

3rd Grade Texas Mathematics: Unpacked Content

What is the purpose of this document?

To increase student achievement by ensuring educators understand specifically what the new standards mean a student must know, understand and be able to do. This document may also be used to facilitate discussion among teachers and curriculum staff and to encourage coherence in the sequence, pacing, and units of study for grade-level curricula. This document, along with on-going professional development, is one of many resources used to understand and teach the new math standards.

What is in the document?

Descriptions of what each standard means a student will know, understand, and be able to do. The “unpacking” of the standards done in this document is an effort to answer a simple question “What does this standard mean that a student must know and be able to do?” and to ensure the description is helpful, specific and comprehensive for educators.

At A Glance:

New to 3rd Grade:

- Understanding base 10 system.
- Place value to 100,000 rather than 9,999
- Focus on use of number line
- In Fractions denominators are specified as 2, 3, 4, 6, and 8.
- Benchmarking of Fractional parts. Strip diagram and number line
- Equivalent Fractions on number lines
- Specify reasoning strategies for comparing fractions with same numerator or same denominator
- Properties of operations (Commutative, Associative, Distributive)
- Arrays and area models in multiplication
- Multiple strategies for multiplication and division including number lines, partial products
- 10 by 10 multiplication without concrete models
- Odd/Even – Divisibility rule for 2
- Determine unknown whole number in multiplication and/or division equation.
- Area is limited to rectangles
- Array area model relates to multiplication
- Decompose composite figures formed by rectangles to find area
- Find missing length in perimeter
- Perimeter specifies polygons
- Adding and subtracting time intervals
- Dot Plots, frequency table, and scaled intervals
- Solving problems using data with frequency tables and dot plots
- Personal Finance Literacy

Vocabulary

- Expanded Notation
- Partitioning
- Unit fraction
- Strip diagrams
- Compose and decompose fractions
- Focus on properties of operations (distributive, associative, commutative etc.)
- Expression
- Equation
- Algorithm
- Consecutive multiples
- Area model
- Polygon
- Composite figures
- Additive property of area
- Dot plots, frequency tables, scaled intervals

Moved from 3rd Grade:

- Temperature
- Multiplication/Division Facts of 11 and 12
- Geometric Patterns
- Symmetry
- Linear Measurement
- Read and write time to the nearest one minute increment
- Probability

Instructional Implications for 2013-14:

- Emphasis on vocabulary and helping students understand the terms. Many of the terms are going to be new to the students.
- Multiplication focus. There is more automaticity and less of the concrete model. Students can no longer just do multiplication with arrays. They need to be able to do it automatically.
- Data analysis is considerably different. This will require more time and focus in the curriculum.
- There is a larger focus on algorithms and manipulating the algorithms in order to solve for the unknown.
- Number lines and strip diagrams are going to need to become common-place (use and creation)
- The meaning of the base 10-system will need to be directly taught and explored.

Professional Learning Implications for 2013-14:

- Use of number lines, strip diagrams and manipulatives. Creation of number lines to use with a given set of numbers.
- Work on manipulating the algorithms for the understanding the concepts.
- The teachers will need to understand the various properties of algorithms and how to manipulate them in order to solve for the unknown.
- Process standards are embedded all through instruction.
- Teachers will need to identify the gaps that will need to be addressed in the 2013-14 school year.
- PD and resources regarding Personal Financial Literacy
- Initial learning of the teachers' grade level TEKS (teachers unpacking the TEKS at their grade level)
- Vertical study of the strands to know how the TEKS align and progress from 2nd – 4th grade.
- Identify academic vocabulary

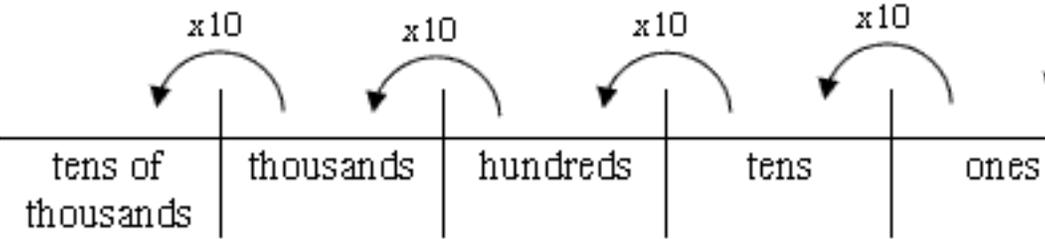
Grade 3 Primary Focal Areas:

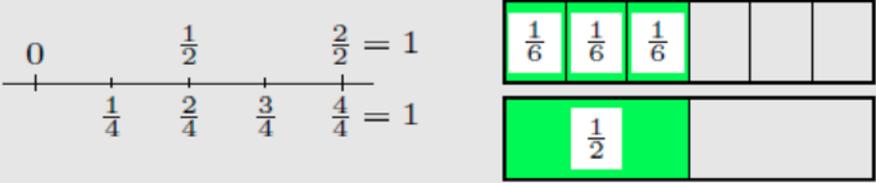
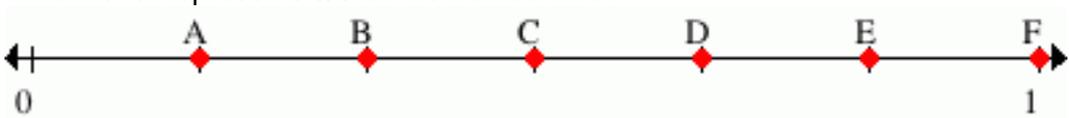
The Primary Focal Areas are designed to bring focus to the standards at each grade by describing the big ideas that educators can use to build their curriculum and to guide instruction.

Place value, operations of whole numbers, and understanding fractional units. The number set is limited to positive rational numbers. Apply place value, comparing and ordering whole numbers, connecting multiplication and division, and understanding and representing fractions as numbers and equivalent fractions. Use multiple representations of problem situations, determine missing values in number sentences, and represent real-world relationships using number pairs in a table and verbal descriptions. Identify and classify two-dimensional figures according to common attributes, decompose composite figures formed by rectangles to determine area, determine the perimeter of polygons, solve problems involving time, and measure liquid volume or weight. Represent and interpret data.

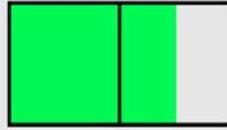
Mathematical process standards.

- (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

Number and Operations: TEK 3.2	The student applies mathematical process standards to represent and compare whole numbers understand relationships related to place value.
<p>3.2(A) Compose and decompose numbers up to 100,000 as a sum of so many 10,000s, so many 1,000s, so many 100s, so many 10s and so many 1s using objects, pictorial models and numbers including expanded notation</p>	<p>Student understands and can demonstrate the value of a digit in a number and use that to build and take apart numbers. Write numbers in expanded notation. Collapse and expand a number. Explain that numbers are sums of values of the digit in their respective place value.</p> <p>35,678 is the same as $30,000 + 5,000 + 600 + 70 + 8$ and $30,000 + 5,000 + 600 + 70 + 8$ is the same as 35,678</p>
<p>3.2(B) Describe the mathematical relationship found in the base 10 place value system through the 100,000s place</p>	<p>Students have to describe that 100 is ten 10s and that 1000 is ten hundreds up to 100,000</p> 
<p>3.2(C) Represent 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.</p>	<p>Student will have an understanding of the number line in order to identify the approximate position of the number (Ballpark Estimate). Students can manipulate number lines with consecutive multiples and place numbers based on those intervals.</p>
<p>3.2(D) Compare and order whole numbers up to 100,000 and represent comparisons using the symbols < and ></p>	<p>Students can order number and compare using greater than and less than vocabulary.</p> <p>Order the following numbers from Greatest to Least</p> <p>756 _____ 765</p>

<p>Numbers and Operations: TEK 3.3</p>	<p>The student applies mathematical process standards to represent and explain fractional units.</p>
<p>3.3(A) Represent fractions greater than zero and less than or equal to 1 with denominators of 2, 3, 4, 6, and 8, using concrete objects and pictorial models including strip diagrams and number lines.</p>	<p>Students can write fractions based on a concrete and pictorial model. Students use strip diagrams and number lines to write fractions using the fractions symbols.</p> <p>What is the fraction represented in the following picture?</p> <div data-bbox="606 345 1560 659" style="border: 1px solid gray; padding: 10px;"> <p style="text-align: center;">Using the number line and fraction strips to see fraction equivalence</p>  </div>
<p>3.3(B) Determine the corresponding fraction greater than zero and less than or equal to 1 with denominators of 2, 3, 4, 6, and 8 given as a specified point on a number line.</p>	<p>Students will locate points on a number line that represent fractions less than 1.</p> <p>Which letter represents $\frac{3}{6}$ on the number line?</p> 
<p>3.3(C) Explain that the unit fraction $\frac{1}{b}$ 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</p>	<p>Understand that $\frac{1}{4}$ is the unit fraction of 4. Understand that the denominator tells you the parts of the whole and that the unit fraction is one part of that whole. Students understand parts and wholes and equal partitioning of fractions.</p> <p>Unit fraction and partitioning are new vocabulary that students must understand.</p>

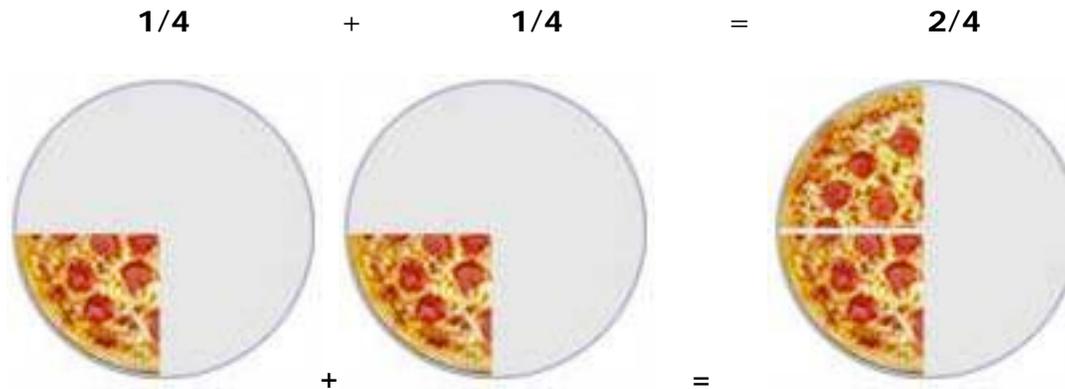
The importance of specifying the whole



Without specifying the whole it is not reasonable to ask what fraction is represented by the shaded area. If the left square is the whole, the shaded area represents the fraction $\frac{3}{2}$; if the entire rectangle is the whole, the shaded area represents $\frac{3}{4}$.

3.3(D) Compose and decompose a fraction a/b with a numerator greater than zero and less than or equal to b as sum of parts $1/b$

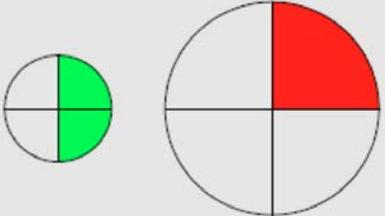
Students can identify that $2/4$ is $1/4$ plus $1/4$. They understand that the numerator is a sum of all the equal parts. Use the unit fraction to create the other fractions.

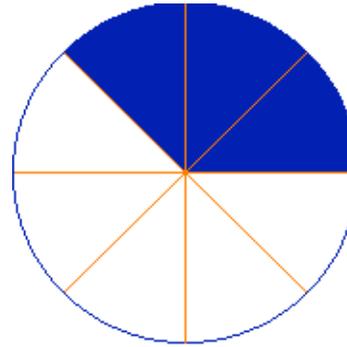
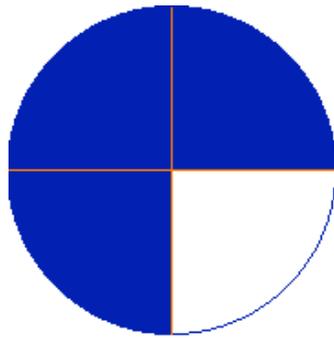


3.3(E) Solve problems involving partitioning an object or a set of objects among two or more recipients using pictorial representations of fractions with the denominators of 2, 3, 4, 6, and 8

Students apply fraction knowledge to solve problems involving partitioning objects or a set of objects.

Emily answered 2 questions correct on a test that had 3 questions. What fraction of the questions did she answer correctly?

<p>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.</p>	<p>Students must be able to create a fraction that is equivalent to another fraction in concrete and pictorial numbers and number lines. Students should use many objects for finding equivalent fractions.</p> <p>Stephanie is making a cake and needs to add $\frac{1}{2}$ a cup of flour. She only has a $\frac{1}{4}$ measuring cup. How many $\frac{1}{4}$ are in a half?</p>
<p>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.</p>	<p>Students must recognize that comparisons are valid only when the two fractions refer to the same whole.</p> <p>For example half is a half, but the fractions are only equivalent if the objects are the same size. Half of one object might be a whole of another object.</p> <p>Students can explain finding the points on the number line and that different fractions appearing on the same point are equivalent.</p> <p>Master Rulers as a tool for finding equivalent fractions in measurement.</p> <div data-bbox="611 643 1440 1036" data-label="Image"> <p>The importance of referring to the same whole when comparing fractions</p>  <p>A student might think that $\frac{1}{4} > \frac{1}{2}$, because a fourth of the pizza on the right is bigger than a half of the pizza on the left.</p> </div>
<p>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 model.</p>	<p>Students develop the number sense of knowing the importance of numerators and denominators in fractions. Students must know that fractions are different sizes and be able to justify why one fraction is greater than or less than another based on the number sense and understanding of the partitioning of the whole.</p> <p>Explain why $\frac{3}{4}$ is greater than $\frac{3}{8}$ based on the number of parts of a whole.</p>



**Number and operations:
TEK 3.4**

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.

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

Students must solve problems accurately and efficiently using an appropriate amount of time. Students should be flexible with their problem solving by applying properties of operations.

Example:

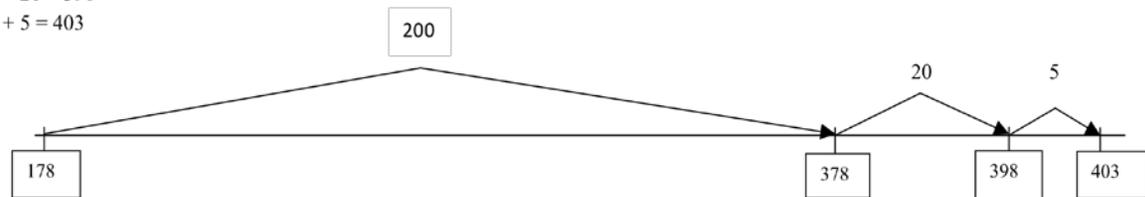
There are 178 fourth graders and 225 fifth graders on the playground. What is the total number of students on the playground?

Student 1
 $100 + 200 = 300$
 $70 + 20 = 90$
 $8 + 5 = 13$
 $300 + 90 + 13 = 403$ students

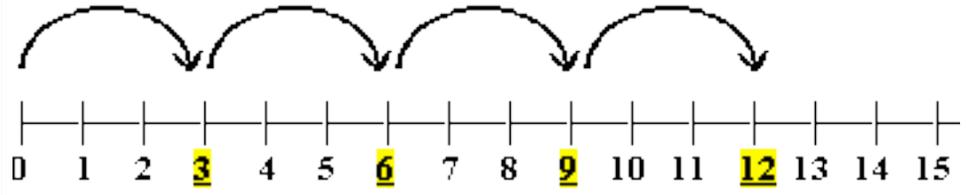
Student 2
 I added 2 to 178 to get 180. I added 220 to get 400. I added the 3 left over to get 403.

Student 3
 I know the 75 plus 25 equals 100. I then added 1 hundred from 178 and 2 hundreds from 225. I had a total of 4 hundreds and I had 3 more left to add. So I have 4 hundreds plus 3 more which is 403.

Student 4
 $178 + 225 = ?$
 $178 + 200 = 378$
 $378 + 20 = 398$
 $398 + 5 = 403$



<p>3.4(B) Round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems</p>	<p>Students need to understand when to round and when to use compatible numbers. This includes: Apply rounding principles to estimate solutions to problems. Round the parts of the problem and then solve instead of solving and then rounding the sum or difference.</p> <p>Compatible Numbers: $234 + 136$ changes to $235 + 135$</p> <p>Rounding Numbers: $289 + 79$ rounds to $290 + 80$ or $300 + 100$ or $300 + 80$</p>																
<p>3.4(C) Determine the value of a collection of coins and bills</p>	<p>Students must find the value of coins and bills and add the coins and bills together to find the value of the collection. They must apply this skill to word problems and not just in pictorial models.</p>																
<p>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</p>	<p>Students must use repeated addition to find the total objects represented in equally sized groups. They must arrange groups in arrays to develop the meaning of multiplication.</p> <p>4 X 3 can be represented as follows: 3+3+3+3</p> <table border="1" data-bbox="611 737 827 878"> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </table>																
<p>3.4(E) Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-size groups, arrays, area models, equal jumps on a number line and skip counting</p>	<p>Students must apply multiplication in multiple scenarios and not just in a single familiar scenario. There needs to be a bigger emphasis on using the number line as a model for multiplication.</p> <table border="1" data-bbox="611 1040 1381 1094"> <tr> <td>o o o</td> <td>o o o</td> <td>o o o</td> <td>o o o</td> </tr> </table> <table border="1" data-bbox="611 1133 827 1274"> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </table> <p>3+3+3+3</p>	o o o	o o o	o o o	o o o												
o o o	o o o	o o o	o o o														



3.4(F) Recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts

Students need to know the facts. They must connect the multiplication with division.

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.

Students must use multiple strategies to multiply up to two-digit by one-digit problems, including the standard algorithm. In order to use partial products students must understand expanded notation.

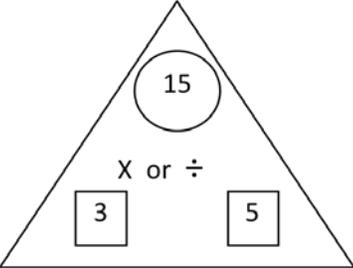
- $0 \times 7 = 7 \times 0 = 0$ (Zero Property of Multiplication)
- $1 \times 9 = 9 \times 1 = 9$ (Multiplicative Identity Property of 1)
- $3 \times 6 = 6 \times 3$ (Commutative Property)

Example of Distributive Property

Student 1	Student 2	Student 3
7×6	7×6	7×6
$7 \times 5 = 35$	$7 \times 3 = 21$	$5 \times 6 = 30$
$7 \times 1 = 7$	$7 \times 3 = 21$	$2 \times 6 = 12$
$35 + 7 = 42$	$21 + 21 = 42$	$30 + 12 = 42$

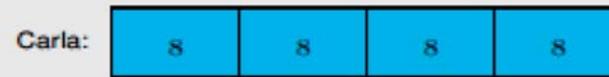
3.4(H) Determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally

Student will understand division as partitioning into equal groups. Grouping and fair sharing is the focus. Students have to understand the meaning of division and develop their own models, not just apply a model.

<p>3.4(I) Determine if a number is even or odd using divisibility rules.</p>	<p>Students must understand partitioning a number into 2 equal groups. This will lead to the understanding of the divisibility rule for 2.</p>
<p>3.4(J) Determine a quotient using the relationship between multiplication and division</p>	<p>Students must understand the relationship between multiplication and division - the fact family relationship. Understanding of the triangular flash card will aid in this process.</p> 
<p>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</p>	<p>Students must apply multiplication and division knowledge into problem solving situations. Students must use mathematical process standards with automaticity. This includes understanding the problem, using various skills and strategies, and choosing the most efficient strategy to solve the problem.</p>
<p>Algebraic Reasoning: TEK 3.5</p>	<p>The student applies mathematical process standards to analyze and create patterns and relationships.</p>
<p>3.5(A) Represent and solve one- and two-step problems involving addition and subtraction of whole numbers to a thousand using pictorial models, number lines, and equations</p>	<p>Students must apply addition and subtraction knowledge into problem solving situations. Students must use mathematical process standards with automaticity. This includes understanding the problem, using various skills and strategies, and choosing the most efficient strategy to represent and solve the problem.</p>

A two-step problem with diagram showing problem situation and equations showing the two parts

Carla has 4 packages of silly bands. Each package has 8 silly bands in it. Agustin is supposed to get 15 fewer silly bands than Carla. How many silly bands should Agustin get?



C = number of Carla's silly bands
 A = number of Agustin's silly bands

$$C = 4 \times 8 = 32$$

$$A + 15 = C$$

$$A + 15 = 32$$

$$A = 17$$

Students may be able to solve this problem without writing such equations.

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

Students must demonstrate and represent multiplication and division situations. They must be able to take an abstract multiplication or division problem and relate it to a concrete representation of the problem.

	<p>A two-step problem with diagram showing problem situation and equations showing the two parts</p> <p>Carla has 4 packages of silly bands. Each package has 8 silly bands in it. Agustin is supposed to get 15 fewer silly bands than Carla. How many silly bands should Agustin get?</p> <p>Carla: </p> <p>Agustin: </p> <p>C = number of Carla's silly bands A = number of Agustin's silly bands</p> $C = 4 \times 8 = 32$ $A + 15 = C$ $A + 15 = 32$ $A = 17$ <p><i>Students may be able to solve this problem without writing such equations.</i></p>
<p>3.5(C) Describe a multiplication expression as a comparison such as 3×24 represents 3 times as much as 24</p>	<p>Students need to understand and apply the multiplication expressions like twice and ___ times as much. They must relate language to multiplication situations and apply multiplication in everyday situations.</p>
<p>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.</p>	<p>Students must understand the Fact Families and the reciprocal relationship between multiplication and division. Students must be able to apply operation properties to solving for a missing number.</p> $72 \div \underline{\quad} = 9$
<p>3.5(E) Represent real-world relationships using number pairs in a table and verbal descriptions</p>	<p>Students need a deep understand of function tables. They will need to categorize and create subsets of information from a given table. They must take an abstract description of a situation and create a concrete model of what the situation is representing.</p>

- 6 The table below shows the price of student notebooks at a school store. Each notebook sells for the same price.

NOTEBOOK PRICES

Number of Notebooks	Price (in dollars)
2	6
4	12
6	18
8	24
9	?

According to the relationship shown in the table, what would be the price, in dollars, of 9 notebooks?

**Geometry and Measurement:
TEK 3.6**

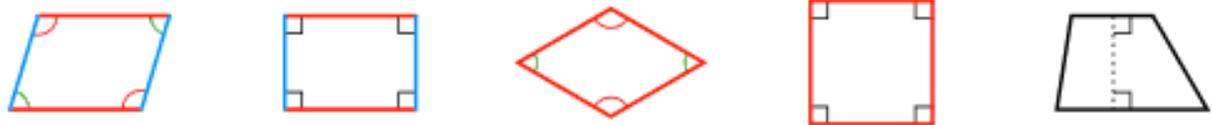
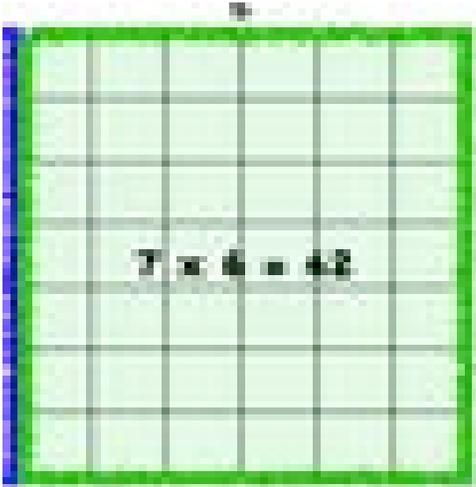
The student applies mathematical process standards to analyze attributes of two-dimensional geometric figures to develop generalizations about their properties.

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

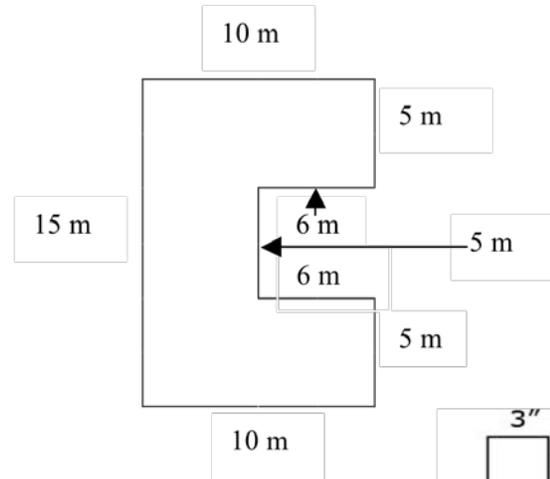
Students must understand the attributes of the figures and solids and then apply that understanding to sort and classify the shapes based on those attributes. Some examples of formal geometric language include: edges, vertices, faces, sides, number of angles.

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

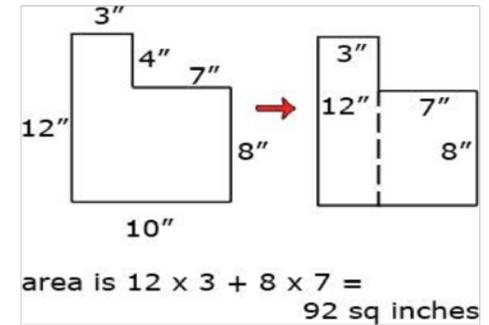
Students must know examples and non-examples of the different quadrilaterals. They must be able to represent them in pictorial form.

	 <p> Parallelogram Rectangle Rhombus Square Trapezoid (US) Trapezium (UK) </p>
<p>3.6(C) Determine the area of rectangles with whole-number side lengths in problems using multiplication related to the number of rows and the number of unit squares in each row.</p>	<p>Students must apply principles of multiplication in arrays to area models. This will include: Use multiplication to find area of an object without the use of an equation. Use repeated addition as a strategy to solve area.</p> 
<p>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</p>	<p>Students will segment figures into smaller rectangles, find the area of each rectangle, and add to find the sum of all the rectangles together to solve for the area of the entire shape. Students must first understand area and the decomposition of composite figures. They must also understand the attributes of a rectangle to locate the composite figures.</p>

Example:
 A storage shed is pictured below. What is the total area?
 How could the figure be decomposed to help find the area?



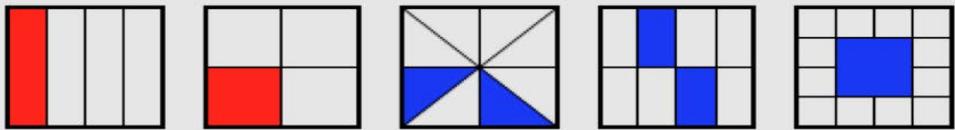
Example:
 Students can decompose a rectilinear figure into different rectangles. They find the area of the figure by adding the areas of each of the rectangles together.



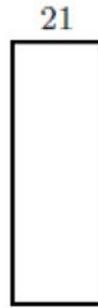
3.6(E) Decompose two congruent two-dimensional figures into parts with equal areas and express the area of each part as a unit fraction of the whole and recognize that equal shares of identical wholes need not have the same shape.

Students must manipulate the units to find different shapes to represent different parts of a whole. They will represent parts of whole of two congruent shapes in different shapes of the same area.

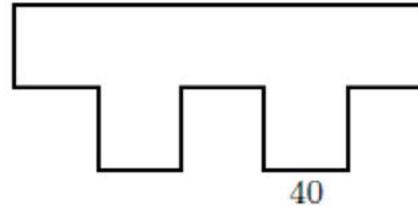
For Example: Partition a shape into 4 parts with equal area and describe the area of each part as $\frac{1}{4}$ of the area of the shape.

	<p style="text-align: center;">Area representations of $\frac{1}{4}$</p>  <p><i>In each representation the square is the whole. The two squares on the left are divided into four parts that have the same size and shape, and so the same area. In the three squares on the right, the shaded area is $\frac{1}{4}$ of the whole area, even though it is not easily seen as one part in a division of the square into four parts of the same shape and size.</i></p>
<p>Geometry and Measurement TEK 3.7</p>	<p>The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving customary and metric measurement.</p>
<p>3.7(A) Represent fractions of halves, fourths, and eighths as distances from zero on a number line</p>	<p>Students will be able to use a number line to show how far from zero each fractional quantity is. Relate this to measurement using rulers.</p>
<p>3.7(B) Determine the perimeter of a polygon or a missing length when given perimeter and the remaining sides lengths in problems</p>	<p>Students must be able to solve for perimeter of a polygon. Students must know to add all of the sides of the polygon. They must also understand and be able to apply algebraic situations and reverse operations of addition and subtraction to find the missing length when given the perimeter of a shape.</p>

Missing measurements and other perimeter problems



The perimeter of this rectangle is 168 length units. What are the lengths of the three unlabeled sides?



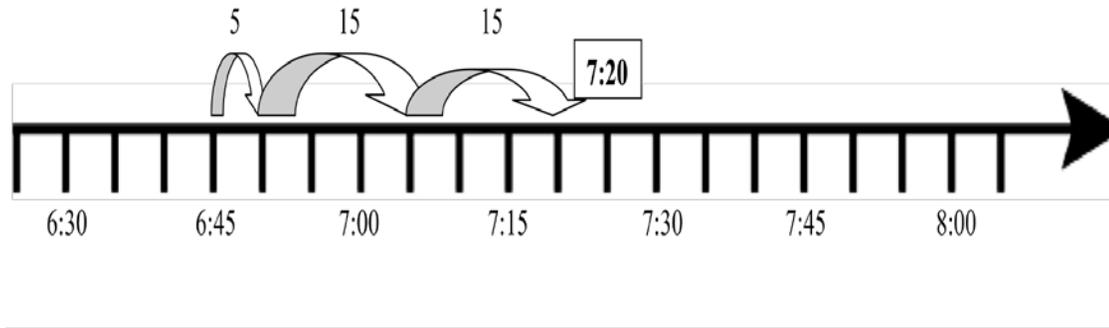
Assume all short segments are the same length and all angles are right

3.7(C) Determine the solutions to problems involving addition and subtraction of time intervals in minutes using pictorial models or tools such as 15 minute even plus a 30 minute event equals 45 minutes.

Students must be able to read and write time in minutes. They then must be able to know when to add and subtract minutes to determine when to work backward or forward. They must manipulate chunks of time in intervals such as 15 minutes or half hour.

Example:

Tonya wakes up at 6:45 a.m. It takes her 5 minutes to shower, 15 minutes to get dressed, and 15 minutes to eat breakfast. What time will she be ready for school?



3.7(D) Determine when it is appropriate to use measurements of liquid volume (capacity) or weight

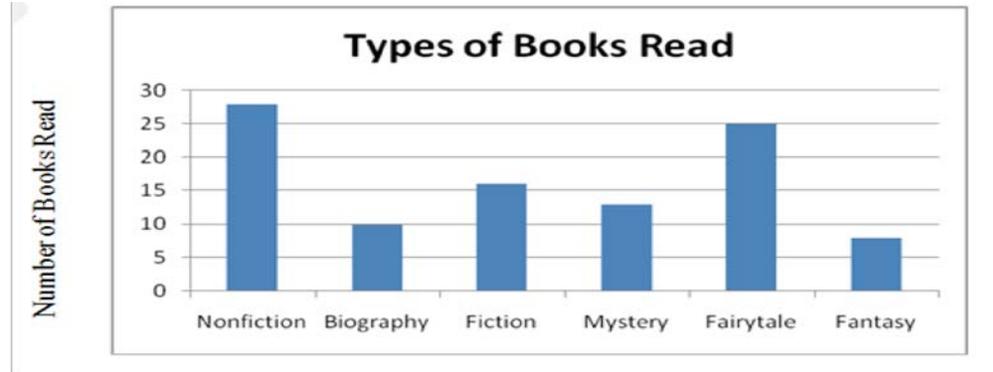
Students must understand the difference between liquid volume (capacity) and weight. They must then determine whether to find volume or weight in a given situation.

<p>3.7(E) Determine liquid volume (capacity) or weight using appropriate units and tools</p>	<p>Students must understand the units of measurement for volume and weight and know when to use which unit. They also need to know what tools are used to measure each one based on the size of the object.</p> <p>Examples of appropriate units: Volume – Metric - liters, milliliters Customary- gallons, quarts, pints, cups, ounces Weight – Metric – Grams, Kilograms Customary – Ounces, Pounds, Tons</p> <p>Examples of appropriate tools: Volume – graduated cylinders, measuring cups, other containers of different sizes Weight – scales, balances, weights</p>
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<p>Data Analysis: TEK 3.8</p>	<p>The student applies mathematical process standard to select appropriate customary and metric units, strategies, and tools to solve problems involving measurement.</p>
<p>3.8(A) Summarize a data set with multiple categories using a frequency table, dot plot, a pictograph, or bar graph with scaled intervals</p>	<p>Students must read and interpret a frequency table, dot plot, pictograph, and bar graph given a variety of scaled intervals, beyond one to one correspondence.</p> <p>Example of dot plot (line plot): Example: Measure objects in your desk to the nearest $\frac{1}{2}$ or $\frac{1}{4}$ of an inch, display data collected on a line plot. How many objects measured $\frac{1}{4}$? $\frac{1}{2}$? etc...</p> <div data-bbox="590 1159 1633 1458" style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Objects in my Desk</p> <p>measurements in inches</p> </div>

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

Students must interpret and analyze data given in a variety of ways to solve one- and two-step problems. The students must be able to use a problem solving model from the mathematical process standards.



Analyze and Interpret data:

- How many more nonfiction books were read than fantasy books?
- Did more people read biography and mystery books or fiction and fantasy books?
- About how many books in all genres were read?
- Using the data from the graphs, what type of book was read more often than a mystery but less often than a fairytale?
- What interval was used for this scale?
- What can we say about types of books read? What is a typical type of book read? (beyond standard)
- If you were to purchase a book for the class library which would be the best genre? Why? (beyond standard)

**Personal Financial Literacy:
TEK 3.9**

3.9(A) Explain the connection between human capital/labor and income

The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security.

Students must make the connection between a person's education, experience, and abilities to the income in an occupation. For example, higher education (college/trade schools) will usually lead to higher earning potential. There are many websites and books that explore different careers and the preparation needed for those careers where students can research.

http://smartertexas.org/?page_id=585

One book that you may want to use is the children's book [A Day's Work](#) by Eve Bunting.

3.9(B) Describe the relationship between the availability or scarcity of resources and how that impacts costs	<p>Students must define and describe supply and demand situations. This correlates with Social Studies TEKS 7AB and 8BC.</p> <p><i>Supply</i> is how much of something is available. For example, if you have 9 baseball cards, then your <i>supply</i> of baseball cards is 9. If you have 6 apples, then your <i>supply</i> of apples is 6.</p> <p><i>Demand</i> is how much of something people want. It sounds a little bit harder to measure, but it really isn't. To measure <i>demand</i>, we can use a very simple numbering system, just like the <i>supply</i> one. If 8 people want baseball cards, then we can say that the <i>demand</i> for baseball cards is 8. If 6 people want apples, then we can say that the <i>demand</i> for apples is 6.</p>
3.9(C) Identify the costs and benefits of planned and unplanned spending decisions	<p>Students must understand a basic budget and what happens with unplanned expenses arise.</p>

MY BUDGET SHEET

WEEK: _____

INCOME:

AMOUNT:

Allowance:

Earnings:

Gifts: (birthdays/holidays)

Other:

INCOME TOTAL: _____

FIXED EXPENSES:

AMOUNT:

FIXED EXPENSES TOTAL: _____

INCOME TOTAL - FIXED EXPENSES TOTAL=: _____

OTHER/UNEXPECTED EXPENSES:

AMOUNT:

OTHER EXPENSES TOTAL: _____

<p>3.9(D) Explain that credit is used when wants or needs exceeds the ability to pay and that it is the borrower's responsibility to pay it back to the lender, usually with interest</p>	<p>Students must understand the concept of credit and basic interest.</p> <p>Example: Borrowing money to buy a car or house. Explain that the payments will include principle and interest to repay the loan. Use a bank or credit website to input costs and length of loan to calculate actual amount repaid.</p>
<p>3.9(E) List reasons to save and explain the benefits of a savings plan, including for college</p>	<p>Students must explain why saving money, including a college fund, is important. There are many children's books about savings. <u>Alexander, Who Used to be Rich Last Sunday.</u></p> <p>Example: Have students choose something for which to save and then create a savings goal chart that will be implemented into their simple budget. Students must determine how much they can save weekly and how many weeks it will take to reach goal.</p>
<p>3.9(F) Identify decision involving income, spending, saving, credit, and charitable giving</p>	<p>Students must understand how a simple budget is developed. Students may also create a simple budget that includes income, spending, saving, credit, and charitable giving.</p>

MY BUDGET SHEET

WEEK: _____

INCOME:

AMOUNT:

Allowance:

Earnings:

Gifts: (birthdays/holidays)

Other:

INCOME TOTAL: _____

FIXED EXPENSES:

AMOUNT:

FIXED EXPENSES TOTAL: _____

INCOME TOTAL - FIXED EXPENSES TOTAL=: _____

OTHER/UNEXPECTED EXPENSES:

AMOUNT:

OTHER EXPENSES TOTAL: _____