

5th Grade-Math

First Quarter at a Glance 2016-2017

Week 1: Place Value

(G.M. Chapters 1)

Mathematical Practices(MP1-MP8) – Begin to set-up classroom and problem solving routines(ongoing)

5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

Week 2: Place Value: Patterns and Powers of 10

(G.M. Chapters 1)

Mathematical Practices(MP1-MP8) – Begin to set-up classroom and problem solving routines(ongoing)

5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

Week 3: Place Value: Patterns and Powers of 10

(G.M. Chapters 1 and 3)

5.NBT.A.1 . Recognize 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 and 1/10 of what it represents in the place to its left.

5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

5.OA.A.1 . Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols (continue as students work through expanded notation of place value)

Week 4: Place Value: Decimals to Thousandths Place

(G.M. Chapter 3)

5.NBT.A.1 . Recognize 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 and 1/10 of what it represents in the place to its left.

5.NBT.A.3a Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.

5.OA.A.1 . Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols (continue as students work through expanded notation of place value)

Week 5: Place Value: Comparing, Ordering, and Rounding Decimals

(G.M. Chapters 3)

5.NBT.A.3b Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

5.NBT.A.4 Use place value understanding to round decimals to any place.

Week 6: Adding and Subtracting Decimals

(G.M. Chapter 3)

5.NBT.B.7 Add, subtract, ~~multiply, and divide~~ decimals to hundredths.

5.NBT.B.7 Modeling--Use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Week 7: Adding and Subtracting Decimals

(G.M. Chapter 3)

5.NBT.B.7 Add, subtract, ~~multiply, and divide~~ decimals to hundredths.

5.NBT.B.7 Modeling--Use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Fluency Standards to be mastered by the 4th nine weeks

5.NBT.B.5 Fluently multiply multi-digit whole numbers using standard algorithm.

Week 8 Algebra: Expressions and Order of Operations (G.M. Chapter 1)

5.OA.A.1 . Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

5.OA.A.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.*

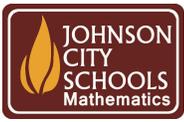
Week 9: Algebra: Expressions and Order of Operations (G.M. Chapter 1)

5.OA.A.1 . Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

5.OA.A.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.*

Fluency Standards to be mastered by the 4th nine weeks

5.NBT.B.5 Fluently multiply multi-digit whole numbers using standard algorithm.



Math-5th Grade
Second Quarter at a Glance 2016-2017

Week 1: Multiplication

(G.M. Chapter 1)

5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm. (by the end of 5th grade)

-start with open array, rectangular array and partial quotient models)

Week 2: Multiplication

(G.M. Chapter 1)

5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm. (by the end of 5th grade)

-introduce traditional U.S. algorithm make connections to prior strategies

Week 3: Division

(G.M. Chapter 1 and 2)

5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.

5.NBT.B.6 Modeling-- Use 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.

Week 4: Division

(G.M. Chapter 2)

5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.

5.NBT.B.6 Modeling-- Use 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.

Week 5: Division

(G.M. Chapter 2)

5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.

5.NBT.B.6 Modeling-- Use 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.

Week 6: Multiplying Decimals

(G.M. Chapter 4)

5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

5.NBT.B.7 ~~Add, subtract, multiply, and divide~~ decimals to hundredths.

5.NBT.B.7 Modeling--Use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Fluency Standards to be mastered by the 4th nine weeks

5.NBT.B.5 Fluently multiply multi-digit whole numbers using standard algorithm.

Week 7: Multiplying Decimals

(G.M. Chapter 4)

Thanksgiving

5.NBT.B.7 ~~Add, subtract, multiply, and divide~~ decimals to hundredths.

5.NBT.B.7 Modeling--Use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Week 8: Dividing Decimals

(G.M. Chapter 5)

5.NBT.B.7 ~~Add, subtract, multiply, and divide~~ decimals to hundredths.

5.NBT.B.7 Modeling--Use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Week 9: Dividing Decimals

(G.M. Chapter 5)

5.NBT.B.7 ~~Add, subtract, multiply, and divide~~ decimals to hundredths.

5.NBT.B.7 Modeling--Use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

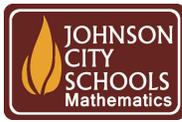
Week 10: Review All Four Operations with Decimals

5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths.

5.NBT.B.7 Modeling--Use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Fluency Standards to be mastered by the 4th nine weeks

5.NBT.B.5 Fluently multiply multi-digit whole numbers using standard algorithm.



Math-5th Grade
Third Quarter at a Glance 2016-2017

Week 1: Adding and Subtracting Fractions

(G.M. Chapter 6)

5.NF.A.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example $2/3 + 5/4 = 8/12 + 15/12 = 23/12$ (In general, $a/b + c/d = (ad + bc)/bd$).

5.NF.A.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators. (5.NF.A.2) Modeling- by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.

Week 2: Adding and Subtracting Fractions

(G.M. Chapter 6)

5.NF.A.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example $2/3 + 5/4 = 8/12 + 15/12 = 23/12$ (In general, $a/b + c/d = (ad + bc)/bd$).

5.NF.A.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators.(5.NF.A.2) Modeling- by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.

Week 3: Add and Subtract Fractions and Fractions as Division

(G.M. Chapter 6 and 7)

5.NF.A.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example $2/3 + 5/4 = 8/12 + 15/12 = 23/12$ (In general, $a/b + c/d = (ad + bc)/bd$).

5.NF.A.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators. (5.NF.A.2) Modeling- by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.

5.NF.B.4a Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation.

Week 4: Multiplying Fractions

(G.M. Chapter 7)

5.NF.B.4a Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation.

5.NF.B.4b Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangle, and represent fraction products as rectangular areas.

5.NF.B.5a Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing indicated multiplication

Fluency Standards to be mastered by the 4th nine weeks

5.NBT.B.5 Fluently multiply multi-digit whole numbers using standard algorithm.

Week 5: Multiplying Fractions

(G.M. Chapter 7)

5.NF.B.5a Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing indicated multiplication.

5.NF.B.5b Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.

5.NF.B.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

Week 6: Multiplying Fractions

(G.M. Chapter 7)

5.NF.B.5a, 5.NF.B.5b.

5.NF.B.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

Week 7: Dividing with Fractions

(G.M. Chapter 8)

5.NF.B.7a Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$.*

5.NF.B.7b . Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$*

5.NF.B.7c Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $1/3$ -cup servings are in 2 cups of raisins?*

Week 8: Dividing with Fractions

(G.M. Chapter 8)

5.NF.B.7a Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$.*

5.NF.B.7b . Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$*

5.NF.B.7c Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $1/3$ -cup servings are in 2 cups of raisins?*

Week 9: Data and Line Plots

(G.M. Chapter 9)

5. MD.B.2 Make a line plot to display a data set of measurements in fractions of a unit ($1/2, 1/4, 1/8$). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*

Week 10: Data and Line Plots

(G.M. Chapter 9)

5. MD.B.2 Make a line plot to display a data set of measurements in fractions of a unit ($1/2, 1/4, 1/8$). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*

Fluency Standards to be mastered by the 4th nine weeks

5.NBT.B.5 Fluently multiply multi-digit whole numbers using standard algorithm.



Math-5th Grade
Fourth Quarter at a Glance 2016-2017

Week 1: Algebra Patterns and Coordinate Grids

(G.M. Chapter 9)

5.G.A.1 . Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x -axis and x -coordinate, y -axis and y -coordinate).

5.G.B.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

5.OA.B.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.*

Week 2: 2-D Geometry

(G.M. Chapter 11)

5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. *For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.*

5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties.

Week 3: Volume

(G.M. Chapter 11)

5.MD.C.3a Recognize volume as an attribute of solid figures and understand concepts of volume measurement.

5.MD.C.3b A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.

5.MD.C.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.

5.MD.C.5a Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.

5.MD.C.5b Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.

Fluency Standards to be mastered by the 4th nine weeks

5.NBT.B.5 Fluently multiply multi-digit whole numbers using standard algorithm.

Week 4: Volume

(G.M. Chapter 11)

- 5.MD.C.3a Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
- 5.MD.C.3b A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
- 5.MD.C.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
- 5.MD.C.5a Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
- 5.MD.C.5b Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.
- 5.MD.C.5c Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

Week 5: Measurement Relationships

(G.M. Chapter 10)

- 5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these.
5. MD.B.2 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

Week 6: Measurement Relationships

(G.M. Chapter 10)

- 5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these.
5. MD.B.2 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

Week 7: Strengthen and Extend Major Work of the Grade

Also see Go Math Lessons- Getting Ready for 6th Grade

Multiplication and Division of whole numbers- work on standard algorithm of division using 2 digit divisor

Week 8: Strengthen and Extend Major Work of the Grade

Also see Go Math Lessons- Getting Ready for 6th Grade

Multiplication and Division of whole numbers- work on standard algorithm of division using 2 digit divisor

Week 9: Strengthen and Extend Major Work of the Grade

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Fluency Standards to be mastered by the 4th nine weeks

5.NBT.B.5 Fluently multiply multi-digit whole numbers using standard algorithm.