

# Grade 4: LearnZillion Pacing Guidance & Additional Supports

## 2017-2018 School Year

**In grade 4, instructional time should focus on three critical areas:**

- Developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends
- Developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers
- Understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

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.



**LearnZillion Pacing Guidance:** Use the following to ensure students are given opportunities to master grade-level content standards. The start of the year (★), suggested unit (U#) launch dates, non-student (NS) contact days, and an additional assessment day per unit are provided. Note that some dates were intentionally left unassigned to account for transition to or from breaks and added flexibility for state testing requirements. In an effort to consider the unique characteristics of each school and classroom, pacing guidance is not meant to be rigid rather informed by standards and data driven. Use information about the major, supporting and additional work for your grade-level and your professional judgement when meeting the needs of students. Reach out to your school's Staff Development Specialist if clarification or support is needed.

**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 judgement 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 judgement when meeting the needs of students.

# GRADE 4 PACING GUIDE

KEY:

Color by Domain	NF	OA	CC	GEO	NBT	MD
★ = 1st day of school	U# = Unit launch day	NS = No student day	<span style="color: green;">■</span> Major Work	<span style="color: blue;">□</span> Supporting Work	<span style="color: yellow;">●</span> Additional Work	

Total LearnZillion Lessons: 145 + 13 Assessments\*

## Reporting Period 1: LearnZillion Units 1-6

September				
Mon	Tue	Wed	Thu	Fri
				1
4	5	6 ★	7	8
11	12	13	14 U1	15
18	19	20	21	22
25	26	27	28	29 U2

**UNIT 1: Exploring multiples and factors**  
Lessons: 11 (10+assessment)

□ 4.OA.B.4, ● 4.OA.C.5

MP3 - Construct viable arguments and critique the reasoning of others  
MP7 - Look for and make use of structure

October				
Mon	Tue	Wed	Thu	Fri
2	3	4	5	6
9	10	11	12	13 NS
16	17	18	19	20
23	24 U3	25	26	27
30	31			

**UNIT 2: Using multiplication and division strategies with larger numbers**  
Lessons: 16 (15+assessment)

■ 4.OA.A.3, ■ 4.NBT.B.5, ■ 4.NBT.B.6,  
□ 4.MD.A.3

MP1 - Make sense of problems and persevere in solving them  
MP2 - Reason abstractly and quantitatively  
MP7 - Look for and make use of structure  
MP8 - Look for and express regularity in repeated reasoning

November				
Mon	Tue	Wed	Thu	Fri
		1	2	3
6	7	8	9	10 NS
13 U4	14	15	16	17
20	21	22	23 NS	24 NS
27	28	29	30	





**UNIT 3: Decomposing and composing fractions for addition and subtraction**  
Lessons: 13 (12+assessment)



■ 4.NF.B.3a, ■ 4.NF.B.3b, ■ 4.NF.B.3c  
■ 4.NF.B.3d




MP1 - Make sense of problems and persevere in solving them  
MP2 - Reason abstractly and quantitatively  
MP3 - Construct viable arguments and critique the reasoning of others  
MP4 - Model with mathematics  
MP7 - Look for and make use of structure  
MP8 - Look for and express regularity in repeated reasoning

December				
Mon	Tue	Wed	Thu	Fri
				1
4	5	6	7	8
11 U5	12	13	14	15
18 NS	19 NS	20 NS	21 NS	22 NS
25 NS	26 NS	27 NS	28 NS	29 NS

January				
Mon	Tue	Wed	Thu	Fri
1 NS	2 NS	3	4	5
8	9	10	11	12
15 NS	16	17	18	19
22 U6	23	24	25	26
29	30	31		

**UNIT 4: Applying place value concepts in whole number addition and subtraction**  
**Lessons: 15 (14+assessment)**  
 4.NBT.A.1,  4.NBT.A.2,  4.NBT.A.3,  
 4.NBT.A.4  
**MP2** - Reason abstractly and quantitatively  
**MP6** - Attend to Precision  
**MP8** - Look for and express regularity in repeated reasoning

**UNIT 5: Understanding fraction equivalence and comparison**  
**Lessons: 16 (15+assessment)**  
 4.NF.A.1,  4.NF.A.2  
**MP3** - Construct viable arguments and critique the reasoning of others  
**MP4** - Model with mathematics  
**MP5** - Use appropriate tools strategically

**UNIT 6: Introducing measurement conversions**  
**Lessons: 11 (10+assessment)**  
 4.NBT.A.1,  4.MD.A.1,  4.OA.A.1  
**MP2** - Reason abstractly and quantitatively  
**MP4** - Model with mathematics  
**MP7** - Look for and make use of structure  
**MP8** - Look for and express regularity in repeated reasoning

**Winter Grade 4 Report Cards Notes:**

Operations and Algebraic Thinking

- Use the four operations with whole numbers to solve problems
  - 4.OA.2 (NOT YET TAUGHT)

Numbers and Operations - Fractions

- Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers
  - 4.NF.4abc (NOT YET TAUGHT)
- Understand decimal notation for fractions and compare decimal fractions (NOT YET TAUGHT)

Measurement and Data

- Solve Problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
  - 4.MD.2 (NOT YET TAUGHT)
- Represent and interpret data. (NOT YET TAUGHT)
- Geometric measurement: understand concepts of angle and measure angles. (NOT YET TAUGHT)

Geometry

- Draw and identify lines and angles, and classify shapes by properties of their lines and angles. (NOT YET TAUGHT)

## Reporting Period 2: LearnZillion Units 7-13

February				
Mon	Tue	Wed	Thu	Fri
			1	2 NS
5	6	7 U7	8	9
12	13	14	15	16
19 NS	20	21	22	23 U8
26	27	28		

March				
Mon	Tue	Wed	Thu	Fri
			1	2
5	6	7	8	9
12 U9	13	14	15	16
19	20	21	22	23
26 NS	27 NS	28 NS	29 NS	30 NS

April				
Mon	Tue	Wed	Thu	Fri
2 NS	3	4 U10	5	6
9	10	11	12	13
16	17	18	19 U11	20
23	24	25	26	27
30				

### UNIT 7: Solving problems using multiplicative comparison

Lessons: 11 (10+assessment)

 4.OA.A.2,  4.NBT.A.3,  4.MD.A.2

MP1 - Make sense of problems and persevere in solving them

MP2 - Reason abstractly and quantitatively

MP4 - Model with mathematics

MP5 - Use appropriate tools strategically

MP6 - Attend to Precision

MP7 - Look for and make use of structure

### UNIT 8: Solving measurement problems using the four operations

Lessons: 11 (10+assessment)

 4.OA.A.3,  4.MD.A.2,  4.NBT.B.4

MP1 - Make sense of problems and persevere in solving them

MP2 - Reason abstractly and quantitatively

MP6 - Attend to Precision

### UNIT 9: Solving addition and subtraction problems involving fractions and mixed numbers

Lessons: 10 (9+assessment)

 4.NF.3.c,  4.NF.3.d,  4.MD.4

MP2 - Reason abstractly and quantitatively

MP3 - Construct viable arguments and critique the reasoning of others

MP4 - Model with mathematics

### UNIT 10: Angle measurement

Lessons: 11 (10+assessment)

 4.G.A.1,  4.MD.C.5a,  4.MD.C.5b,

 4.MD.C.6

MP3 - Construct viable arguments and critique the reasoning of others

MP4 - Model with mathematics

MP5 - Use appropriate tools strategically

MP7 - Look for and make use of structure

May				
Mon	Tue	Wed	Thu	Fri
	1	2	3	4 NS
7 U12	8	9	10	11
14	15	16	17	18
21	22 U13	23	24	25
28 NS	29	30	31	

June				
Mon	Tue	Wed	Thu	Fri
				1
4	5	6	7	8 NS
11	12	13	14	15 ☆
18	19	20	21	22
25	26	27	28	29

**UNIT 11: Multiplying fractions by whole numbers**  
**Lessons:** 11 (10+assessment)

■ 4.OA.A.1, ■ 4.NF.B.4a, ■ 4.NF.B.4b,  
 ■ 4.NF.B.4c

**MP1** - Make sense of problems and persevere in solving them  
**MP6** - Attend to Precision

**UNIT 12: Comparing decimal fractions and understanding notation**  
**Lessons:** 11 (10+assessment)

■ 4.NF.C.5, ■ 4.NF.C.6, ■ 4.NF.C.7

**MP3** - Construct viable arguments and critique the reasoning of others  
**MP4** - Model with mathematics  
**MP7** - Look for and make use of structure

**UNIT 13: Recognizing and analyzing attributes of 2-dimensional shapes**  
**Lessons:** 11 (10+assessment)

☀ 4.G.A.1, ☀ 4.G.A.2, ☀ 4.G.A.3, ☀ 4.OA.C.5,  
 ☀ 4.MD.C.7

**MP1** - Make sense of problems and persevere in solving them  
**MP2** - Reason abstractly and quantitatively  
**MP4** - Model with mathematics  
**MP6** - Attend to Precision

**\* Supplemental Resources**

**UNIT 14: Problem solving with whole numbers**  
 (15 lessons)

■ 4.OA.A.2, ■ 4.OA.A.3, ■ 4.NBT.B.4,  
 ■ 4.NBT.B.6

**MP1** - Make sense of problems and persevere in solving them  
**MP2** - Reason abstractly and quantitatively  
**MP3** - Construct viable arguments and critique the reasoning of others  
**MP8** - Look for and express regularity in repeated reasoning

## Developing Math Fluency with Grade 4 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.

<b>Recommended Number Talk Sets</b>
<b><u>Introduction</u></b> (Establishing expectations for Number Talks)
<b>Addition</b> <ul style="list-style-type: none"> <li>● Number Sentences</li> <li>● Friendly Numbers</li> <li>● Breaking into Place Value</li> </ul>
<b><u>Fall</u></b>
<b>Subtraction</b> <ul style="list-style-type: none"> <li>● Adding Up</li> <li>● Removal</li> </ul> <b>Multiplication</b> <ul style="list-style-type: none"> <li>● Friendly Numbers</li> <li>● Partial Products</li> </ul>
<b><u>Winter</u></b>
<b>Addition</b> <ul style="list-style-type: none"> <li>● Compensation</li> </ul> <b>Subtraction</b> <ul style="list-style-type: none"> <li>● Counting Back</li> <li>● Place Value and Negative Numbers</li> <li>● Adjusting One Number to Create an Easier Problem</li> </ul> <b>Multiplication</b> <ul style="list-style-type: none"> <li>● Doubling and Halving</li> </ul> <b>Division</b> <ul style="list-style-type: none"> <li>● Partial Quotients</li> <li>● Multiplying Up</li> </ul>
<b><u>Spring</u></b>
<b>Addition</b> <ul style="list-style-type: none"> <li>● Adding Up in Chunks</li> </ul> <b>Subtraction</b> <ul style="list-style-type: none"> <li>● Constant Difference</li> </ul> <b>Multiplication</b> <ul style="list-style-type: none"> <li>● Breaking Factors Into Smaller Factors</li> </ul> <b>Division</b> <ul style="list-style-type: none"> <li>● Proportional Reasoning</li> </ul>

Common Tools:

- Dots or Drawings
- Open Number line
- Hundreds Chart
- Place Value Charts
- Cubes, Tiles, Counters
- Base Ten
- Array or Area Models
- Groupings
- 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 \_\_\_\_\_?

## Practicing Math Fluency with Grade 4 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	Game Name	Source	Standard(s)
Unit 1	Factor Pairs Multiple Turnover Missing Factors	Investigations Investigations Investigations	4.OA.4 4.OA.4 4.NBT.6
Unit 2	Small Array/Big Array Missing Factors Target 300	Investigations Investigations Other Resource	4.NBT.5 4.NBT.6 4.OA.A/B, 4.NBT.A
Unit 3	Wipeout	Other Resource	
Unit 4	Close to 1000 Changing Places Roll 6 for 100	Investigations Investigations Other Resource	4.NBT.4 4.NBT.4 4.OA.A, 4.NBT.B
Unit 5	Capture Fractions Greater than, Less than, Equal to (use with Fractions Cards)	Investigations Other Resource	4.NF.2 4.NF.2
Unit 6*			
Unit 7*			
Unit 8*			
Unit 9	Close to 100 Close to 1000	Investigations Investigations	4.NBT.4 4.NBT.4
Unit 10*			
Unit 11*			
Unit 12	Decimal Compare	Investigations	4.NF.7
Unit 13	Guess My Rule - Power Polygons	Investigations	

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