ideas to compact:	
	Lessons: 11 (10+assessment) 2.OA.C.3+ MP4, MP7	1. Whole numbers are either even or odd. Even numbers are the sum of 2 equal whole addends, and odd numbers are not.
		2. We can use skip-counting or pairing objects to determine whether there is an odd or even number in a group.
		3. We can write an equation to show that an whole number is the sum of two equal addends.
May	**Unit 13 - Using arrays for foundations of multiplication** Ideas to compact:	
	Lessons: 11 (10+assessment) 2.OA.C.4+ 2.G.A.2+ MP2, MP6, MP7	1. A group of objects can be organized in an array and thought of as a number of equal groups.
		2. Skip-counting or repeated addition can be used to find the total number of objects in an array because there is the same number of objects in every row or column.
		3. A rectangle can be partitioned into rows and columns of same-sized squares.
End of May - June	**Unit 14 - Estimating and comparing lengths**	
	Lessons: 11 (10+assessment) 2.MD.A.3+ 2.MD.A.4+ 2.MD.B.5 MP1, MP2, MP3, MP5, MP6	1. We can use our knowledge of units to estimate lengths.
		2. Measurement can be used to determine how much longer one object is than another.
		3. Addition and subtraction can be used to compare measured or estimated lengths of objects.
Optional	**Unit 15 (optional) - Demonstrating fluency in addition and subtraction** Optional Focus Lessons:	
	Lessons: 16 (15+assessment) 2.OA.A.1 2.OA.B.2 2.NBT.B.5 MP1, MP6, MP8	1. Understanding the place value system allows us to fluently add and subtract numbers within 100.
		2. We can use addition and subtraction in many different ways.
		3. The strategy we use to add or subtract does not change the total or difference.
		4. Knowing some addition and subtraction facts from memory helps us solve new addition and subtraction problems.

NOTE 2.OA.B.2 - Single-digit sums and differences (sums from memory by end of Grade 2): Fluency is built all year within lessons, during Number Talks and through game play. Since mental math (or memory) is the goal, students should be encouraged to use strategies like make ten, doubles, doubles +/-1, doubles +/-2, bridge to a ten, etc.
NOTE 2.NBT.B.5 - Add/subtract within 100: Focus on leveraging place value and strategy for efficiency and flexibility is key for this standard. Please note that the standard algorithm is one strategy to understand by the end of Grade 4 and is not the focus of Grade 2 work.

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Developing Math Fluency with Grade 2 Number Talks

Overview: Number Talks supports the development of students' procedural fluency from conceptual understanding. This instructional routine takes about 5-15 minutes. The routine structures classroom conversation around purposefully ordered computation problems that students solve mentally.

Recommended Number Talk Sets
Introduction (Establishing expectations for Number Talks)
Grade 1 - Addition: Doubles/Near Doubles • Rekenreks • Double Ten-Frames • Number Sentences Grade 1 - Addition: Making Ten • Rekenreks • Double Ten-Frames • Number Sentences Grade 1 - Addition: Making Landmark or Friendly Numbers
Fall
Grade 2 - Addition • Friendly Numbers
Winter
Grade 2 - Addition • Breaking into Place Value • Adding Up in Chunks • Adding Up
Spring
Grade 2 - Addition • Compensation Grade 2 - Subtraction • Removal • Counting Back

Common Tools:

- Dots
- Rekenreks
- Five/Ten Frames
- Open Number line
- Hundreds Chart
- Cubes, Tiles, Counters
- Real-life Context

General Prompts:

- I agree with _____ because _____.
- I do not understand _____. Can you explain this again?
- I disagree with _____ because _____.
- How did you decide to _____?

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Practicing Math Fluency with Grade 2 Games

Purpose: Games provide additional practice to develop fluencies and opportunity to encourage a positive relationship with mathematics and peers. While teachers have identified 2-4 games per unit to support Operations and Algebraic Thinking, other game resources have been included in a Grade-level Games Binder. Teachers are encouraged to enhance standards with other materials or activities at their discretion. Game structures such as partners, small group, or differentiated review rely on a solid foundation of positive mathematical mindsets and clear community expectations. Unit 0 provides many instructional strategies to enhance such an environment.

Unit	Games in LZ	Supplemental Game	Source	Standard(s) for Supplemental Games
Unit 1	Cut and paste Comparison Sort	Double Compare Guess My Number Get to 100 Roll a Square Unroll a Square	Investigations Investigations Investigations Investigations Investigations	1.OA.A.1 2.OA.B/C 2.NBT - 5, 6 2.NBT.5 2.NBT.5
Unit 2		Scavenger Hunt Land of Inch Story & Activity	Investigations Investigations	2.MD.3 2.MD.4
Unit 3*	Barnyard Battle	Get to 100 Roll a Square Unroll a Square	Investigations Investigations Investigations	2.NBT - 5, 6 2.NBT.5 2.NBT.5
Unit 4	Guess My Pattern Mr. Crocodile, What time is it?			
Unit 5*	Coin Race	Collect 25 Cents Collect 50 Cents Collect $1 Spend $1	Investigations Investigations Investigations Investigations	2.OA.2, 2.MD.8 2.MD.8 2.NBT - 5, 6, 2.MD.8 2.NBT - 5, 6, 2.MD.8
Unit 6	Race to 600! Place Value Scoot	A”mazing” 100 Build Ten Close to 100	Other Resource Other Resource Other Resource	2.OA.B , 2.NBT.A/B 2.OA.B 2.OA.B , 2.NBT.A/B
Unit 7*	Garbage Can Number Cube Game	A”mazing” 100 Build Ten Close to 100	Other Resource Other Resource Other Resource	2.OA.B , 2.NBT.A/B 2.OA.B 2.OA.B , 2.NBT.A/B
Unit 8*	Hip Hop to 500	Circles and Stars	Other Resource Other Resource	2.OA.B/C 2.OA.B/C

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	How Close Can You Get?	Making Moves on the 100s Chart		
Unit 9				
Unit 10	Quadrilateral Ladders Building Wholes			
Unit 11	Roll it, Solve it, Sort it! (addition) Roll it, Solve it, Sort it! (Subtraction) Race to 500	Close to 1000	Other Resource	2.OA.B, 2.NBT.A/B
Unit 12	Race to Six Evens or Odds An EVENing in the ODD Forest	Odd or Even?	Other Resource	2.OA.B/C
Unit 13	Drawing Arrays	Double It Double Arrays Circle and Stars	Investigations Investigations Other Resource	2.NBT.6 2.OA.4 2.OA.B/C
Unit 14*	Comparing Lengths-Cm Comparing Lengths-Inches			
Unit 15*	Closest to 100			

* No additional aligned games for this unit at this time. Please select from the Games Resources binder to support prior knowledge.

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