

Fifth Grade Math
Scope and Sequence 21-22
 The following is a recommended sequence in which to teach the standards within the clusters.

Grade 5 Math District Snapshot #1 Blueprint

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.

Cluster 1
Cluster 1 Preassessment [SPAN]

In this cluster, students will extend on their knowledge of decimal numbers and look into some of the important decimals ideas that underlie learning about **adding and subtraction decimals**. Students will also deepen their understanding of decimals, and in particular for them to understand how to **estimate sums and differences involving decimals**, students in this cluster will take a look at how **decimals compare**. Students will revisit multiplication and division strategies from Grade 4 and continue to utilize strategies and models to assist with their learning. Students need to be able to **multiply a three-digit number by a two-digit number**. Students in Grade 5 are expected to be able to solve with proficiency **division problems that have up to a four-digit dividend and a two-digit divisor**. This cluster also includes **multiplication and division of decimals**. Students must be able to model multiplication and division of decimals **using objects and pictorial models**.

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

- 5.1 The student uses mathematical processes to acquire and demonstrate mathematical understanding.
- 5.1(A) Apply mathematics to problems arising in everyday life, society, and the workplace
- 5.1(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
- 5.1(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
- 5.1(D) Communicate mathematical ideas, reasoning, and their implications using multiple representations
- 5.1(E) Create and use representations to organize, record, and communicate ideas
- 5.1(F) Analyze mathematical relationships to connect and communicate math ideas
- 5.1(G) Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication


Knowledge and Skills	5.2 Number and operations. The student applies mathematical process standards to represent, compare, and order positive rational numbers and understand relationships as related to place value. The students is expected to:
Readiness	5.2(B) compare and order two decimals to thousandths and represent comparisons using the symbols $>$, $<$, or $=$



STEM Activity



Coding Activity

Cluster 1: Strategies and Methods for Positive Rational Number Computations	Essential	5.2(B) Resources to Support Blended Learning
	Supporting	5.2(A) represent the value of the digit in decimals through the thousandths using expanded notation and numerals
	Supporting	5.2(C) round decimals to tenths or hundredths
	Knowledge and Skills	5.3 Number and operations. The student applies mathematical process standards to develop and use strategies and methods for positive rational number computations in order to solve problems with efficiency and accuracy. The student is expected to:
	Supporting	5.3(B) multiply with fluency a three-digit number by a two-digit number using the standard algorithm
	Supporting	5.3(C) solve with proficiency for quotients of up to a four-digit dividend by a two-digit divisor using strategies and the standard algorithm
Suggested Pacing: August 12 - October 15	Knowledge and Skills	5.4 Algebraic reasoning. The student applies mathematical process standards to develop concepts of expressions and equations.
	Supporting	5.4(A) identify prime and composite numbers
Snapshot Window: October 12 - October 15	Knowledge and Skills	5.3 Number and operations. The student applies mathematical process standards to develop and use strategies and methods for positive rational number computations in order to solve problems with efficiency and accuracy. The student is expected to:
	Readiness Essential 	5.3(E) solve for products of decimals to the hundredths, including situations involving money, using strategies based on place-value understandings, properties of operations, and the relationship to the multiplication of whole numbers 5.3(E) Resources to Support Blended Learning
	Supporting	5.3(D) represent multiplication of decimals with products to the hundredths using objects and pictorial models, including area models
	Supporting	5.3(F) represent quotients of decimals to the hundredths, up to four-digit dividends and two-digit whole number divisors, using objects and pictorial models, including area models
	Readiness Essential	5.3(G) solve for quotients of decimals to the hundredths, up to four-digit dividends and two-digit whole number divisors, using strategies and algorithms, including the standard algorithm 5.3(G) Resources to Support Blended Learning
	Readiness Essential	5.3(K) add and subtract positive rational numbers fluently (using whole numbers and decimals only) 5.3(K) Resources to Support Blended Learning



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Coding Activity

Grade 5 Math District Snapshot #1 Blueprint

Cluster 2 Cluster 2 Preassessment **[SPAN]**

In this cluster, students are expected to **add and subtract fractions with different denominators**, but the same whole, **using objects, pictorial models, and properties of operations**. Students will also begin to learn **fraction multiplication**. Students in Grade 5 will only **multiply a fraction with a whole number using objects and pictorial models**. This cluster also begins to take a look at **division of whole numbers by unit fractions and unit fractions by whole numbers**. The students will represent division of a unit fraction by a whole number and the division of a whole number by a unit fraction, **using objects and pictorial models**, including area models. Later in this cluster, students will **describe the meaning of parentheses and brackets** in a numeric expression and begin to **simplify numerical expressions** that do not involve exponents. Students will also **represent and solve multi-step problems involving the four operations** with whole numbers using equations with a letter standing for the unknown quantity.

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).*

5.2(B) compare and order two decimals to thousandths and represent comparisons using the symbols $>$, $<$, or $=$

5.2(B) Resources to Support Blended Learning

5.3(E) solve for products of decimals to the hundredths, including situations involving money, using strategies based on place-value understandings, properties of operations, and the relationship to the multiplication of whole numbers


5.3(E) Resources to Support Blended Learning

5.3(G) solve for quotients of decimals to the hundredths, up to four-digit dividends and two-digit whole number divisors, using strategies and algorithms, including the standard algorithm

5.3(G) Resources to Support Blended Learning

5.3(K) add and subtract positive rational numbers fluently (**using whole numbers and decimals only**)

5.3(K) Resources to Support Blended Learning


Cluster 2: Fractional Understanding, Evaluating Expressions/ Equations	Knowledge and Skills	5.3 Number and operations. The student applies mathematical process standards to develop and use strategies and methods for positive rational number computations in order to solve problems with efficiency and accuracy. The student is expected to:
	Supporting 	5.3(H) represent and solve addition and subtraction of fractions with unequal denominators referring to the same whole using objects and pictorial models and properties of operations
	Readiness Essential	5.3(K) add and subtract positive rational numbers fluently (using whole numbers, decimals, and fractions) 5.3(K) Resources to Support Blended Learning



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Coding Activity

<p>Suggested Pacing: October 18 - December 17</p>	Supporting 	5.3(I) represent and solve multiplication of a whole number and a fraction that refers to the same whole using objects and pictorial models, including area models
	Readiness Essential	5.3(L) divide whole numbers by unit fractions and unit fractions by whole numbers 5.3(L) Resources to Support Blended Learning
	Supporting	5.3(J) represent division of a unit fraction by a whole number and the division of a whole number by a unit fraction such as $\frac{1}{3} \div 7$ and $7 \div \frac{1}{3}$ using objects and pictorial models, including area models
	Knowledge and Skills	5.4 Algebraic reasoning. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:
	Supporting	5.4(E) describe the meaning of parentheses and brackets in a numeric expression
	Readiness	5.4(F) simplify numerical expressions that do not involve exponents, including up to two levels of grouping 5.4(F) Resources to Support Blended Learning
	Knowledge and Skills	5.3 Number and operations. The student applies mathematical process standards to develop and use strategies and methods for positive rational number computations in order to solve problems with efficiency and accuracy. The student is expected to:
	Supporting	5.3(A) estimate to determine solutions to mathematical and real-world problems involving addition, subtraction, multiplication, or division
	Knowledge and Skills	5.4 Algebraic reasoning. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:
	Readiness Essential	5.4(B) represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity 5.4(B) Resources to Support Blended Learning



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Coding Activity

Grade 5 Math District Snapshot #2 Blueprint

Cluster 3 Cluster 3 Preassessment **[SPAN]**

In this cluster, students will **classify two-dimensional figures by attributes and properties**. Students will also look at solving problems involving measurement by recognizing a cube with side length of one unit as a unit cube having one cubic unit of **volume** and the volume of a three-dimensional figure as the number of unit cubes (cubic units) needed to fill it with no gaps or overlaps if possible. This cluster will have students determining the **volume of a rectangular prism** with whole number side lengths in problems related to the number of layers times the number of unit cubes in the area of the base. Students will also continue to look at **representing and solving problems related to perimeter and/or area and related to volume**. This cluster also looks at identifying locations on a **coordinate plane** and describing key attributes of the coordinate plane.

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).*

5.3(L) divide whole numbers by unit fractions and unit fractions by whole numbers

5.3(L) Resources to Support Blended Learning

5.4(B) represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity

5.4(B) Resources to Support Blended Learning

5.3(K) add and subtract positive rational numbers fluently (**using whole numbers, decimals, and fractions**)

5.3(K) Resources to Support Blended Learning

Cluster 3: Geometric Attributes	Knowledge and Skills	5.5 Geometry and measurement. The student applies mathematical process standards to classify two-dimensional figures by attributes and properties. The students is expected to:
	Readiness	5.5(A) classify two-dimensional figures in a hierarchy of sets and subsets using graphic organizers based on their attributes and properties 5.5(A) Resources to Support Blended Learning
	Knowledge and Skills	5.7 Geometry and measurement. The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving measurement. The student is expected to:
	Supporting	5.7(A) solve problems by calculating conversions within a measurement system, customary or metric



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Coding Activity

<p>Suggested Pacing: January 4 - February 17</p> <p>Snapshot Window: January 18 - January 21</p>	Knowledge and Skills	5.6 Geometry and measurement. The student applies mathematical process standards to understand, recognize, and quantify volume. The student is expected to:
	Supporting	5.6(A) recognize a cube with side length of one unit as a unit cube having one cubic unit of volume and the volume of a three-dimensional figure as the number of unit cubes (n cubic units) needed to fill it with no gaps or overlaps if possible
	Supporting	5.6(B) determine the volume of a rectangular prism with whole number side lengths in problems related to the number of layers times the number of unit cubes in the area of the base
	Knowledge and Skills	5.4 Algebraic reasoning. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:
	Supporting	5.4(G) use concrete objects and pictorial models to develop the formulas for the volume of a rectangular prism, including the special form for a cube ($V=l \times w \times h$, $V=s \times s \times s$, and $V=Bh$)
	Readiness	5.4(H) represent and solve problems related to perimeter and/or area and related to volume 5.4(H) Resources to Support Blended Learning
	Knowledge and Skills	5.8 Geometry and measurement. The student applies mathematical process standards to identify locations on a coordinate plane. The student is expected to:
	Supporting	5.8(A) describe the key attributes of the coordinate plane, including perpendicular number lines (axes) where the intersection (origin) of the two lines coincides with zero on each number line and the given point (0, 0); the x-coordinate, the first number in an ordered pair, indicates movement parallel to the x-axis starting at the origin; and the y-coordinate, the second number, indicates movement parallel to the y-axis starting at the origin
	Supporting	5.8(B) describe the process for graphing ordered pairs of numbers in the first quadrant of the coordinate plane
Readiness	5.8(C) graph in the first quadrant of the coordinate plane ordered pairs of numbers arising from mathematical and real-world problems, including those generated by number patterns or found in an input-output table 5.8(C) Resources to Support Blended Learning	



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Cluster 4

Cluster 4 Preassessment [SPAN]


In this cluster, students will develop concepts of expressions and equations by **generating numerical patterns and looking at the differences between additive and multiplicative patterns**. Students will also continue **solving problems by collecting, organizing, displaying, and interpreting data**. Students will represent categorical data with bar graphs or frequency tables and numerical data, including data sets of measurements in fractions or decimals, with dot plots or stem-and-leaf plots. This cluster also takes a look at **solving one- and two-step problems using data from a frequency table, dot plot, bar graph, stem-and-leaf plot, or scatterplot**. This cluster ends with a closer look at **personal financial literacy**. This will be a great review and reinforcement of earlier decimal skills.

Spiral Standards

The following readiness 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).*

5.5(A) classify two-dimensional figures in a hierarchy of sets and subsets using graphic organizers based on their attributes and properties

5.4(H) represent and solve problems related to perimeter and/or area and related to volume

<p>Cluster 4: Numerical Patterns, Data, Personal Financial Literacy</p> <p>Suggested Pacing: February 21 - April 1</p>	Knowledge and Skills	5.4 Algebraic reasoning. The student applies mathematical process standards to develop concepts of expressions and equations. The students is expected to:
	Readiness	5.4(C) generate a numerical pattern when given a rule in the form $y = ax$ or $y = x + a$ and graph 5.4(C) Resources to Support Blended Learning
	Supporting	5.4(D) recognize the difference between additive and multiplicative numerical patterns given in a table or graph
	Knowledge and Skills	5.9 Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:
	Supporting 	5.9(A) represent categorical data with bar graphs or frequency tables and numerical data, including data sets of measurements in fractions or decimals, with dot plots or stem-and-leaf plots



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	Supporting	5.9(B) represent discrete paired data on a scatterplot
	Readiness	5.9(C) solve one- and two-step problems using data from a frequency table, dot plot, bar graph, stem-and-leaf plot, or scatterplot 5.9(C) Resources to Support Blended Learning
	Knowledge and Skills	5.10 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	5.10(A) define income tax, payroll tax, sales tax, and property tax
	Supporting	5.10(B) explain the difference between gross income and net income
	Supporting	5.10(C) identify the advantages and disadvantages of different methods of payment, including check, credit card, debit card, and electronic payments
	Supporting	5.10(D) develop a system for keeping and using financial records
	Supporting	5.10(E) describe actions that might be taken to balance a budget when expenses exceed income
	Supporting	5.10(F) balance a simple budget

Cluster 5: After STAAR

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

Cluster 5: After STAAR Suggested Pacing: April 18 - May 20	Readiness Essential	5.3(L) divide whole numbers by unit fractions and unit fractions by whole numbers 5.3(L) Resources to Support Blended Learning
	Supporting	5.3(J) represent division of a unit fraction by a whole number and the division of a whole number by a unit fraction such as $\frac{1}{3} \div 7$ and $7 \div \frac{1}{3}$ using objects and pictorial models, including area models



STEM Activity



Coding Activity