

Third Grade Math Scope and Sequence 21-22

The following is a recommended sequence in which to teach the standards within the clusters.

Cluster 1 Cluster 1 Preassessment **[SPAN]**

In this cluster, students will be taking a closer look at representation and comparison of whole numbers. Students will also continue to **explore models of addition and subtraction** of whole numbers and begin to become **fluent in their strategies** used during addition and subtraction of whole numbers.

Process Standards should be taught throughout all components of the workshop.

- 3.1 The student uses mathematical processes to acquire and demonstrate mathematical understanding.
- 3.1(A) Apply mathematics to problems arising in everyday life, society, and the workplace
- 3.1(B) Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution
- 3.1(C) Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems
- 3.1(D) Communicate mathematical ideas, reasoning, and their implications using multiple representations
- 3.1(E) Create and use representations to organize, record, and communicate ideas
- 3.1(F) Analyze mathematical relationships to connect and communicate math ideas
- 3.1(G) Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication

Daily Numeracy

A number sense routine is an engaging, accessible, purposeful routine to begin your math class that promotes a community of positive mathematics discussion and thinking. Number Sense standards are **addressed and spiraled throughout the year during daily number sense routines**. The numeracy activities should be rotated and varied in the mode delivered. Number sense routines do not necessarily have to align to the content that is currently being taught during mini lessons. Some number sense activities include, but not limited to, are noted here.

The following supporting standards are not included directly in the scope and sequence. They should be spiraled through daily number sense routines and learning stations throughout the school year.

- 2.2(A) use concrete and pictorial models to compose and decompose numbers up to 1,200 in more than one way as a sum of so many thousands, hundreds, tens, and ones
- 3.2(B) describe the mathematical relationships found in the base-10 place value system through the hundred thousands place
- 3.2(C) represent a number on a number line as being between two consecutive multiples of 10; 100; 1,000; or 10,000 and use words to describe relative size of numbers in order to round whole numbers
- 3.4(B) round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems



STEM Activity



Coding Activity

Cluster 1: Representation and Comparison of Whole Numbers, Addition and Subtraction	Knowledge and Skills	3.2 Number and operations. The student applies mathematical process standards to represent and compare whole numbers and understand relationships related to place value. The student is expected to:
	Readiness	3.2(A) compose and decompose numbers up to 100,000 as a sum of so many ten thousands, so many thousands, so many hundreds, so many tens, and so many ones using objects, pictorial models, and numbers, including expanded notation as appropriate. 3.2(A) Resources to Support Blended Learning
	Supporting	3.2(B) describe the mathematical relationships found in the base-10 place value system through the hundred thousands place
	Readiness	3.2(D) compare and order whole numbers up to 100,000 and represent comparisons using the symbols $>$, $<$, or $=$ 3.2(D) Resources to Support Blended Learning
	Supporting	3.2(C) represent a number on a number line as being between two consecutive multiples of 10; 100; 1,000; or 10,000 and use words to describe relative size of numbers in order to round whole numbers
Suggested Pacing: August 12 - October 7	Knowledge and Skills	3.4 Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:
	Supporting	3.4(B) round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems
	Knowledge and Skills	3.5 Algebraic reasoning. The student applies mathematical process standards to analyze and create patterns and relationships. The student is expected to:
	Readiness Essential	3.5(A) represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations 3.5(A) Resources to Support Blended Learning
	Knowledge and Skills	3.4 Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:
Readiness 	3.4(A) solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction 3.4(A) Resources to Support Blended Learning	



STEM Activity



Coding Activity

Grade 3 Math District Snapshot #1 Blueprint

Cluster 2

Cluster 2 Preassessment **[SPAN]**

In this cluster, students will explore multiplication and division of whole numbers **through the use of models**. Students should be **exposed to multiple strategies** based on object, pictorial models, including arrays, area models, prior to moving to more abstract thinking.

Spiral Essentials

The following essential standard from the previous cluster should be spiraled throughout this cluster during **number sense routines, learning stations, and small group instruction** based on formative assessments. *Process Standards should be taught throughout all components of the workshop (see page 1).*

3.5(A) represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations
3.5(A) Resources to Support Blended Learning

A number sense routine is an engaging, accessible, purposeful routine to begin your math class that promotes a community of positive mathematics discussion and thinking. Number Sense standards are **addressed and spiraled throughout the year during daily number sense routines**. The numeracy activities should be rotated and varied in the mode delivered. Number sense routines do not necessarily have to align to the content that is currently being taught during mini lessons. Some number sense activities include, but not limited to, are noted here.

The following supporting standards are not included directly in the scope and sequence. They should be spiraled through daily number sense routines and learning stations throughout the school year.

- 3.2(B) describe the mathematical relationships found in the base-10 place value system through the hundred thousands place
- 3.2(C) represent a number on a number line as being between two consecutive multiples of 10; 100; 1,000; or 10,000 and use words to describe relative size of numbers in order to round whole numbers
- 3.4(B) round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems
- 3.4(I) determine if a number is even or odd using divisibility rules
- 3.5(C) describe a multiplication expression as a comparison such as 3×24 represents 3 times as much as 24

Cluster 2: Exploring Multiplication and Division through Models and Multiple Strategies	Knowledge and Skills	3.4 Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:
	Supporting	3.4(D) determine the total number of objects when equally sized groups of objects are combined or arranged in arrays up to 10 by 10
	Supporting	3.4(E) represent multiplication facts by using a variety of approaches such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line, and skip counting
	Knowledge and Skills	3.5 Algebraic reasoning. The student applies mathematical process standards to analyze and create patterns and relationships. The student is expected to:



STEM Activity



Coding Activity

Suggested Pacing: October 10 - December 17	Supporting	3.5(C) describe a multiplication expression as a comparison such as 3×24 represents 3 times as much as 24
	Knowledge and Skills	3.4 Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:
	Supporting	3.4(G) use strategies and algorithms, including the standard algorithm, to multiply a two-digit number by a one digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties
Snapshot Window: December 13 - December 17	Supporting	3.4(H) determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally
	Supporting	3.4(I) determine if a number is even or odd using divisibility rules
	Supporting	3.4(J) determine a quotient using the relationship between multiplication and division
	Readiness Essential	3.4(K) solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts. The student is expected to: 3.4(K) Resources to Support Blended Learning
	Knowledge and Skills	3.5 Algebraic reasoning. The student applies mathematical process standards to analyze and create patterns and relationships. The student is expected to:
	Readiness Essential	3.5(B) represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations 3.5(B) Resources to Support Blended Learning
	Supporting	3.5(D) determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is either a missing factor or product
	Readiness	3.5(E) represent real-world relationships using number pairs in a table and verbal descriptions 3.5(E) Resources to Support Blended Learning



STEM Activity



Coding Activity

Grade 3 Math District Snapshot #2 Blueprint

Cluster 3 Cluster 3 Preassessment [SPAN]

In this cluster, students will determine the **area of rectangles** and **perimeter of polygons**. This cluster also focuses on a **continuation of fractional development**. Students will continue to build understanding with denominators of 2, 4, and 8 from Grade 2, but also explore denominators of 3 and 6. Students will begin working with fractions that are smaller than 1. Because students have counted fractional parts beyond 1, students may continue to count fractional parts beyond 1. Do not be tempted to stretch the new learning in the third grade SEs to fractions that are larger than 1 - Counting beyond 1 is still okay.

Spiral Essentials

The following essential standard from the previous cluster should be spiraled throughout this cluster during **number sense routines, learning stations, and small group instruction** based on formative assessments. *Process Standards should be taught throughout all components of the workshop (see page 1).*

3.4(K) solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts.

3.4(K) Resources to Support Blended Learning

3.5(B) represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations

3.5(B) Resources to Support Blended Learning

Daily Numeracy

A number sense routine is an engaging, accessible, purposeful routine to begin your math class that promotes a community of positive mathematics discussion and thinking. Number Sense standards are **addressed and spiraled throughout the year during daily number sense routines**. The numeracy activities should be rotated and varied in the mode delivered. Number sense routines do not necessarily have to align to the content that is currently being taught during mini lessons. Some number sense activities include, but not limited to, are noted here.

The following supporting standards are not included directly in the scope and sequence. They should be spiraled through daily number sense routines and learning stations throughout the school year.

2.2(A) use concrete and pictorial models to compose and decompose numbers up to 1,200 in more than one way as a sum of so many thousands, hundreds, tens, and ones

3.2(B) describe the mathematical relationships found in the base-10 place value system through the hundred thousands place

3.2(C) represent a number on a number line as being between two consecutive multiples of 10; 100; 1,000; or 10,000 and use words to describe relative size of numbers in order to round whole numbers

3.4(B) round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems

Readiness

3.6(C) determine the area of rectangles with whole number side lengths in problems using multiplication related to the number of rows times the number of unit squares in each row

3.6(C) Resources to Support Blended Learning



STEM Activity



Coding Activity

Cluster 3: Exploring Area and Perimeter, Fractional Foundations	Supporting	3.6(D) decompose composite figures formed by rectangles into non-overlapping rectangles to determine the area of the original figure using the additive property of area
	Knowledge and Skills	3.7 Geometry and measurement. The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving customary and metric measurement. The student is expected to:
Suggested Pacing: January 4 - March 18	Readiness 	3.7(B) determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems 3.7(B) Resources to Support Blended Learning
	Knowledge and Skills	3.3 Number and operations. The student applies mathematical process standards to represent and explain fractional units. The student is expected to:
Snapshot Window: February 28 - March 4	Supporting	3.3(A) represent fractions greater than zero and less than or equal to one with denominators of 2, 3, 4, 6, and 8 using concrete objects and pictorial models, including strip diagrams and number lines
	Supporting 	3.3(E) solve problems involving partitioning an object or a set of objects among two or more recipients using pictorial representations of fractions with denominators of 2, 3, 4, 6, and 8
	Supporting	3.3(B) determine the corresponding fraction greater than zero and less than or equal to one with denominators of 2, 3, 4, 6, and 8 given a specified point on a number line
	Knowledge and Skills	3.7 Geometry and measurement. The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving customary and metric measurement. The student is expected to:
	Supporting	3.7(A) represent fractions of halves, fourths, and eighths as distances from zero on a number line
	Knowledge and Skills	3.3 Number and operations. The student applies mathematical process standards to represent and explain fractional units. The student is expected to:



STEM Activity



Coding Activity

Supporting	3.3(C) explain that the unit fraction $1/b$ represents the quantity formed by one part of a whole that has been partitioned into b equal parts where b is a non-zero whole number
Supporting	3.3(D) compose and decompose a fraction a/b with a numerator greater than zero and less than or equal to b as a sum of parts $1/b$
Readiness Essential 	3.3(F) represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines 3.3(F) Resources to Support Blended Learning
Supporting	3.3(G) explain that two fractions are equivalent if and only if they are both represented by the same point on the number line or represent the same portion of a same size whole for an area model
Knowledge and Skills	3.6 Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional geometric figures to develop generalizations about their properties. The student is expected to:
Supporting	3.6(E) decompose two congruent two-dimensional figures into parts with equal areas and express the area of each part as a unit fraction of the whole and recognize that equal shares of identical wholes need not have the same shape
Knowledge and Skills	3.3 Number and operations. The student applies mathematical process standards to represent and explain fractional units. The student is expected to:
Readiness Essential	3.3(H) compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models 3.3(H) Resources to Support Blended Learning



STEM Activity



Coding Activity

Cluster 4

Cluster 4 Preassessment [SPAN]

In this cluster, students will **classify and sort two- and three-dimensional figures**. Students will also look at **areas of measurement** such as determining the solutions to problems involving addition and subtraction of **time** intervals and determining when it is appropriate to use measurements of liquid **volume (capacity) or weight**. This cluster addresses solving problems using categorical **data** and summarizing a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals. This cluster ends with determining the **value of a collection of coins and bills** and applying mathematical process standards to manage one's financial resources effectively for lifetime financial security (**Personal Financial Literacy**).

Spiral Essentials

The following essential standard from the previous cluster should be spiraled throughout this cluster during **number sense routines, learning stations, and small group instruction** based on formative assessments. *Process Standards should be taught throughout all components of the workshop (see page 1).*

3.3(F) represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines

3.3(F) Resources to Support Blended Learning

3.3(H) compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models

3.3(H) Resources to Support Blended Learning

Daily Numeracy

A number sense routine is an engaging, accessible, purposeful routine to begin your math class that promotes a community of positive mathematics discussion and thinking. Number Sense standards are **addressed and spiraled throughout the year during daily number sense routines**. The numeracy activities should be rotated and varied in the mode delivered. Number sense routines do not necessarily have to align to the content that is currently being taught during mini lessons. Some number sense activities include, but not limited to, are noted here.

The following supporting standards are not included directly in the scope and sequence. They should be spiraled through daily number sense routines and learning stations throughout the school year.

2.2(A) use concrete and pictorial models to compose and decompose numbers up to 1,200 in more than one way as a sum of so many thousands, hundreds, tens, and ones

3.2(B) describe the mathematical relationships found in the base-10 place value system through the hundred thousands place

3.2(C) represent a number on a number line as being between two consecutive multiples of 10; 100; 1,000; or 10,000 and use words to describe relative size of numbers in order to round whole numbers

3.4(B) round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems

Readiness

3.6(A) classify and sort two- and three-dimensional figures, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language

3.6(A) Resources to Support Blended Learning



STEM Activity



Coding Activity

<p>Cluster 4: Geometry, Measurement, Personal Financial Literacy</p> <p>Suggest Pacing: March 21 - May 13</p>	Supporting 	3.6(B) use attributes to recognize rhombuses, parallelograms, trapezoids, rectangles, and squares as examples of quadrilaterals and draw examples of quadrilaterals that do not belong to any of these subcategories
	Knowledge and Skills	3.7 Geometry and measurement. The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving customary and metric measurements. The student is expected to:
	Supporting	3.7(C) determine the solutions to problems involving addition and subtraction of time intervals in minutes using pictorial models or tools such as a 15-minute event plus a 30-minute event equals 45 minutes
	Supporting	3.7(D) determine when it is appropriate to use measurements of liquid volume (capacity) or weight
	Supporting 	3.7(E) determine liquid volume (capacity) or weight using appropriate units and tools
	Knowledge and Skills	3.8 Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:
	Readiness 	3.8(A) summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals 3.8(A) Resources to Support Blended Learning
	Supporting	3.8(B) solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals
	Knowledge and Skills	3.4 Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:
	Supporting	3.4(C) determine the value of a collection of coins and bills
Knowledge and Skills	3.9 Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:	
Supporting	3.9(A) explain the connection between human capital/labor and income	



STEM Activity



Coding Activity

	Supporting	3.9(B) describe the relationship between the availability or scarcity of resources and how that impacts cost
	Supporting 	3.9(C) identify the costs and benefits of planned and unplanned spending decisions
	Supporting	3.9(D) explain that credit is used when wants or needs exceed the ability to pay and that it is the borrower's responsibility to pay it back to the lender, usually with interest
	Supporting	3.9(E) list reasons to save and explain the benefit of a savings plan, including for college
	Supporting	3.9 (F) identify decisions involving income, spending, saving, credit, and charitable giving

Cluster 5: Gearing up for Fourth Grade

Process Standards should be taught throughout all components of the workshop (see page 1).

Cluster 5: Gearing up for Fourth Grade	Knowledge and Skills	3.4 Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:
	Readiness Essential	3.4(K) solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts 3.4(K) Resources to Support Blended Learning
Suggested Pacing: May 16 - May 20		



STEM Activity



Coding Activity