

Texas Essential Knowledge and Skills for Mathematics Correlation to Project M³ – Level 3/4

111.5. Grade 3

(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace;

(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;

(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;

(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;

(E) create and use representations to organize, record, and communicate mathematical ideas;

(F) analyze mathematical relationships to connect and communicate mathematical ideas; and

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

Each lesson addresses these standards through the following:

- In-depth investigations and games
- Questioning strategies, including who, what, when, where, why and how questions
- Oral and written mathematical communication and argumentation
 - Think Deeply questions
 - Talk moves
 - Math Messaging Board
- Multiple models on the concrete, pictorial, and abstract levels
- Differentiation
 - Hint Cards
 - Think Beyond questions
- Creative problem solving/problem posing heuristic

(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:

<p>(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;</p> <p>(B) describe the mathematical relationships found in the base-10 place value system through the hundred thousands place;</p> <p>(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; and</p> <p>(D) compare and order whole numbers up to 100,000 and represent comparisons using the symbols $>$, $<$, or $=$.</p>	<p>(A) Unraveling the Mystery of the Moli Stone: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3</p> <p>(A) How Big is Big? Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3</p> <p>(B) Unraveling the Mystery of the Moli Stone: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3; Chapter 3, Lesson 1; Chapter 3, Lesson 2; Chapter 4, Lesson 1; Chapter 4, Lesson 2</p> <p>(B) How Big is Big? Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3</p> <p>(C) How Big is Big? Chapter 1, Lesson 2; Chapter 1, Lesson 3</p> <p>(D) How Big is Big? Chapter 1, Lesson 2; Chapter 1, Lesson 3</p>
<p>(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:</p>	
<p>(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;</p> <p>(B) round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems;</p> <p>(C) determine the value of a collection of coins and bills;</p> <p>(D) determine the total number of objects when equally-sized groups of objects are combined or arranged in arrays up to 10 by 10;</p> <p>(E) represent multiplication facts by using a variety of</p>	<p>(A) Unraveling the Mystery of the Moli Stone: Chapter 1, Lesson 1; Chapter 1, Lesson 3; Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3</p> <p>(A) How Big is Big? Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 2, Lesson 1; Chapter 2, Lesson 3</p> <p>(A) Awesome Algebra: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 2, Lesson 3; Chapter 3, Lesson 1; Chapter 3, Lesson 2; Chapter 3, Lesson 3</p> <p>(A) Digging for Data: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3</p> <p>(A) In Search of the Yeti: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 2, Lesson 1;</p>

<p>approaches such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line, and skip counting;</p> <p>(F) recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts;</p> <p>(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;</p> <p>(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;</p> <p>(I) determine if a number is even or odd using divisibility rules;</p> <p>(J) determine a quotient using the relationship between multiplication and division; and</p> <p>(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.</p>	<p>Chapter 2, Lesson 2; Chapter 2, Lesson 3; Chapter 3, Lesson 1; Chapter 3, Lesson 2</p> <p>(B) Unraveling the Mystery of the Moli Stone: Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3</p> <p>(B) How Big is Big? Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 2, Lesson 3</p> <p>(B) Awesome Algebra: Chapter 3, Lesson 1; Chapter 3, Lesson 2; Chapter 3, Lesson 3</p> <p>(C) Unraveling the Mystery of the Moli Stone: Chapter 1, Lesson 1</p> <p>(D) Factors, Multiples and Leftovers: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 1, Lesson 4; Chapter 2, Lesson 4</p> <p>(D) Awesome Algebra: Chapter 1, Lesson 2</p> <p>(D) In Search of the Yeti: Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3</p> <p>(E) Factors, Multiples and Leftovers: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 1, Lesson 4; Chapter 2, Lesson 4</p> <p>(E) How Big is Big? Chapter 1, Lesson 3</p> <p>(E) Awesome Algebra: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 2, Lesson 1; Chapter 2, Lesson 2</p> <p>(E) Digging for Data: Chapter 1, Lesson 1; Chapter 1, Lesson 3</p> <p>(E) In Search of the Yeti: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3;</p>
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Chapter 3, Lesson 1; Chapter 3, Lesson 2

(F) Factors, Multiples and Leftovers:

Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3;
Chapter 1, Lesson 4; Chapter 2, Lesson 4

(F) How Big is Big?

Chapter 1, Lesson 3; Chapter 2, Lesson 2; Chapter 2, Lesson 3

(F) Awesome Algebra:

Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3;
Chapter 2, Lesson 1

(F) Digging for Data:

Chapter 1, Lesson 3

(F) In Search of the Yeti:

Chapter 1, Lesson 3; Chapter 2, Lesson 1; Chapter 2, Lesson 2;
Chapter 2, Lesson 3; Chapter 3, Lesson 1; Chapter 3, Lesson 2

(G) Factors, Multiples and Leftovers:

Chapter 1, Lesson 4; Chapter 2, Lesson 4

(G) How Big is Big?

Chapter 1, Lesson 3; Chapter 2, Lesson 2; Chapter 2, Lesson 3

(G) Awesome Algebra:

Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3

(G) Digging for Data:

Chapter 1, Lesson 3

(G) In Search of the Yeti:

Chapter 1, Lesson 3; Chapter 2, Lesson 1; Chapter 2, Lesson 2;
Chapter 2, Lesson 3; Chapter 3, Lesson 1; Chapter 3, Lesson 2

(H) Factors, Multiples and Leftovers:

Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3;
Chapter 2, Lesson 4

(H) How Big is Big?

Chapter 1, Lesson 3

(H) Awesome Algebra:
Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3

(I) Factors, Multiples and Leftovers:
Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3;
Chapter 2, Lesson 4

(I) Awesome Algebra:
Chapter 1, Lesson 1; Chapter 1, Lesson 3

(J) Factors, Multiples and Leftovers:
Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3;
Chapter 2, Lesson 4

(J) How Big is Big?
Chapter 1, Lesson 3; Chapter 2, Lesson 3

(J) Awesome Algebra:
Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3

(J) In Search of the Yeti:
Chapter 3, Lesson 1; Chapter 3, Lesson 2

(K) Factors, Multiples and Leftovers:
Chapter 1, Lesson 1; Chapter 2, Lesson 1; Chapter 2, Lesson 2;
Chapter 2, Lesson 3; Chapter 2, Lesson 4

(K) How Big is Big?
Chapter 1, Lesson 3; Chapter 2, Lesson 2; Chapter 2, Lesson 3

(K) Awesome Algebra:
Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3
Chapter 2, Lesson 1; Chapter 2, Lesson 3

(K) Digging for Data:
Chapter 1, Lesson 3

(K) In Search of the Yeti:
Chapter 1, Lesson 3; Chapter 2, Lesson 1; Chapter 2, Lesson 2;
Chapter 2, Lesson 3; Chapter 3, Lesson 1; Chapter 3, Lesson 2

(5) Algebraic reasoning. The student applies mathematical process standards to analyze and create patterns and relationships. The student is expected to:

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

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

(C) describe a multiplication expression as a comparison such as 3×24 represents 3 times as much as 24;

(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; and

(E) represent real-world relationships using number pairs in a table and verbal descriptions.

(A) Unraveling the Mystery of the Moli Stone:
Chapter 1, Lesson 1; Chapter 1, Lesson 3; Chapter 2, Lesson 1;
Chapter 2, Lesson 2; Chapter 2, Lesson 3

(A) How Big is Big?
Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 2, Lesson 1;
Chapter 2, Lesson 3

(A) Awesome Algebra:
Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3
Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3

(A) Digging for Data:
Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3

(A) In Search of the Yeti:
Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 2, Lesson 1;
Chapter 2, Lesson 2; Chapter 2, Lesson 3; Chapter 3, Lesson 1;
Chapter 3, Lesson 2

(B) Factors, Multiples and Leftovers:
Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3;
Chapter 1, Lesson 4; Chapter 2, Lesson 4

(B) How Big is Big?
Chapter 1, Lesson 3

(B) Awesome Algebra:
Chapter 1, Lesson 2; Chapter 2, Lesson 1; Chapter 2, Lesson 3

(B) In Search of the Yeti:
Chapter 1, Lesson 3; Chapter 2, Lesson 1; Chapter 2, Lesson 2;
Chapter 2, Lesson 3; Chapter 3, Lesson 1; Chapter 3, Lesson 2

(C) Factors, Multiples and Leftovers:
Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3;
Chapter 1, Lesson 4; Chapter 2, Lesson 4

(C) How Big is Big?
Chapter 1, Lesson 3; Chapter 2, Lesson 2; Chapter 2, Lesson 3

	<p>(C) Awesome Algebra: Chapter 1, Lesson 2</p> <p>(C) Digging for Data: Chapter 1, Lesson 3</p> <p>(C) In Search of the Yeti: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3; Chapter 3, Lesson 1; Chapter 3, Lesson 2</p> <p>(D) How Big is Big? Chapter 1, Lesson 3</p> <p>(D) Awesome Algebra: Chapter 1, Lesson 1; Chapter 1, Lesson 2</p> <p>(D) In Search of the Yeti: Chapter 3, Lesson 1; Chapter 3, Lesson 2</p> <p>(E) Awesome Algebra: Chapter 1, Lesson 1; Chapter 1, Lesson 2</p> <p>(E) In Search of the Yeti: Chapter 3, Lesson 1; Chapter 3, Lesson 2</p>
<p>(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:</p>	
<p>(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;</p> <p>(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;</p> <p>(C) determine the area of rectangles with whole number</p>	<p>(C) Factors, Multiples and Leftovers: Chapter 1, Lesson 4; Chapter 1, Lesson 1</p> <p>(C) Awesome Algebra: Chapter 1, Lesson 2</p> <p>(C) In Search of the Yeti: Chapter 1, Lesson 3; Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3</p> <p>(D) Factors, Multiples and Leftovers: Chapter 1, Lesson 4</p>

<p>side lengths in problems using multiplication related to the number of rows times the number of unit squares in each row;</p> <p>(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; and</p> <p>(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.</p>	<p>(D) In Search of the Yeti: Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3</p>
<p>(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:</p>	
<p>(A) represent fractions of halves, fourths, and eighths as distances from zero on a number line;</p> <p>(B) determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems;</p> <p>(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;</p> <p>(D) determine when it is appropriate to use measurements of liquid volume (capacity) or weight; and</p> <p>(E) determine liquid volume (capacity) or weight using appropriate units and tools.</p>	<p>(B) Awesome Algebra: Chapter 1, Lesson 2</p> <p>(B) In Search of the Yeti: Chapter 1, Lesson 3</p> <p>(D) In Search of the Yeti: Chapter 3, Lesson 1; Chapter 3, Lesson 2</p> <p>(E) In Search of the Yeti: Chapter 3, Lesson 1; Chapter 3, Lesson 2</p>

(8) Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:

(A) summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals; and

(B) solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals.

(A) Digging for Data:
Chapter 1, Lesson 2; Chapter 1, Lesson 3

(B) Digging for Data:
Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3

111.6. Grade 4

(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace;

(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;

(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;

(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;

(E) create and use representations to organize, record, and communicate mathematical ideas;

(F) analyze mathematical relationships to connect and communicate mathematical ideas; and

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

Each lesson addresses these standards through the following:

- In-depth investigations and games
- Questioning strategies, including who, what, when, where, why and how questions
- Oral and written mathematical communication and argumentation
 - Think Deeply questions
 - Talk moves
 - Math Messaging Board
- Multiple models on the concrete, pictorial, and abstract levels
- Differentiation
 - Hint Cards
 - Think Beyond questions
- Creative problem solving/problem posing heuristic

(2) Number and operations. The student applies mathematical process standards to represent, compare, and order whole numbers and decimals and understand relationships related to place value. The student is expected to:

(A) interpret the value of each place-value position as 10 times the position to the right and as one-tenth of the value

(A) Unraveling the Mystery of the Moli Stone:
Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3;
Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3;

<p>of the place to its left;</p> <p>(B) represent the value of the digit in whole numbers through 1,000,000,000 and decimals to the hundredths using expanded notation and numerals;</p> <p>(C) compare and order whole numbers to 1,000,000,000 and represent comparisons using the symbols $>$, $<$, or $=$;</p> <p>(D) round whole numbers to a given place value through the hundred thousands place;</p> <p>(E) represent decimals, including tenths and hundredths, using concrete and visual models and money;</p> <p>(F) compare and order decimals using concrete and visual models to the hundredths;</p> <p>(G) relate decimals to fractions that name tenths and hundredths; and</p> <p>(H) determine the corresponding decimal to the tenths or hundredths place of a specified point on a number line.</p>	<p>Chapter 4, Lesson 1; Chapter 4, Lesson 2</p> <p>(A) How Big is Big? Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3</p> <p>(C) How Big is Big? Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3</p> <p>(D) How Big is Big? Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3</p>
<p>(4) Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations and decimal sums and differences in order to solve problems with efficiency and accuracy. The student is expected to:</p>	
<p>(A) add and subtract whole numbers and decimals to the hundredths place using the standard algorithm;</p> <p>(B) determine products of a number and 10 or 100 using properties of operations and place value understandings;</p> <p>(C) represent the product of 2 two-digit numbers using arrays, area models, or equations, including perfect squares through 15 by 15;</p>	<p>(A) How Big is Big? Chapter 2, Lesson 1; Chapter 2, Lesson 3</p> <p>(B) Unraveling the Mystery of the Moli Stone: Chapter 3, Lesson 3</p> <p>(B) Factors, Multiples and Leftovers: Chapter 1, Lesson 1; Chapter 1, Lesson 4; Chapter 2, Lesson 4</p> <p>(B) How Big is Big? Chapter 2, Lesson 2; Chapter 2, Lesson 3</p>

<p>(D) use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;</p>	<p>(B) Awesome Algebra: Chapter 1, Lesson 1; Chapter 2, Lesson 1</p>
<p>(E) represent the quotient of up to a four-digit whole number divided by a one-digit whole number using arrays, area models, or equations;</p>	<p>(B) In Search of the Yeti: Chapter 1, Lesson 3</p>
<p>(F) use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor;</p>	<p>(C) Factors, Multiples and Leftovers: Chapter 1, Lesson 4; Chapter 2, Lesson 4</p>
<p>(G) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers; and</p>	<p>(C) How Big is Big? Chapter 2, Lesson 2; Chapter 2, Lesson 3</p>
<p>(H) solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders.</p>	<p>(C) Digging for Data: Chapter 1, Lesson 2; Chapter 1, Lesson 3</p>
	<p>(C) In Search of the Yeti: Chapter 1, Lesson 3; Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3; Chapter 3, Lesson 1; Chapter 3, Lesson 2</p>
	<p>(D) Factors, Multiples and Leftovers: Chapter 1, Lesson 4</p>
	<p>(D) How Big is Big? Chapter 1, Lesson 3; Chapter 2, Lesson 2; Chapter 2, Lesson 3</p>
	<p>(D) In Search of the Yeti: Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3; Chapter 3, Lesson 1; Chapter 3, Lesson 2</p>
	<p>(E) How Big is Big? Chapter 1, Lesson 3</p>
	<p>(F) How Big is Big? Chapter 1, Lesson 3; Chapter 2, Lesson 3</p>
	<p>(F) In Search of the Yeti: Chapter 3, Lesson 1; Chapter 3, Lesson 2</p>
	<p>(G) How Big is Big? Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 2, Lesson 3</p>

	<p>(G) In Search of the Yeti: Chapter 2, Lesson 1; Chapter 2, Lesson 3</p> <p>(H) Factors, Multiples and Leftovers: Chapter 2, Lesson 3; Chapter 2, Lesson 4</p> <p>(H) How Big is Big? Chapter 1, Lesson 3; Chapter 2, Lesson 2; Chapter 2, Lesson 3</p> <p>(H) Awesome Algebra: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3</p> <p>(H) Digging for Data: Chapter 1, Lesson 2; Chapter 1, Lesson 3</p> <p>(H) In Search of the Yeti: Chapter 1, Lesson 3; Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3; Chapter 3, Lesson 1; Chapter 3, Lesson 2</p>
<p>(5) Algebraic reasoning. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:</p>	
<p>(A) represent multi-step problems involving the four operations with whole numbers using strip diagrams and equations with a letter standing for the unknown quantity;</p> <p>(B) represent problems using an input-output table and numerical expressions to generate a number pattern that follows a given rule representing the relationship of the values in the resulting sequence and their position in the sequence;</p> <p>(C) use models to determine the formulas for the perimeter of a rectangle ($l + w + l + w$ or $2l + 2w$), including the special form for perimeter of a square ($4s$) and the area of a rectangle ($l \times w$); and</p> <p>(D) solve problems related to perimeter and area of rectangles where dimensions are whole numbers.</p>	<p>(A) Awesome Algebra: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3</p> <p>(B) Awesome Algebra: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3</p> <p>(C) Awesome Algebra: Chapter 1, Lesson 2</p> <p>(C) In Search of the Yeti: Chapter 1, Lesson 3</p> <p>(D) Awesome Algebra: Chapter 1, Lesson 2</p> <p>(D) In Search of the Yeti: Chapter 1, Lesson 3; Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3</p>

<p>(8) Geometry and measurement. The student applies mathematical process standards to select appropriate customary and metric units, strategies, and tools to solve problems involving measurement. The student is expected to:</p>	
<p>(A) identify relative sizes of measurement units within the customary and metric systems;</p> <p>(B) convert measurements within the same measurement system, customary or metric, from a smaller unit into a larger unit or a larger unit into a smaller unit when given other equivalent measures represented in a table; and</p> <p>(C) solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate.</p>	<p>(A) In Search of the Yeti: Chapter 3, Lesson 1; Chapter 3, Lesson 2</p> <p>(B) In Search of the Yeti: Chapter 3, Lesson 1; Chapter 3, Lesson 2</p> <p>(C) In Search of the Yeti: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 3, Lesson 1; Chapter 3, Lesson 2</p>
<p>(9) Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:</p>	
<p>(A) represent data on a frequency table, dot plot, or stem-and-leaf plot marked with whole numbers and fractions; and</p> <p>(B) solve one- and two-step problems using data in whole number, decimal, and fraction form in a frequency table, dot plot, or stem-and-leaf plot.</p>	<p>(A) Digging for Data: Chapter 1, Lesson 2; Chapter 1, Lesson 3</p> <p>(B) Digging for Data: Chapter 1, Lesson 2; Chapter 1, Lesson 3</p>

111.7. Grade 5

(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

- (A) apply mathematics to problems arising in everyday life, society, and the workplace;
- (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;
- (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;
- (D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;
- (E) create and use representations to organize, record, and communicate mathematical ideas;
- (F) analyze mathematical relationships to connect and communicate mathematical ideas; and
- (G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

Each lesson addresses these standards through the following:

- In-depth investigations and games
- Questioning strategies, including who, what, when, where, why and how questions
- Oral and written mathematical communication and argumentation
 - Think Deeply questions
 - Talk moves
 - Math Messaging Board
- Multiple models on the concrete, pictorial, and abstract levels
- Differentiation
 - Hint Cards
 - Think Beyond questions
- Creative problem solving/problem posing heuristic

(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:

- (A) estimate to determine solutions to mathematical and real-world problems involving addition, subtraction,

(A) Unraveling the Mystery of the Moli Stone:
Chapter 1, Lesson 3

<p>multiplication, or division;</p> <p>(B) multiply with fluency a three-digit number by a two-digit number using the standard algorithm;</p> <p>(C) solve with proficiency for quotients of up to a four-digit dividend by a two-digit divisor using strategies and the standard algorithm;</p> <p>(D) represent multiplication of decimals with products to the hundredths using objects and pictorial models, including area models;</p> <p>(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;</p> <p>(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;</p> <p>(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;</p> <p>(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;</p> <p>(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;</p>	<p>(A) Factors, Multiples and Leftovers: Chapter 1, Lesson 4; Chapter 2, Lesson 4</p> <p>(A) How Big is Big? Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3</p> <p>(A) Awesome Algebra: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 2, Lesson 1; Chapter 2, Lesson 2; Chapter 2, Lesson 3 Chapter 3, Lesson 1; Chapter 3, Lesson 2</p> <p>(A) Digging for Data: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3</p> <p>(A) In Search of the Yeti: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 3, Lesson 1; Chapter 3, Lesson 2</p> <p>(B) How Big is Big? Chapter 2, Lesson 2; Chapter 2, Lesson 3</p> <p>(B) In Search of the Yeti: Chapter 3, Lesson 1; Chapter 3, Lesson 2</p> <p>(C) How Big is Big? Chapter 2, Lesson 3</p> <p>(C) In Search of the Yeti: Chapter 3, Lesson 1; Chapter 3, Lesson 2</p>
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<p>(J) represent division of a unit fraction by a whole number and the division of a whole number by a unit fraction such as $1/3 \div 7$ and $7 \div 1/3$ using objects and pictorial models, including area models;</p> <p>(K) add and subtract positive rational numbers fluently; and</p> <p>(L) divide whole numbers by unit fractions and unit fractions by whole numbers.</p>	
<p>(4) Algebraic reasoning. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:</p>	
<p>(A) identify prime and composite numbers;</p> <p>(B) represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity;</p> <p>(C) generate a numerical pattern when given a rule in the form $y = ax$ or $y = x + a$ and graph;</p> <p>(D) recognize the difference between additive and multiplicative numerical patterns given in a table or graph;</p> <p>(E) describe the meaning of parentheses and brackets in a numeric expression;</p> <p>(F) simplify numerical expressions that do not involve exponents, including up to two levels of grouping;</p> <p>(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 $V = Bh$); and</p>	<p>(A) Factors, Multiples and Leftovers: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 1, Lesson 4; Chapter 2, Lesson 4</p> <p>(C) Awesome Algebra: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3</p> <p>(D) Awesome Algebra: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 2, Lesson 1</p> <p>(E) Factors, Multiples and Leftovers: Chapter 1, Lesson 4; Chapter 2, Lesson 4</p> <p>(E) Awesome Algebra: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3; Chapter 3, Lesson 1; Chapter 3, Lesson 2; Chapter 3, Lesson 3</p> <p>(E) In Search of the Yeti: Chapter 2, Lesson 2; Chapter 2, Lesson 3</p> <p>(F) In Search of the Yeti: Chapter 2, Lesson 2; Chapter 2, Lesson 3</p> <p>(H) Awesome Algebra: Chapter 1, Lesson 2</p>

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<p>(H) represent and solve problems related to perimeter and/or area and related to volume.</p>	
<p>(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 solve problems by calculating conversions within a measurement system, customary or metric.</p>	
	<p>In Search of the Yeti: Chapter 1, Lesson 1; Chapter 1, Lesson 2; Chapter 1, Lesson 3 Chapter 3, Lesson 1; Chapter 3, Lesson 2</p>
<p>(9) Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:</p>	
<p>(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;</p> <p>(B) represent discrete paired data on a scatterplot; and</p> <p>(C) solve one- and two-step problems using data from a frequency table, dot plot, bar graph, stem-and-leaf plot, or scatterplot.</p>	<p>(C) Digging for Data: Chapter 1, Lesson 2; Chapter 1, Lesson 3</p>