Grade 2

Mathematics Curriculum Document

2014-2015

Trouble Shooting Guide

***The 2014-15 Mathematics Curriculum Document for Grade 2 includes the following features:**

A.) The NISD Curriculum Document is a TEKS-Based Curriculum

B.) YAG detailing the Curriculum Bundles, Suggested Days of Instruction, & TEKS

C.) Color Coding: Yellow=Supporting Standards, Green=Readiness Standards, & Blue=Process Standards, *Italic Red=Teacher Note,* Purple Text=ELPS, **BOLD=Notations of TEKS Standard Change, Cognitive Change, and Content Change** to Bridge Understanding of New TEKS

D.) TEKS, Understanding, Rigor Questions, Instructional Strategies/Resources, Questions & Stems and Teacher Notes/Resources are Detailed with each Curriculum Bundle. Focus on STAAR Alignment & Supporting of Readiness Connections.

E.) The expectation is that teachers will share additional effective resources with their campus Curriculum Specialist(s) for inclusion in the document.

F.)Since this is Year 1 of a New Mathematics Resource Adoption, inclusion of references to the resource will be included at a later time.

G.) Performance Tasks have been purposefully omitted; however, performance tasks are highly encouraged. The following resource offers tasks and corresponding directive cards (English and Spanish) and rubrics: http://www.rda.aps.edu/MathTaskBank/fi_html/k2tasks.htm. (See example, Pg 7) These activities ARE NOT to be thought of as projects. Project-Based Learning Projects will be included in the document at a later time after further professional development into PBL. Please follow up with your Campus Curriculum Specialists if you need assistance with selecting applicable performance tasks from the Mathematics Performance Task Bank.

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Year at a Glance By Six Weeks/Bundle/TEKS

First Semester	Second Semester
1st Six Weeks	**4th Six Weeks**
• Bundle #1= 14 Days: 2.2A (Supporting); 2.2B (Readiness); 2.2C (Supporting); 2.7B (Supporting); 2.7A (Supporting) • Bundle #2= Days: 14 Days: 2.2D (Readiness); 2.10A (Supporting); 2.2E (Supporting); 2.2F (Supporting); 2.4C (Readiness)	• Bundle #7= 19 Days: 2.4D (Readiness) • Bundle #8= 14 Days: 2.10A (Supporting); 2.10B (Supporting); 2.10C (Readiness); 2.10D (Supporting)
2nd Six Weeks	**5th Six Weeks**
Bundle #3= 15 Days: 2.4A (Supporting); 2.7B (Supporting); • Bundle #4=10 Days: 2.4B (Supporting); 2.1A	• Bundle #9= 14 Days: 2.3A (Supporting); 2.3D (Supporting); 2.3B (Readiness); 2.3C (Supporting) • Bundle #10= 19 Days: 2.8A (Supporting); 2.8C (Readiness); 2.8B (Readiness); 2.8D (Supporting); 2.8E (Supporting); 2.9F (Supporting)
3rd Six Weeks	**6th Six Weeks**
• Bundle #5= 10 Days: 2.5A (Readiness); 2.5B (Supporting); 2.11A (Supporting); 2.11B (Supporting); 2.11C (Supporting); 2.11D (Supporting); 2.11E (Supporting); 2.11F (Supporting) • Bundle #6= 15 Days:2.4C (Readiness); 2.7C (Supporting)	• Bundle #11= 15 Days: 2.9A (Supporting); 2.9B (Supporting); 2.9 G (Readiness); 2.9C (Supporting); 2.9D (Supporting); 2.9E (Readiness) • Bundle #12= 17 Days: 2.6A (Supporting); 2.6B (Supporting)

Process Standards

2.1A	2.1B	2.1C	2.1D	2.1E	2.1F	2.1G
Apply mathematics to problems arising in everyday life, society, the workplace.	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.	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.	Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.	Create and use representations to organize, record, and communicate mathematical ideas.	Analyze mathematical relationships to connect and communicate mathematical ideas.	Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

*Process Standards MUST be integrated within EACH Bundle to ensure the success of students.

Course: Grade 2 Math	Bundle 1: Represent and Compare Whole Numbers (Place Value to 1,200)	August 25 – September 12 (14 days)

Understandings

- The position of the digit in a number shows their value.
- Number concepts help make sense of the world around us.
- Build an understanding of the base 10 numerical system.

Rigor Questions

How can you use groups of 10s and 100s to build numbers?
How can you identify thousands, hundreds, tens and ones in a number?
How does a place of a number affect its value?

Vocabulary: Cognitive Complexity Verbs for TEKS: **Use; Analyze; Write; Generate**

compose; decompose; numbers (1-1,200); sum; thousands; hundreds; tens; ones; standard form; word form; expanded form; greater than; less than; place value; odd; even; pairing; 10 more; 10 less; 100 more; 100 less

TEKS/Student Expectations	TEKS/ELPS Integration	Instructional Strategies/Resources	Clarifications and Examples
The student is expected to: 2.2.A-use concrete and pictorial models to compose and decompose numbers up to 1,200 in more than one way as a sum of so many thousands, hundreds, tens, and ones; (Supporting Standard) **Current Standard**: 2.1A Use concrete models of hundreds, tens, and ones to represent a given whole number (up to 999) in various ways. **Cognitive Change**: Added "composing and decomposing" of numbers. **Content Change**: Added the use of pictorial models; Added the thousands place value; Extended representations to 1,200. 2.2.B-use standard, word, and expanded forms to represent numbers up to 1,200; (Readiness Standard) **Current Standard**: 1.2B Use place value to read, write, and describe the value of whole numbers through 999. **Cognitive Change**: Changed "reading, writing, and describing, to representing" numbers. **Content Change**: Added the use of word, standard, and expanded forms of numbers; Extended place value to 1,200	2.2.A **Supports Readiness Standard By:** The use of concrete objects (base ten blocks) and pictorial models to represent numbers through 1,200 will support student's conceptual understanding of the magnitude of numbers and the relationship between the place values. This knowledge will extend to relating those visual representations to expanded notation, supporting the comparing/ordering of numbers, and developing addition/subtraction place value algorithms. 2.2.B STAAR Grade Level Scaffold: 4.2B represent the value of the digit in whole numbers through 1,000,000,000 and decimals to the hundredths using expanded notation and numerals (R) 3.2A 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 (R) **ELPS**5 (B) write using newly acquired basic vocabulary and content-based grade-level vocabulary;	2.2.A **Instructional Implications:** Through the use of base ten blocks, students will begin to visually understand the magnitude of numbers (i.e. the thousand cube is ten times more than the hundred flat, the hundred flat is ten times more than the ten rod; the hundred flat is ten times smaller than the thousand cube, the ten rod is ten times smaller than the hundred flat, etc.). Students need to understand that the digit in the number represents its place value which is different from the value of the number (i.e. In the number 124; the digit two is in the tens place represented by two ten rods, but it is valued at 20). Numbers should be represented in more than one way (i.e. The number 589 can be represented as 5 hundreds, 8 tens, 9 ones or 4 hundreds, 18 tens, and 9 ones or 5 hundreds, 7 tens, and 19 ones). This understanding will lend itself to regrouping in subtraction (i.e. 589 - 192 = __; 589 would have to be regrouped into 4 hundreds, 18 tens, and 9 ones). 2.2.B **Instructional Implications:** As students begin representing numbers through 1,200 using base ten blocks (see 2.2A), their understanding should also be associated with writing numbers in standard form (827), word form (eight hundred twenty-seven),and expanded form (i.e. 827 = 800 + 20 + 7). This type of representation will allow students to focus on the value of each digit and support the understanding of the place value system (i.e. eight flats represent the value 800; two ten rods represent the value of 20; seven unit cubes represent the value of 7; 800 + 20 + 7 = 827). As grade 2 introduces the thousands period, it will be essential to explain the use of the comma to separate the periods (i.e. 1,243: the comma separates the hundreds period from the thousands period). In representing numbers in word form, be sure to emphasize the correct use of the hyphen (i.e. twenty-three).	**Focus** Use base ten blocks to compose and decompose numbers up to 1,200 and move towards abstract models such as pictorials. This will ultimately lead to expanded notation. **Questions & Stems** • What is the value of the _3_ in the number _352_? (300) • How can you compose the number 3 hundreds, 5 tens and 2 units = 352? • How can you decompose the number 352? (300 + 50 + 2) *Teacher provides clues and student will use models represent the number.* **Teacher Notes** • *When representing units (ones) arrange in a tens frame format.* *2.2A - Specificity has been added with rephrasing "Represent….in various ways" as "use concrete and pictorial models to compose and decompose numbers.* *"Specificity has been added with "sum of so many thousands, hundreds, tens, and ones." It may include decomposing 787 into 7 hundreds, 8 tens, and 7 ones. It may also include decomposing 787 into the sum of 500, 200, 50, 30, and 7 to prepare for work with compatible numbers when adding whole numbers with fluency.* *The number has increased from "up to 999" to "up to 1,200." Students are expected to use pictorial models in addition to concrete models. (previously 2.1A & 2.1B)* *2.2B - The Revised SE 2012 has been made more concise by replacing "read, write and describe" with "represent."* *Specificity has been added for what is to be represented (read, written, and described): "standard, word, and expanded forms" in place of "place value."*

			The number has increased from "up to 999" to "up to 1,200. 2.2.B **Distractor Factor:** *Students may incorrectly use the word "and" to represent numbers in words (i.e. 345 is represented as "three hundred forty-five", not "three hundred and forty-five). The use of the word "and" is applied in the representation of whole number and decimal values (i.e. 3.45 is represented as "three and forty-five hundredths); Students may not use the hyphen appropriately when representing numbers in words (i.e. 345 is represented as "three hundred forty-five"); Students confuse the place value a digit is in with its value (i.e. 345; the digit 4 is in the tens place value but it is valued at 40); Students may confuse the term digit and number.*
TEKS/Student Expectations	**TEKS/ELPS Integration**	**Instructional Strategies/Resources**	**Clarifications and Examples**
The student is expected to: 2.2.C-generate a number that is greater than or less than a given whole number up to 1,200; (Supporting Standard) **Current Standard**: 2.5B Use patterns in place value to compare and order whole numbers through 999. **Cognitive Change**: Added "generating" of numbers that are greater than or less than a given number. **Content Change**: Changed strand from "Patterns, Relationships, and Algebraic Thinking" to "Numbers and Operations"; Extended comparisons from 999 to 1,200.	2.2.C **Supports Readiness Standard By:** Generating a number greater than or less than a given whole number will allow students to focus on the value of various digits in a number before moving to the abstract use of comparison symbols (<, >, =).	2.2.C **Instructional Implications:** As students become more knowledgeable with their use of the place value system in using the base-ten blocks (2.2A) and expanded notation (2.2B), instruction should include students generating a number "greater than" or "less than" a given whole number. Students should be able to explain that the position of each digit in a numeral determines the quantity of a given number (i.e. Given the number 437, students understand that the digit four represents the number of hundred flats and its value is 400; the digit three represents the number of ten rods and its value is 30). This explanation is important to ask of children before they begin abstractly comparing two given numbers (2.2D) so students' can demonstrate understanding of place value.	**Focus** Use place value to generate a number that is either greater than or less than a given number. **Question & Stems** •Look at the number 352, create a number that is greater. • How can you create a number that is less than 352? *Teacher will provide a given number and student will generate a number that is either greater than or less than.* **Teacher Notes** *The focus is on student generating number that are greater or less than a given number not comparing using symbols. This will be covered in bundle 2. This revised SE extends revised SE K(2)(F) where students are expected to generate a number that is one more or one less than another number up to 20 and revised SE 1(5)(C) where students are expected to determine the number that is 10 more and 10 less than a given number up to 120.*

TEKS/Student Expectations	TEKS/ELPS Integration	Instructional Strategies/Resources	Clarifications and Examples
The student is expected to: 2.7.B-use an understanding of place value to determine the number that is 10 or 100 more or less than a given number up to 1,200. (Supporting Standard) **Current Standard**: 2.5A Find patterns in numbers such as in a 100s chart. 2.5B Use patterns in place value to compare and order whole numbers through 999. **Cognitive Change**: Focus is more on the "use" of place value relationships for "comparing/ordering" of numbers. **Content Change**: Extended place value to 1,200; Defined patterns to be that of adding ten/hundred, more/less	2.7.B **Supports Readiness Standard By:** Students will begin identifying patterns in determining 10 or 100 more/less than a given number. Recognizing the change in the digits will reinforce tens and hundreds place value. This standard will reinforce place value in support of comparing and ordering whole numbers.	2.7.B **Instructional Implications:** In order to adhere to the standard, students must be able to determine 10 more/10 less or 100 more/100 less of a given number (i.e. ten more than 234 is 244; 100 less than 340 is 240). Instruction might begin with the use of a 100s chart to recognize the patterns of 10 more/10 less (i.e. using your 100s chart, what is 10 more than 23 or what is 10 less than 45?). As students move down a row to model ten more than a number, they should begin relating how the digit in the tens place is increasing by one with each move down a row in a column. As students move up a row in a column to model 10 less than a number, they should begin relating how the digit in the tens place is decreasing with each move up a row. As student become proficient with addition/subtraction of ten, instruction can extend to 100 more/100 less. In accordance with the TEKS, students also need to connect their findings through the use of properties of numbers and operations (i.e. Ten more than 234 is 244 because 234 + 10 = ___; 200 +30 + 4 + 10 = ___; 200 + 30 + 10 + 4 = 200 + 40 + 4 = 244).	**Focus** Use models, drawings, or metal math to find 10 more, 10 less, 100 more, and 100 less than a given number. **Question & Stems** • How does 352 change when it is increased by a multiple of 10 or 100? • How does 352 change when it is decreased by a multiple of 10 or 100? *Provide students with a given number and ask them to increase/decrease by multiple of 10 or 100.* *Ex. Increase 245 by 200.* *Ex. Decrease 245 by 20.* *The number has increased from "up to 999" to" up to 1,200."* *The revised SE provides specificity for the use of place value in generating numbers that may then be compared as "more" or "less."* *The revised SE provides a foundation for the revised SE 2(2)(D).*
The student is expected to: 2.7.A-determine whether a number up to 40 is even or odd using pairings of objects to represent the number. (Supporting Standard) **Current Standard**: 1.5B Find patterns in numbers including odd and even. **Cognitive Change**: N.A **Content Change**: Moved even and odd number patterns from Grade 1 to Grade 2; Limited even/odd pairings to 40.	2.7.A **Supports Readiness Standard By:** As students solve problems using all operations, developing patterns with even and odd solutions can support students with their computational efficiency and accuracy (i.e. odd + odd = even; even + odd = odd; odd - odd = even; odd - even = odd).	2.7.A **Instructional Implications:** In order to adhere to the standard, students should be provided a set of objects to group in pairs to determine if a number is even or odd. As students begin pairing objects, instruction should relate this concept to the double facts (i.e. 18 is even as there are 9 groups of pairs(2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2= 18); 15 is odd as there are 7 groups of pairs with one left over (2 + 2 + 2 + 2 + 2 + 2 + 2 +1 = 15).	**Focus** Determine if a number is odd or even using pairings of objects or graphic organizers (tens frame). **Questions & Stems** • How can you determine if a number is odd or even? • Explain why a number is odd or even. • How can you make an odd number even? *Students must explain if a given number is odd or even.* **Teacher Note** *This SE was previously taught in 1st grade you will want to collaborate with this team for resources.* *Use concrete objects and tens frames to model pairs.*

			The revised SE comes from the current grade 1 TEKS: Patterns, relationships, and algebraic thinking 1(5)(B). *Specificity has been added with the "pairings of objects" rather than "patterns."*

Course: Grade 2 Math	Bundle 2: Comparing Numbers Using Place Value	September 15 – October 2 (14 days)

Understandings

- The position of the digit in a number shows its value.
- Understand how to represent and compare whole numbers.

Rigor Questions

How can you prove that one number is larger or smaller than another number?
How can you show the location of a number on a number line?
How can we use graphs to compare numbers?

Vocabulary: Cognitive Complexity Verbs for TEKS: **Use; Apply;**

place value; whole numbers (1-1,200); greater than; less than; equal to; bar graph; data points; pictograph; category; open number line; addition; subtraction; algorithms; data points; length

TEKS/Student Expectations	TEKS/ELPS Integration	Instructional Strategies/Resources	Clarifications and Examples
The student is expected to: 2.2.D-use place value to compare and order whole numbers up to 1,200 using comparative language, numbers, and symbols (>, <, or =); (Readiness Standard) **Current Standard**:2.1C Use place value to compare and order whole numbers to 999 and record the comparisons using numbers and symbols (<, >, =). **Cognitive Change**: N/A **Content Change**: Extended comparisons from 999 to1,200; Added the sue of comparative language.	2.2.D STAAR Grade Level Scaffold: 4.2C compare and order whole numbers to 1,000,000,000 and represent comparisons using the symbols >, <, or = (S) 3.2D compare and order whole numbers up to 100,000 and represent comparisons using the symbols >, <, or = (R)	2.2.D **Instructional Implications:** As students compare the value of numbers, they need to be able to relate their understanding of place value (i.e. the number 342 is greater than 226 because the digit 3 in 342 means there are 3 hundreds which is a value of 300. However, the digit 2 in 226 means there are only 2 hundreds and has a value of 200.) Using expanded notation 300 + 40 + 2 is greater than 200 + 20 + 6. Students will compare two numbers using the correct academic vocabulary (i.e. 342 is greater than 226). It is important for students to recognize the inverse comparison statement as well (i.e. 226 is less than 342). The use of the comparative language is critical before moving to the symbolic representation. It is important for students to recognize how their language can be communicated using symbols (>, <, =). It is critical that students do not learn how to read each of the symbols using a trick to remember directionality of the symbols (i.e. the alligator's mouth eats the bigger number). Encourage students to	**Focus** Compare and order numbers by looking at the value of the highest place first and then working down if necessary. Use mathematical symbols such as >, <, =. **Questions & Stems** • Explain why the number 707 is less than the number 770. • Using mathematical symbols, make this statement true 707 ___ 770. • Order the following numbers from greatest to least/ least to greatest. **Teacher Notes** *Show the numbers in different formats or models. Ex. 300 + 50 + 2 _____ 325* *Specificity has been added with the phrase*

		write and articulate two comparison statements during activities (i.e. 342>226 and 226<342). The standard also has students ordering three or more numbers from least to greatest or greatest to least. The use of open number lines (see 2.2E/F) will allow students to order more efficiently. The increase in the value of numbers from left to right on a number line can be associated to ordering from least to greatest; numbers decrease from right to left on a number line can be associated to ordering from greatest to least.	*"comparative language." If using the symbols and the current 2(13)(A) and 2(13)(B), students would have been using the comparative language associated with the symbols.* *The number has increased from "up to 999" to "up to 1,200."* 2.2.D **Distractor Factor:** *Students who rely on a trick to determine the direction of an inequality sign may not be able to read comparison symbols correctly. Students may view a comparison statement and its inverse as two different comparison statements (i.e. 456 > 412 is the same as 412 < 456). Students confuse the place value a digit is in with its value (i.e. 345; the digit 4 is in the tens place value, but it is valued at 40). Students may confuse the term digit and number.*
TEKS/Student Expectations	**TEKS/ELPS Integration**	**Instructional Strategies/Resources**	**Clarifications and Examples**
The student is expected to: 2.10.A-explain that the length of a bar in a bar graph or the number of pictures in a pictograph represents the number of data points for a given category; (Supporting Standard-NEW STANDARD!!!)	2.10.A **Supports Readiness Standard By:** Understanding the length of the bar graph or the number of pictures in a pictograph represents the number of data points for a given category will support a student in accurately solving addition/subtraction problems and summarization of data. **ELPS** 3 (D) speak using grade-level content area vocabulary in context to internalize new English words and build academic language proficiency; **ELPS 5** (B) write using newly acquired basic vocabulary and content-based grade-level vocabulary;	2.10.A **Instructional Implications:** According to the TEKS, students will organize data (i.e. results of a poll of 2nd grade students' favorite color) in a bar graph or pictograph. As students begin organizing the data, they need to understand the difference between category (i.e. red, green, blue, etc.) and data points (i.e. number of students that selected a particular category). The length of bar graph or the number of pictures in a pictograph identifies the number of data points for a particular category.	**Focus** Graphs are another way to represent numbers. Use graphs to compare and order numbers. **Questions & Stems** • Is category 1 >, < , = to category 2? • How does the length of a bar on a bar graph help you determine if it is > , < , = another category? **Teacher Notes** Only use graphs to compare numbers not to analyze the data. Analyzing graphs will be covered in bundle 8. *Specificity has been added in how students are expected to be able to explain their construction of a picture graph (pictograph) or a bar-type graph (bar graph).*
The student is expected to: 2.2.E-locate the position of a given whole number on an open number line;(Supporting Standard) **Current Standard**: 2.8 Use whole numbers to locate and name points on a number line (Geometry and Spatial Reasoning Strand). **Cognitive Change**: N/A **Content Change**: Changed strand from "Geometry and Spatial Reasoning" to "Number and	2.2.E **Supports Readiness Standard By:** Students can use number lines to compare/order numbers and develop their understanding of place value, the relative position of numbers, and magnitude of numbers. The use of this tool is a critical support mechanism. 2.2.F- **Supports Readiness Standard By:** As a number line is used as a strategy to compare/order numbers and develops a student's understanding of place value, the relative position of numbers, and the magnitude of numbers, the use of this tool will be a critical support	2.2.E **Instructional Implications:** An open number line does not have landmark numbers earmarked, does not have to begin at zero, and should include the use of arrows on both ends of the number line to indicate that the numbers continue beyond what is marked. Students will apply their understanding of the place value system in relation to the relative position on an open number line (i.e. The number 352 would fall between 350 and 360 on a number line as 352 can be expressed as 300 + 50 + 2 or the number 352 has 3 hundreds, 5 tens and two	**Focus** Determine where to place a given number on a number line. Identify missing numbers by finding counting patterns on a number line. **Questions & Stems** • In looking at a given number line, what number will come before/after ____? (Answer may vary according to the interval of the numbers.)

Operations"; Added the use of an "open" number line. 2.2.F-name the whole number that corresponds to a specific point on a number line. (Supporting Standard) **Current Standard**: 2.8 Use whole numbers to locate and name points on a number line (Geometry and Spatial Reasoning Strand). **Cognitive Change**: N/A **Content Change**: Changed strand from "Geometry and Spatial Reasoning" to "Number and Operations"; Added the use of an "open" number line.	mechanism.	ones). As students are given a specific number to locate on an open number line, you will begin to assess students' understanding of place value (i.e. students place the number 352 between 350 and 360), the relative position of numbers (i.e. the number 350 would be indicated first and the number 360 would be indicated second on the open number line), and the magnitude of numbers (i.e. Students physically place the number 352 closer to 350 than 360). 2.2.F **Instructional Implications:** In contrast to 2.2E, specific numbers are already marked on this number line, did not have to begin at zero, and includes the use of arrows on both ends of the number line to indicate how the numbers continue beyond what is marked. Students will be provided a specific location identified on a given number line and asked to name the whole number representing its value. In conjunction with 2.2E, this activity will allow you to assess students' understanding of place value, the relative position of numbers and the magnitude of numbers.	• What number comes between 2 given numbers? **Teacher Notes** *Use number lines that have intervals other than 1 such as 2, 5, 10, etc.* *Present number lines that do not always start at 0.* *The use of an open number line has been specified.*
TEKS/Student Expectations	**TEKS/ELPS Integration**	**Instructional Strategies/Resources**	**Clarifications and Examples**
The student is expected to: 2.4.C-solve one-step and multi-step word problems involving addition and subtraction within 1,000 using a variety of strategies based on place value, including algorithms; (Readiness Standard) **Current Standard**: 2.3B Model addition and subtraction of two digit numbers with objects, pictures, words, and numbers; 2.3C Select addition or subtraction to solve problems using two-digit numbers, whether or not regrouping is necessary. **Cognitive Change**: Added the use of multi-step word problems. **Content Change**: Added the types of process for adding and subtracting of two-digit numbers; Added emphasis on the knowledge of place value and properties of operations; Added the addition/subtraction of up to four two-digit numbers; Extended addition/subtraction within 1,000.	2.4.C STAAR Grade Level Scaffold: 4.4A add and subtract whole numbers and decimals to the hundredths place using the standard algorithm (R) 3.4A 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 (R)	2.4.C **Instructional Implications:** In conjunction with 2.4B, students will apply their strategies for addition and subtraction to solve real world problems. Instruction should include how the subtraction symbol represents distance (i.e. How far away is 3 from 11 on the number line in the following problem, 11 - 3 = __?). This understanding of subtraction representing distance will lay the foundation for future learning of subtraction of integers (i.e. In the problem 11 --(-3) = 14, the number -3 is 14 spaces away from 11). In adherence to the standard, students are required to solve multi-step word problems. Instruction should include samples of multiple step addition, subtraction, and a mixture of addition and subtraction problems. Students may need a visual to represent multiple-step understanding. Word problems should include a variety of contexts. **Joining**: Sarah had 43 pencils. Juan gave her 18 more pencils. How many pencils does	**Focus** Solve one step word problems using mental math and patterns. Add or subtract using multiples of 10's and 100's. **Questions and Stems** • There were 25 students in the class. 20 more joined in. How many students are in class now? • There were 156 m&m's in the bowl. Lucy ate 30 of them. Her mom refilled the bowl with 60 more. How many m&m's are in the bowl now? *The revised SE includes the addition and subtraction of 3 digit numbers.* *The constraint of "within 1,000" has been added.* *Specificity has been added as to the type of word problems students may be expected to solve. Problems may be one-step of multi-step. Paired with*

		Sarah have now? Sarah had 25 pencils. Juan gave her some more pencils. Now Sarah has 43 pencils. How many pencils did Juan give her? Sarah had some pencils. Juan gave her 18 pencils. Now Sarah has a total of 43 pencils. How many pencils did Sarah have to begin with? **Separating**: Sarah had 43 pencils. She gave 18 pencils to Juan. How many pencils does Sarah have now? Sarah had a total of 43 pencils. She gave some to Juan. Now she only has 25 pencils. How many pencils did she give to Juan? Sarah had some pencils. She gave 18 to Juan. Now Sarah has 25 pencils left. How many pencils did Sarah have before? **Comparing**: Juan has 43 pencils and Sarah has 25 pencils. How many more pencils does Juan have than Sarah? Sarah has 18 fewer pencils than Juan. If Sarah has 25 pencils, how many pencils does Juan have? Juan has 18 more pencils than Sarah. If Juan has 43 pencils, how many pencils does Sarah have? If Juan has 43 and Sarah has 25, how many more does Sarah need to have the same amount as Juan?	*2(4)(B), the problems in 2(4)(C) would be limited to addition of "up to four two-digit numbers" and subtraction of "two-digit numbers."* *Strategies may include properties of operations. For example, 432+241 may be thought of as (400+200)+(30+40)+(2+1).* *Specificity has been added regarding strategies used to solve problems.* *Fluency with this skill occurs in grade 3.* 2.4.C **Distractor Factor** *Students may try to apply "key words" to select the appropriate operation instead of understanding the context of the problem.; Students may not recognize a number sentence and its inverse as being equivalent (i.e. 42 - 18 = ___ is the same things as 18 + ___ = 42).*

Course: Grade 2 Math	Bundle 3: Addition/Subtraction Strategies (up to 20)	October 6 -24 (15 days)

Understandings

- Knowing basic facts will help build and expand math skills in our daily life.

Rigor Questions

1. What strategies can be used for adding and subtracting two given numbers?
2. What addition and subtraction strategy works for you?

Vocabulary: Cognitive Complexity Verbs for TEKS: **Use; Analyze**

add; basic facts; difference; subtract; sum; addition; subtraction; facts; place value; 10 more than/less than; 100 more than/less than

TEKS/Student Expectations	TEKS/ELPS Integration	Instructional Strategies/Resources	Clarifications and Examples
The student is expected to: 2.4.A-recall basic facts to add and subtract within 20 with automaticity; (Supporting Strategies) **Current Standard**: 2.3A Recall and apply basic addition and subtraction facts (to 18); 2.5C Use patterns and relationships to develop strategies to remember basic addition and subtraction facts; Determine patterns in related addition and subtraction number sentences (including fact families). **Cognitive Change**: Added recall of basic facts with "automaticity" **Content Change**: Extended basic facts from 18-20; Deleted the term "fact family".	2.4.A **Supports Readiness Standard By:** Efficiency and accuracy with basic addition/subtraction facts will be a critical foundation for students to be able to solve multi-step addition and subtraction problems using place value strategies.	2.4.A **Instructional Implications:** In conjunction with 1.3D, students will continue to apply the following strategies to recall basic facts: **Addition:** • **Make ten with the use of two tens frame as a model** (i.e. 9 + 8 = ____; 9 + 1 + 7 = ___; 10 + 7 = ___; 10 + 7 = 17) • **Make ten with the use of an open number line** (i.e. 9 + 8 = ____; 9 + 1 + 7 = ___; 10 + 7 = ___; 10 + 7 = 17) • **Doubles** (i.e. 6 + 8 = __; 6 + 6 + 2 = __; 12 + 2 = ___; 12 + 2 = 14 • **Count On** (i.e. 3 + 8 = ___; 8, 9, 10, 11; 3 + 8 = 11) **Subtraction:** • **Think Addition/Count On** (i.e. 12 - 9 = ___; 9 + ___ = 12; 9 + 3 = 12) • **Make ten with the use of two tens frame as a model** (i.e. 12 - 9 = ___; 12 - 10 = 2; 2 + 1 = 3) • **Make ten with the use of an open number line** (i.e. 12 - 9 = ___; 12 - 10 = 2; 2 + 1 = 3) • Count back (i.e. 12 - 3 = __; 12, 11, 10, 9; 12 - 3 = 9)	Use strategies to solve basic addition and subtraction facts up to 20 with automaticity. **Questions** • What strategy will help you solve 7+6? • Which would be the best strategy to help you solve 8+9? • Which one of these math sentences does not belong in the fact family for 4+6=10? **Teacher Notes** •This is where you can introduce strategies such as: combinations of 10, doubles, near doubles, 10 plus a number, etc. •Numerical fluency programs, flashcard in stations and other fluency games should be used. •Related facts (fact families) are not listed in the TEKS, but can be taught as a strategy to help solve problems and relate addition to subtraction.

		In adherence to this grade level standard, students will continue to practice using these strategies in order to recall their basic facts with automaticity.	*Students are expected to recall basic addition and subtraction facts.* *When coupled with revised SE, students may still be asked to apply these basic facts.* *The level of skill with "automaticity" requires quick recall of basic facts within 20 with speed and accuracy at an unconscious level.* *Automaticity is part of procedural fluency and, as such, should not be overly emphasized as an isolated skill.* *Automaticity with basic addition and subtraction facts allows students to explore richer applications of addition and subtraction.* *This is an increase from within 18.*
TEKS/Student Expectations	**TEKS/ELPS Integration**	**Instructional Strategies/Resources**	**Clarifications and Examples**
The student is expected to: 2.7.B-use an understanding of place value to determine the number that is 10 or 100 more or less than a given number up to 1,200; (Supporting Standard) **Current Standard**: 2.5A Find patterns in numbers such as in a 100s chart. 2.5B Use patterns in place value to compare and order whole numbers through 999. **Cognitive Change**: Focus is more on the "use" of place value relationships for "comparing/ordering" of numbers. **Content Change**: Extended place value to 1,200; Defined patterns to be that of adding ten/hundred, more/less	2.7.B **Supports Readiness Standard By:** Students will begin identifying patterns in determining 10 or 100 more/less than a given number. Recognizing the change in the digits will reinforce tens and hundreds place value. This standard will reinforce place value in support of comparing and ordering whole numbers. . **ELPS** 5 (B) write using newly acquired basic vocabulary and content-based grade-level vocabulary;	2.7.B **Instructional Implications:** In order to adhere to the standard, students must be able to determine 10 more/10 less or 100 more/100 less of a given number (i.e. ten more than 234 is 244; 100 less than 340 is 240). Instruction might begin with the use of a 100s chart to recognize the patterns of 10 more/10 less (i.e. using your 100s chart, what is 10 more than 23 or what is 10 less than 45?). As students move down a row to model ten more than a number, they should begin relating how the digit in the tens place is increasing by one with each move down a row in a column. As students move up a row in a column to model 10 less than a number, they should begin relating how the digit in the tens place is decreasing with each move up a row. As student become proficient with addition/subtraction of ten, instruction can extend to 100 more/100 less. In accordance with the TEKS, students also need to connect their findings through the use of properties of numbers and operations (i.e. Ten more than 234 is 244 because 234 + 10 = ___; 200 +30 + 4 + 10 = ___; 200 + 30 + 10 + 4 = 200 + 40 + 4 = 244).	**Focus** Use models, drawings, or metal math to find 10 more, 10 less, 100 more, and 100 less than a given number. **Question & Stems** • How does 352 change when it is increased by a multiple of 10 or 100? • How does 352 change when it is decreased by a multiple of 10 or 100? *The revised SE provides specificity for the use of place value in generating numbers that may then be compared as "more" or "less."* *The revised SE provides a foundation for the revised SE 2(2)(D).*

Course: Grade 2 Math	Bundle 4: Modeling 2-Digit Addition and Subtraction	October 27 – November 7 (10days)

Understandings

- Strategies can be used to solve addition and subtraction problems.

Rigor Questions

What are some ways you can model addition and subtraction of two-digit numbers?
How can you explain your solution?

Vocabulary: Cognitive Complexity Verbs for TEKS: **Apply**

addition; difference; place value; properties of numbers; sum; subtraction; two-digit; mental strategies; algorithms; place value; ones; tens

TEKS/Student Expectations	TEKS/ELPS Integration	Instructional Strategies/Resources	Clarifications and Examples
The student is expected to: 2.4.B-add up to four two-digit numbers and subtract two-digit numbers using mental strategies and algorithms based on knowledge of place value and properties of operations; (Supporting Standard) **Current Standard**: 2.3B Model addition and subtraction of two digit numbers with objects, pictures, words, and numbers. **Cognitive Change**: Added the use of multi-step word problems. **Content Change**: Added the types of process for adding and subtracting of two-digit numbers; Added emphasis on knowledge of place value and properties of operations; Added the addition/subtraction of up to four two-digit numbers; Extended addition/subtraction within 1,000.	2.4.B **Supports Readiness Standard By:** Adding multi-digit numbers based on place value and properties of operations is a fundamental skill in order to solve multi-step addition problems. ELPS 4 (K) demonstrate English comprehension and expand reading skills by employing analytical skills such as evaluating written information and performing critical analyses commensurate with content area and grade-level needs.	2.4.B **Instructional Implications:** Students will employ their understanding of place value and expanded notation to develop mental strategies to add multiple two-digit numbers. Properties of operations include the commutative, associative, and inverse properties. Although the teacher may model the names of the properties (i.e. **commutative, associative, inverse**, etc.), students will only be asked to employ the underlying concepts in order to solve addition and subtraction problems. (i.e. **Commutative & Associative Property**: 34 + 16 + 23 + 12= ___; (30 + 4) + (10 + 6) + (20 + 3) + (10 + 2) = ____; (30 + 10 + 20 + 10) + (4 + 6 + 3 + 2) = ____; 70 + 15 = 85). (i.e. **Inverse Property**: 62 - 58 = __; 58 + ___ = 62; applying add-on, 59, 60, 61, 62; 62 - 58 = 4). Once students become fluent using the mental strategies, the traditional algorithm can be introduced relating the steps in the algorithm to the steps in the mental math strategies described above.	**Focus** Use concrete models, pictorials and mental strategies to solve two-digits addition/subtraction problems moving towards the algorithm. Eventually students will be able to add four 2-digit numbers. **Questions** • What strategy works best for solving the problem 34+26? • 20+13+45+15=? • What is a strategy for adding 4+7+3+6? **Teacher Notes** This concept of addition/subtraction will continue through bundle 7. Before introducing the algorithm students should have a variety of strategies, experiences and conceptual understanding of how to solve addition/subtraction problems. *Specificity has been added for the number of values to be used when adding and subtracting with two-digit numbers.* *This specificity does not constrain the work with addition and subtraction in other SEs.* *Specificity has been added regarding strategies used to solve problems. Students are still expected*

			to "regroup" as they apply mental strategies and algorithms based on knowledge of place value and property of operations.

Course: Grade 2 Math	Bundle 5: Money & Financial Literacy	November 10 – 21 (10 days)

Understandings

- A collection of coins have a value or equivalent worth.
- Responsible money management.

Rigor Questions

What strategies can you use to count a collection of coins?
What symbols are used to describe the value of a collection of coins?
How is money used in everyday life?

Vocabulary: Cognitive Complexity Verbs for TEKS: **Determine; Use; Apply**

Penny(ies); nickel(s); dime(s); quarter(s); dollar; cent sign; dollar sign; decimal point; calculate; saving; spending; deposit; withdrawal; borrowing; responsible borrowing; irresponsible borrowing; benefits; lending; lending; producers; consumers; money saved;

TEKS/Student Expectations	TEKS/ELPS Integration	Instructional Strategies/Resources	Clarifications and Examples
The student is expected to: 2.5.A-determine the value of a collection of coins up to one dollar; (Readiness Standard) **Current Standard**:2.3D Determine the value of a collection of coins up to one dollar. **Cognitive Change**: N/A **Content Change**: N/A 2.5.B-use the cent symbol, dollar sign, and the decimal point to name the value of a collection of coins. (Supporting Standard) **Current Standard**: 2.3E Describe how the cent symbol, dollar symbol, and the decimal point are used to name the value of a collection of coins. **Cognitive Change**: Deleted "describing" how the cent symbol, dollar symbol, and decimal point are used; however, can be applied to process standard 2.1D **Content Change**: N/A	2.5.A STAAR Grade Level Scaffold: 4.8C solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate (R) 3.4C determine the value of a collection of coins and bills (S) 2.5.B **Supports Readiness Standard By:** Being able to symbolically represent the value of a collection of coins appropriately is critical in solving monetary transactions.	2.5.A **Instructional Implications:** Students are to apply their knowledge of skipping counting (see 1.5B) to determine the value of a collection up to one dollar (i.e. skip count by twos to count a collection of pennies; skip count by fives to count a collection of nickels; skip count by tens to count a collection of dimes). As students become comfortable with determining the value of a collection of like coins, instruction should then address a mixture of unlike coins. Again, associating a child's understanding of skip counting will allow them to add the value with ease (i.e. Given 3 dimes, 4 nickels and 6 pennies, students will skip count by tens to add the value of dimes 10, 20, 30, skip counting by fives to add the value of the nickels 35, 40, 45, 50, and then skip count by twos to add the value of the pennies; 52, 54, 56). In adherence to the standard, students should solve problems involving monetary transactions. 2.5.B **Instructional Implications:** In conjunction with 2.5A, students will begin using the cent symbol or the dollar sign and decimal point to represent the value of a collection of coins. Instruction should address that money can be represented two ways (i.e. 42¢ or $0.42) but cannot be represented using both symbols (i.e. $0.42¢). Instruction should address how the decimal point is used to separate the dollars (whole) from the cents (part).	**Focus** Count a collection of coins up to a dollar. Display values using different mathematical symbols ($0.86, 86¢, eighty six cents). Students should be using flexible counting strategies to determine the value of the collection. Students should apply their knowledge of skip counting to determine the value of like coin collections and then apply addition strategies to determine the sum of the total collection. **Questions** • How are 76¢ and $0.76 alike? How are they different? • What symbol would be appropriate to use for a collection of coins less than a dollar? Greater than a dollar? • How can I write 76 cents in two different ways? **Teacher Notes** *Students are expected to use the notation*

			for money rather than describe their use. 2.5.A **Distractor Factor:** *Students may not recognize the heads and/or tails side of a coin; Students may not recognize non-traditional coins; Students may confuse the size of the coin with its value (i.e. a nickel is worth more than a dime because it is larger in size).*
TEKS/Student Expectations	**TEKS/ELPS Integration**	**Instructional Strategies/Resources**	**Clarifications and Examples**
The student is expected to: 2.11.A-calculate how money saved can accumulate into a larger amount over time; (Supporting Standard-NEW STANDARD!!!) 2.11.B-explain that saving is an alternative to spending; (Supporting Standard-NEW STANDARD!!!) 2.11.C-distinguish between a deposit and a withdrawal; (Supporting Standard-NEW STANDARD!!!)	2.11.A **Supports Readiness Standard By:** Calculating how savings accumulates larger amounts over time will support one's ability to manage financial resources more effectively for a lifetime of financial security. 2.11.B **Supports Readiness Standard By:** Explaining savings and spending will support one's ability to manage financial resources more effectively for a lifetime of financial security. 2.11.C **Supports Readiness Standard By:** Distinguishing between a deposit and a withdrawal will support one's ability to manage financial resources more effectively for a lifetime of financial security. .	2.11.A **Instructional Implications:** Instruction should include discussions about how saving money over a period of time can yield you a larger amount of money. Providing real world second grade examples of savings accumulation will allow students to relate to the state expectation (i.e. Saving your positive behavior tickets will allow you to buy a more expensive prize from the class store). Perhaps, story problems involving real world situations of how money can be saved over a period of time could be incorporated into the Number and Operations strand (see 2.4C). 2.11.B **Instructional Implications:** Students will need to distinguish between spending money (on either wants or needs) and saving money (for either wants or needs). Providing real world second grade examples of student spending versus saving will allow students to relate to the state expectation (i.e. spending a student's weekly allowance on video arcade games versus saving his/her money to purchase a video game that can be played at home over and over). Story problems involving real world situations of money being spent and saved could be incorporated into the Number and Operations strand (see 2.4C). 2.11.C **Instructional Implications:** Students will decipher between a deposit (funds placed in to an account) and withdraw (funds removed from an account). Providing real world second grade examples of a deposit and a withdrawal will allow students to relate to the state expectation (i.e. Joshua's dad deposits $20 into Joshua's school lunch account. Every time that Joshua eats lunch at school, the school withdrawals $2 from the account). Story problems involving real world situations of money being deposited and withdrawn could be incorporated into the Number and Operations strand (see 1.2E/F/G and 1.3F).	**Focus** Build an understanding of earning and saving money over time. Distinguish between and deposit and withdrawal. **Teacher Notes** *Integrate with Social Studies* *Resources Ex: Needs and Wants* *Consumers and Producers* *Goods and Services*

The student is expected to: 2.11.D-identify examples of borrowing and distinguish between responsible and irresponsible borrowing; (Supporting Standard-NEW STANDARD!!!) 2.11.E-identify example of lending and use concepts of benefits and costs to evaluate lending decisions. ; (Supporting Standard-NEW STANDARD!!!) 2.11.F-Differentialte between producers and consumers and calculate the cost to produce a simple item. (Supporting Standard-NEW STANDARD!!!)	2.11.D **Supports Readiness Standard By:** Understanding the role of a responsible borrower will support one's ability to manage financial resources more effectively for a lifetime of financial security. 2.11.E **Supports Readiness Standard By:** Identifying the benefits and costs to lending will support one's ability to manage financial resources more effectively for a lifetime of financial security. 2.11.F **Supports Readiness Standard By:** Understanding the difference between producers and consumers and calculating the cost to produce a simple item will support one's ability to manage their financial resources more effectively for a lifetime of financial security. **ELPS** 3 (F) ask and give information ranging from using a very limited bank of high-frequency, high-need, concrete vocabulary, including key words and expressions needed for basic communication in academic and social contexts, to using abstract and content-based vocabulary during extended speaking assignments; 3 (G) express opinions, ideas, and feelings ranging from communicating single words and short phrases to participating in extended discussions on a variety of social and grade-appropriate academic topics;	2.11.D **Instructional Implications:** Providing real world second grade examples of borrowing will allow students to relate to the state expectation (i.e. borrowing a pencil from a friend, borrowing a dollar from your mom, borrowing a video game from a brother, etc.). Classroom discussion should extend to the difference between responsible and irresponsible borrowing (i.e. Responsible borrowing means returning the item in a timely manner and returning the item in good condition. Irresponsible borrowing means not returning the item, not returning the item in a timely manner, returning the item damaged, or losing the item). 2.11.E **Instructional Implications:** Providing real world second grade examples of lending will allow students to relate to the state expectation (i.e. lending a pencil to a classmate, lending a dollar to your best friend, lending a video game to your brother, etc.). Classroom discussion should extend to the difference between the benefits and costs to lending (i.e. benefits: make a new friend, earn interest on the money lent; get to play the video game with someone instead of alone) and costs. (i.e not having enough money for school supplies or not being able to play a video game.) 2.11.F **Instructional Implications:** This supporting standards serves as an informal study of producers and consumers in terms of economics. Instruction should make connections to those terms in relationship to the real world (i.e. People are consumers as they buy groceries from the producer, our local grocery store. The grocery store becomes the consumer as they rely on the local farmers for their product, etc.). Classroom discussions can then lead to the costs involved for producers to make simple items (i.e. The production of shoes include the cost of leather, laces, rubber, dye, design, advertisement, shoe salesman, etc.) Perhaps, story problems involving real world situations of the cost to produce simple items could be incorporated into the Number and Operations strand (see 1.2E/F/G and 1.3F).	**Focus** *Identify examples of borrowing and lending. Understand the relationship between the two. Understand the reasons for borrowing and the implications and potential benefits of lending*

Course: Grade 2 Math	Bundle 6: Solving One-Step and Multi-Step Word Problems up to 1,000	December 1 -19 (15 days)

Understandings

Strategies can be used to solve addition and subtraction word problems.

Rigor Questions

How do you select an appropriate problem solving strategy?
How can you prove your answer?

Vocabulary: Cognitive Complexity Verbs for TEKS: **Use;**

one-step problem; multi-step problems; addition; subtraction; strategies; algorithm; unknown; term; difference; number sentence/equation; subtraction; sum;

TEKS/Student Expectations	TEKS/ELPS Integration	Instructional Strategies/Resources	Clarifications and Examples
The student is expected to: 2.4.C-solve one-step and multi-step word problems involving addition and subtraction within 1,000 using a variety of strategies based on place value, including algorithms; (Readiness Standard) **Current Standard**: 2.3B Model addition and subtraction of two digit numbers with objects, pictures, words, and numbers; 2.3C Select addition or subtraction to solve problems using two-digit numbers, whether or not regrouping is necessary. **Cognitive Change**: Added the use of multi-step word problems. **Content Change**: Added the types of process for adding and subtracting of two-digit numbers; Added emphasis on the knowledge of place value and properties of operations; Added the addition/subtraction of up to four two-digit numbers; Extended addition/subtraction within 1,000.	2.4.C STAAR Grade Level Scaffold: 4.4A add and subtract whole numbers and decimals to the hundredths place using the standard algorithm (R) 3.4A 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 (R) **ELPS** 4 (K) demonstrate English comprehension and expand reading skills by employing analytical skills such as evaluating written information and performing critical analyses commensurate with content area and grade-level needs.	2.4.C **Instructional Implications:** In conjunction with 2.4B, students will apply their strategies for addition and subtraction to solve real world problems. Instruction should include how the subtraction symbol represents distance (i.e. How far away is 3 from 11 on the number line in the following problem, 11 - 3 = __?). This understanding of subtraction representing distance will lay the foundation for future learning of subtraction of integers (i.e. In the problem 11 --(-3) = 14, the number -3 is 14 spaces away from 11). In adherence to the standard, students are required to solve multi-step word problems. Instruction should include samples of multiple step addition, subtraction, and a mixture of addition and subtraction problems. Students may need a visual to represent multiple-step understanding. Word problems should include a variety of contexts. **Joining**: Sarah had 43 pencils. Juan gave her 18 more pencils. How many pencils does Sarah have now? Sarah had 25 pencils. Juan gave her some more pencils. Now Sarah has 43 pencils. How many pencils did Juan give her? Sarah had some pencils. Juan gave her 18 pencils. Now Sarah has a total of 43 pencils. How many pencils did Sarah have to begin with? **Separating**: Sarah had 43 pencils. She gave 18 pencils to Juan. How many pencils does Sarah have now? Sarah had a total of 43	**Focus** Students will incorporate addition/subtraction strategies already learned to solve one-step and multi-step word problems up to 1,000. **Questions** •Billy had 327 goats on his farm. His dad bought 75 more goats at the market. How many goats does Billy have on the farm? **Teacher Notes** *Establish a consistent problem solving strategy to solve word problems (read the problem, restate question, identify important/extra information, make a plan, solve, etc.).* *If students are ready, move towards the algorithm. The revised SE includes the addition and subtraction of 3 digit numbers.* *The constraint of "within 1,000" has been added.* *Specificity has been added as to the type of word problems students may be expected to solve. Problems may be one-step of multi-step. Paired with 2(4)(B), the problems in 2(4)(C) would be limited to addition of "up to four two-digit numbers" and subtraction of "two-digit numbers."* *Strategies may include properties of operations. For example, 432+241 may be thought of as (400+200)+(30+40)+(2+1).* *Specificity has been added regarding strategies*

		pencils. She gave some to Juan. Now she only has 25 pencils. How many pencils did she give to Juan? Sarah had some pencils. She gave 18 to Juan. Now Sarah has 25 pencils left. How many pencils did Sarah have before? **Comparing**: Juan has 43 pencils and Sarah has 25 pencils. How many more pencils does Juan have than Sarah? Sarah has 18 fewer pencils than Juan. If Sarah has 25 pencils, how many pencils does Juan have? Juan has 18 more pencils than Sarah. If Juan has 43 pencils, how many pencils does Sarah have? If Juan has 43 and Sarah has 25, how many more does Sarah need to have the same amount as Juan?	*used to solve problems.* *Fluency with this skill occurs in grade 3.* 2.4.C **Distractor Factor** *Students may try to apply "key words" to select the appropriate operation instead of understanding the context of the problem.; Students may not recognize a number sentence and its inverse as being equivalent (i.e. 42 - 18 = ___ is the same things as 18 + ___ = 42).*
TEKS/Student Expectations	**TEKS/ELPS Integration**	**Instructional Strategies/Resources**	**Clarifications and Examples**
The student is expected to: 2.7.C-represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem.(Supporting Standard) **Current Standard**: 2.5C Use patterns and relationships to develop strategies to remember basic addition and subtraction facts; determine patterns in related addition and subtraction number sentences. **Cognitive Change**: N/A **Content Change**: Added the application of basic facts to real world situations; Deleted the term "fact families"; Added the varying of the unknown in the number sentence.	2.7.C **Supports Readiness Standard By:** Relating addition and subtraction number sentences/equations supports a student's ability to represent and solve addition and subtraction problems.	2.7.C **Instructional Implications:** In conjunction with 2.4, students continue to demonstrate their understanding of addition and subtraction with the appropriate number sentence. Instruction should vary the context of +/- type problems provided to students (see 2.4C for examples). In adherence to the standard, students should represent the same word problem with a variety of number sentences (i.e. 17 + 18 = ____; 18 + 17 = ____; ____ = 18 + 17; ___= 17 + 18); (i.e. 42 - 16 = ____; ___ = 42 - 16; 16 + ___ = 42; 42 = ___ + 16).	**Focus** Solve word problems where there is an unknown or missing part of the problem. **Question and Stems** • There were 75 students on the playground. Mrs. Clark called in some students to work on a project. There were 39 students still on the playground. How many students went inside with Mrs. Clark? **Teacher Notes** *When paired with revised SEs 2.1C and 2.1D, the expectation is that students represent problems with objects, manipulatives, diagrams, language, and number.*

Course: Grade 2 Math	Bundle 7: Generate and Solve One-Step and Multi-Step Word Problems up to 1,000	January 5- 30 (19 days)

Understandings

- Strategies can be used to generate and solve addition and subtraction problems.

Rigor Questions

How do you select an appropriate operation when solving problems?
How can I use my knowledge of problem solving to create math problems?

Vocabulary: Cognitive Complexity Verbs for TEKS: **Use; Generate**

solve; generate; one-step problem; multi-step problems; addition; subtraction; strategies; number sentence; whole numbers (0-1,000)

TEKS/Student Expectations	TEKS/ELPS Integration	Instructional Strategies/Resources	Clarifications and Examples
The student is expected to: 2.4.D-generate and solve problem situations for a given mathematical number sentence involving addition and subtraction of whole numbers within 1,000. (Readiness Standard) **Current Standard**: 2.3B Model addition and subtraction of two digit numbers with objects, pictures, words, and numbers; 2.3C Select addition or subtraction to solve problems using two-digit numbers, whether or not regrouping is necessary. **Cognitive Change**: N/A **Content Change**: Students will generate and solve a problem for a "given" number sentence; Defined sums and differences within 1,000.	2.4.D- STAAR Grade Level Scaffold: 3.4A 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 (R); 3.5A represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations (R) ELPS 5 (F) write using a variety of grade-appropriate sentence lengths, patterns, and connecting words to combine phrases, clauses, and sentences in increasingly accurate ways as more English is acquired;	2.4.D- **Instructional Implications:** In adherence to the standard, students not only have to solve word problems that are provided to them, but they must also create their own story problems when given a number sentence. This standard will assess whether students understand the conceptual difference between addition and subtraction. Instruction should provide students opportunities to write story problems with multiple representations of various number sentences (i.e. 42 - 18 = ___; __ = 42 - 18; 18 + ___ = 42; 18 + ___ + 6 = 42; __ = 42 - 6 - 18; ____ = 42 - 18 + 4).	**Focus** Students will generate and solve addition/subtraction word problems within 1,000. **Question and Stem** • Using the numbers _____ and _____ create an addition word problem. **Teacher Notes** • Give students the opportunity to create problems with multiple steps, missing parts, more than 2 two-digit numbers, extra information, etc. *The revised SE includes the addition and subtraction of 3 digit numbers.* *Students must be provided with a mathematical number sentence in order to generate and then solve their problem situations.* 2.4.D- **Distractor Factor:** *Students may try to apply "key words" to select the appropriate operation instead of understanding the context of the problem; Students may not recognize a number sentence and its inverse as being equivalent (i.e. 42 - 18 = __ is the same things as 18 + ___ = 42).*

Course: Grade 2 Math	Bundle 8: Graphing	February 2- 20 (14 days)

Understandings

- Make predictions, draw conclusions, and create word problems using data from graphs.
- Organize data into pictographs and bar graphs.

Rigor Questions

How can making a graph help you solve problems or understand data?
What can you infer from data displayed on a graph?
What kinds of questions can be generated from a graph?
How does organized data inform or help us make decisions?

Vocabulary: Cognitive Complexity Verbs for TEKS: **Organize; Write; Analyze; Create**

data points; pictograph; bar graph; category; intervals; one-step word problem; conclusions; predictions; data; graph title; labels; dot plot; frequency table; horizontal; information; vertical

TEKS/Student Expectations	TEKS/ELPS Integration	Instructional Strategies/Resources	Clarifications and Examples
The student is expected to: 2.10.A-explain that the length of a bar in a bar graph or the number of pictures in a pictograph represents the number of data points for a given category; (Supporting Standard-NEW STANDARD!!!) 2.10.B-organize a collection of data with up to four categories using pictographs and bar graphs with intervals of one or more; **Current Standard**: 2.11A Construct picture graphs and bar-type graphs. **Cognitive Change**: Changed "constructing" to "organizing" data. **Content Change**: Identified data with up to four categories; Changed from picture graphs to pictographs; Added the intervals being defined as one or more. 2.10.C-write and solve one-step word problems involving addition or subtraction using data represented within pictographs and bar graphs with intervals of one; (Readiness Standard-NEW STANDARD!!!) 2.10.D-draw conclusions and make predictions from information in a graph. (Supporting Standard) **Current Standard**: 2.11B Draw conclusions and answer questions based on picture graphs and bar-type graphs. **Cognitive Change**: Extended the analysis of data to include "making" predictions. **Content Change**: Deleted the types of graphs to be used; however, bar graphs and pictographs are referenced in 2.10B.	2.10A **Supports Readiness Standard By:** Understanding the length of the bar graph or the number of pictures in a pictograph represents the number of data points for a given category will support a student in accurately solving addition/subtraction problems and summarization of data. 2.10.B **Supports Readiness Standard By:** Having students collect, sort, and organize their own data allows students to be able understand how to solve various problems based on the data. Understanding how to create and interpret data using pictographs and bar graphs will evolve into the use of frequency tables and dot plots in future grades. 2.10.C STAAR Grade Level Scaffold:4.9B 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 (S) 3.8B solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals (S) 2.10.D **Supports Readiness Standard By:** Drawing conclusions and making predictions from information in a graph will allow students to write and solve associated word problems more effectively. ELPS 4 (J) demonstrate English comprehension and expand reading skills by employing inferential skills such as predicting, making connections between ideas, drawing inferences and conclusions from text and graphic sources, and finding supporting 5 (G) narrate, describe, and explain with increasing specificity and detail to fulfill content area writing needs as more English is acquired.	2.10A **Instructional Implications:** According to the TEKS, students will organize data (i.e. results of a poll of 2nd grade students' favorite color) in a bar graph or pictograph. As students begin organizing the data, they need to understand the difference between category (i.e. red, green, blue, etc.) and data points (i.e. number of students that selected a particular category). The length of bar graph or the number of pictures in a pictograph identifies the number of data points for a particular category. 2.10.B **Instructional Implications:** It is imperative for students to generate a question before a unit of study on data (i.e. What type of flowers grow in my Grandmother's garden?). Instruction should encourage students to extend beyond two categories (i.e. roses, carnations, and daffodils), yet restrict the sorting to within four categories (i.e. sorting by the different color of flowers may yield too many categories). Students are then to collect their own data as this will make more of a personal connection when interpreting the data. Students will organize their data through the use of a pictograph (one picture/icon represents one or more than one piece of data) or bar graph (intervals of one or more). Ensure that students title and label their models/representations. 2.10.C **Instructional Implications:** As students organize their data into pictographs and/or bar graphs (see 2.10B), instruction should then lead students to creating their own questions (i.e. How many more daffodils did my grandmother have in her garden than roses? How many roses and carnations are there in Grandma's garden?). Designing appropriate questions that relate to the data is an informal way to assess whether students understand the information represented in the graphs. Student could then exchange their graphs and ask fellow classmates to answer their self-generated questions. Note that in the difference between 2.10B and 2.10C; students must organize data with interval graphs of one or more but the writing and solving of problems is limited to graphs with intervals of one only. 2.10.D **Instructional Implications:** According to	**Focus** Make predictions and interpret data provided from a graph. Write and solve one-step word problems using information from pictographs and bar graphs. **Questions and Stems** • What two categories will give you a total of _____? • Which statement about ____is true/false? • Which two categories would be less than ___? **Teacher Notes** Graphs by one interval only. ***2.10A*** *- Specificity has been added in how students are expected to be able to explain their construction of a picture graph (pictograph) or a bar-type graph (bar graph).* ***2.10B*** *- The number of categories has been constrained to four. Intervals may be one or more.* ***2.10C*** *- Specificity has been added regarding the types of questions students are expected to answer.* *Specificity has been added regarding intervals on the graphs.* *Students are now expected to write problems involving addition or subtraction using data represented within the stated graphs.* ***2.10D*** *- Specificity has been added regarding the types of questions. The questions for this SE will focus on making predictions.* **Pairing these SEs shows that the graphs are pictographs and bar graphs.* 2.10.C **Distractor Factor:** Students may misinterpret pictographs in which each picture represents a value other than one; Students may misread bar graphs that have scaled intervals; When representing the same set of data on the two types of graphs, students may interpret the data as different because they are represented with different graphs; When representing the same set of data vertically and horizontally, students may interpret the data as different because

		the TEKS, students need to collect, organize and display their own data. Personalizing such activities will allow students to make more sense of the data and summarize more appropriately. Instruction needs to include multiple categories (i.e. Extend survey question, "Do you like cats or dogs?" to "What is your favorite animal?"). In accordance with the standard, data should be represented on a pictograph or bar graph. Vertical and horizontal representations should be included. Pictographs should include symbolism that does not represent one-to-one correspondence (i.e. A smiley face represents 4 people) and portion representations (i.e. A picture of half a smiley face yields 2 people). Bar graphs include scaled intervals (i.e. information on the x- or y-axis skip count by tens). Extend instruction to include representing the same data set in both type of displays to compare. Summarization of data should also include being able to determine the total amount of data collected by viewing a graph (i.e. The sum of each bar graph length will yield the total number of data pieces).	of the difference in the visual representations; Students may apply the use of "key words" instead of understanding the context of the problem.

Course: Grade 2 Math	Bundle 9: Fractions	February 23 – March 13 (14 days)

Understandings

- Fractions represent parts of a whole or part of a group or set of objects.
- Compare fractions with halves, fourths, and eighths.

Rigor Questions

How do we use fractions in our everyday lives?
How many equal parts does it take to make a whole?
What are some ways to represent halves, fourths, and eighths?
What do the parts of a fraction tell you about its size?

Vocabulary: Cognitive Complexity Verbs for TEKS: **Identify; Apply; Analyze; Use**

equal parts; halves; fourths; eighths; examples; non-examples; fractional parts; whole; fractional parts; fractional units

TEKS/Student Expectations	TEKS/ELPS Integration	Instructional Strategies/Resources	Clarifications and Examples
The student is expected to: 2.3.A-partition objects into equal parts and name the parts, including halves, fourths, and eighths, using words; (Supporting Standard-NEW STANDARD!!!) 2.3.D-identify examples and non-examples of halves, fourths, and eighths. (Supporting Standard-NEW STANDARD!!!)	2.3.A **Supports Readiness Standard By:** This supporting standard develops the conceptual understanding of fractional parts of a whole. Being able to physically partition objects into equal parts in various ways will allow students to observe how the size of the parts vary depending on the number of equal parts. 2.3.D **Supports Readiness Standard By:** Identifying examples and non-examples of fractional parts of the same whole will support student understanding of the part-to-whole relationship and the size of the parts. This knowledge will provide the foundation for being able to visually compare two fractions and/or concretely represent equivalent fractions.	2.3.A **Instructional Implications:** As identified by the cognitive expectation of this standard, students should be provided with a whole object and asked to partition it into two, four, and/or eight equal parts. Students should then be able to describe the equal parts in words only (i.e. Halves, fourths, and eighths). Instruction will not extend to the symbolic (i.e. 1/2, 1/4, 1/8) until grade 3. Encourage students to find more than one way to divide a given shape into equal parts (i.e. A square can be divided in two equal parts vertically, horizontality, or diagonally). This will develop a student's understanding of how it is possible for various shapes to represent the same fractional part (i.e. The rectangle formed from dividing the square vertically represents one-half and so does the triangle formed when the same square was divided diagonally). The use of geoboards will support the trial and error process of finding more than one way and comparing the amount of area represented in each fractional part regardless of the shape created. 2.3.D **Instructional Implications:** In conjunction with 2.3A, as students are	**Focus** Break objects into equal parts (halves, fourths and eighths) and identify examples and non-examples of each. **Question** • Looking at the picture, what fraction of the whole is shaded? • Shade 3 out of 4 stars. • How can I cut the following shape into fourths? • Which of the following pictures is not an example of 3/4. • How can I use fourths to make halves? How can I use eighths to make fourths? **Teacher Notes** *Write and display fractions three ways (1 out of 4, 1/4, one-fourth).* *Mastery (assessments) should focus on halves, fourths, and eighths.* ***2.3A -** Specificity has been added to the use of*

		partitioning figures into 2/4/8 equal parts and describe them as halves/fourths/eighths, students should recognize examples (i.e. Regular and irregular shapes divided equally) and non-examples of such partitions (i.e. Whole objects divided unequally). With the use of geoboards, students would be able to verify examples of halves/fourths/eighths by comparing the amount of area in each part.	*concrete models. Students are to partition objects in addition to using previously partitioned objects. Objects may be linear or area in form, such as strips, lines, regular polygons, or circles.* *Specificity has been added with the naming fractions with words rather than fraction notation of a/b. The words may include names such as "one-half" or "three-fourths."* *Students are not expected to note the relationship between the number of fourths that equal one-half, etc.* ***2.4D -**Specificity has been added to illustrate how students might justify their thinking related to halves, fourths, and eighths.*
The student is expected to: 2.3.B-explain that the more fractional parts used to make a whole, the smaller the part; and the fewer the fractional parts, the larger the part; (Readiness Standard) **Current Standard**: 2.2A Use concrete models to represent and name fractional parts of a whole object (with denominators of 12 or less); 2.2B Use concrete models to represent and name fractional parts of a set of objects (with denominators of 12 or less) **Cognitive Change**: Added the "partitioning" of objects into equal parts **Content Change**: Limited denominators to halves, fourths, and eighths.	2.3.B STAAR Grade Level Scaffold: 4.3D compare two fractions with different numerators and different denominators and represent the comparison using the symbols >, =, or < (R) 3.3H compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models (R) ELPS3 (G) express opinions, ideas, and feelings ranging from communicating single words and short phrases to participating in extended discussions on a variety of social and grade-appropriate academic topics; ELPS 5 (F) write using a variety of grade-appropriate sentence lengths, patterns, and connecting words to combine phrases, clauses, and sentences in increasingly accurate ways as more English is acquired; and	2.3.B **Instructional Implications:** In conjunction with 2.3A, as students are partitioning whole objects into 2, 4, and 8 equal parts, they need to recognize that the more parts an object is divided into, the smaller the parts become; the fewer the parts an object is divided into, the larger parts become. Instruction should provide real world examples to build conceptual understanding (i.e. Would you rather share a candy bar with two friends or four? Would you rather have a slice of a pizza that was cut into eight equal parts or ten equal parts).	**Focus** The more fractional parts you have (denominator) the smaller the part. The fewer fractional parts you have, the larger the part. **Questions** • Which fraction is larger, 1/4 or 1/8? Explain how you know. **Teacher Notes** *Use concrete models such as fraction strips or fraction rods to explore the concept of halves, fourths and eighths.* *Specificity has been added regarding what students are expected to be able to explain when communicating about fractional parts of a whole object.* 2.3.B **Distractor Factor:** *Students may not understand that the more times you divide a whole object into parts, the smaller the parts become; Students may think that 1/8 is larger than 1/6 because eight is bigger than six; Students may not understand that the fractional parts must be equal.*

The student is expected to: 2.3.C-use concrete models to count fractional parts beyond one whole using words and recognize how many parts it takes to equal one whole; (Supporting Standard-NEW STANDARD!!!)	2.3.C **Supports Readiness Standard By:** Recognizing how many parts it takes to equal one whole will direct the student to focus on the size of the parts. The size of the parts will allow the learner to more accurately compare fractions. Counting fractional parts beyond one whole supports the concrete understanding of improper and mixed number fractions being equivalent (i.e. "Five fourths" is the same as "one and one-fourth").	2.3.C **Instructional Implications:** All fraction lessons should begin with identifying how many parts it takes to equal one whole (i.e. if the whole is represented by the large triangle, then it takes four equal parts to represent the whole). This first step will alleviate the misconception of whether a fractional representation is greater than or less than one whole. In adherence to this standard, students will use manipulatives to represent fractional parts beyond one whole (i.e. Students identify that the whole is made up of four equal parts and they will be counting in fourths. Students must count each shaded part as one-fourth, two-fourths, three-fourths, four-fourths, five-fourths. Students relate that if it takes four parts to represent one whole. Thus, the pictorial representation of five-fourths can also be called one and one-fourth). Instruction is limited to word use only (i.e. one-fourth; two-fourths, etc.) not the symbolic representation (i.e. 5/4 or 1 ¼1/4).	**Focus** Using words and concrete models, count fractional parts beyond one whole and identify how many parts it takes to equal one whole. **Questions** • If you have 1/4, how many more parts do you need to make one whole? **Teacher Notes** • Continue to use concrete models to describe fractions of a whole and beyond. *Counting may include a sequence of fractional names such as "one-fourth," "two-fourths," "three-fourths," "four-fourths," "five-fourths" or "one and one-fourth." Using a sentence such as "four-fourths equals one whole" would indicate recognition of how many parts it takes to equal one whole.*

Course: Grade 2 Math	**Bundle 10: Geometry/Area**	**March 23 – April 17 (19 days)**	

Understandings

- Geometric shapes can be compared and classified by their attributes.
- Use square units to find the area of a rectangle.

Rigor Questions

How can you use mathematical language to describe and compare 2D and 3D shapes?
How can I use attributes to create 2D and 3D shapes?
What new shapes can be created by cutting a shape?
How can I find the area of a rectangle?

Vocabulary: Cognitive Complexity Verbs for TEKS: **Create; Apply**

attributes; two-dimensional; side(s); vertex/vertices; polygons; three-dimensional; solids; sphere; cone; cylinder; rectangular prism; cubes; compose; decompose; polygon; shape; edges; faces; sides; properties; geometric parts; area; gaps/overlaps; language as: about, a little more than, approximately

TEKS/Student Expectations	TEKS/ELPS Integration	Instructional Strategies/Resources	Clarifications and Examples
The student is expected to: 2.8.A-create two-dimensional shapes based on given attributes, including number of sides and vertices; (Supporting Standard) **Current Standard**: 2.7A Describe attributes (the number of vertices, faces, edges, sides) of two-and three-dimensional geometric figures such as circles, polygons, spheres, cones, cylinders, prisms, and pyramids, etc. **Cognitive Change**: Changed "describing" of the attributes of a figure to "creating" and	2.8.A **Supports Readiness Standard By:** Creating two-dimensional shapes given the number of sides and vertices allows students to focus on the geometric attributes of a figure. This attention to specific attributes will support the classification and sorting of various polygons. 2.8.C STAAR Grade Level Scaffold: 4.6D classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size (R) 3.6A 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 (R)	2.8.A **Instructional Implications:** Students are provided with a variety of materials (i.e. toothpicks, straws, string, marshmallows, clay, etc.) and a description of a two-dimensional shape (i.e. polygon with five sides and five vertices). Students are to use the materials to build the shape or arrange the materials to create the shape based on the given attributes and associate the materials to the appropriate geometric attribute (i.e. The five marshmallows represent the five vertices and the five toothpicks represent the five sides of the pentagon). Instruction should extend to the study of attributes by taking an already	**Focus** Create and classify two-dimensional shapes with 12 or fewer sides according to its attributes (sides and vertices). **Questions and Stem** • How many sides and vertices does a rectangle have? • Given the following attributes _____, what shape can you make? • Explain why you might sort a trapezoid and a

"classifying/sorting" shapes based on attributes. **Content Change**: Defined polygons to include 12 or fewer sides; Deleted circles. 2.8.C-classify and sort polygons with 12 or fewer sides according to attributes, including identifying the number of sides and number of vertices; (Readiness Standard) **Current Standard**: 2.7A Describe attributes (the number of vertices, faces, edges, sides) of two-and three-dimensional geometric figures such as circles, polygons, spheres, cones, cylinders, prisms, and pyramids, etc. **Cognitive Change**: Changed "describing" of the attributes of a figure to "creating" and "classifying/sorting" shapes based on attributes. **Content Change**: Defined polygons to include 12 or fewer sides; Deleted circles.	3.6B 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 (S) **Content Change**: Added the tool of paper/pencil; Added the use of techniques including mental math, estimation, and number sense.	created shape and modify it to create a new shape (i.e. Students made a rectangle out of clay and are now asked to modify the rectangle to make it a square and explain how the attributes/properties of the two shapes were similar yet different). 2.8.C **Instructional Implications:** Students must be given a variety of two-dimensional shapes to sort based on their attributes. In adherence to the standard, students need exposure to polygons up to 12 sides (i.e. triangles, quadrilaterals, pentagons, hexagons, heptagons, octagon, nonagon, decagon, etc.). Students need to be exposed to both regular (i.e. pentagon with all five sides equal in length) and irregular (i.e. chevron shaped pentagon where all sides are not of equal length) two-dimensional figures.	square in the same group? • *"I have... who has..." with shape attributes* **Teacher Notes** *Use shape riddles where attributes are provided and students guess the shape.* ***2.8A-*** *The revised SE comes from the current grade 1 TEKS: Geometry 1.5.D* *Students are expected to create shapes based on given attributes rather than given concrete models.* ***2.8C*** *- Specificity regarding 2-d figures has been added.* *The revised SE has added depth with classification of polygons. The comparison of similarities and differences supports classification.* 2.8.C **Distractor Factor:** *Students may interchange the term side referencing two-dimensional shapes and edge referencing a three-dimensional shape; Students may not view a square as a rectangle.*
TEKS/Student Expectations	**TEKS/ELPS Integration**	**Instructional Strategies/Resources**	**Clarifications and Examples**
The student is expected to: 2.8.B-classify and sort three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes as special rectangular prisms), and triangular prisms, based on attributes using formal geometric language; (Readiness Standard) **Current Standard**: 2.7A Describe attributes (the number of vertices, faces, edges, sides) of two- and three-dimensional geometric figures such as circles, polygons, spheres, cones, cylinders, prisms, and pyramids; 2.7B Use attributes to describe how 2 two-dimensional or 2 three-dimensional figures are alike or different. **Cognitive Change**: Changed "describing" and "using" the attributes of a figure to "classifying and sorting" based on attributes.	2.8.B STAAR Grade Level Scaffold: 3.6A 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 (R) ELPS 3 (G) express opinions, ideas, and feelings ranging from communicating single words and short phrases to participating in extended discussions on a variety of social and grade-appropriate academic topics; 5 (F) write using a variety of grade-appropriate sentence lengths, patterns, and connecting words to combine phrases, clauses, and sentences in increasingly accurate ways as more English is acquired; and	2.8.B **Instructional Implications:** Students must be given a variety of three-dimensional solids to sort based on their attributes (i.e. number of edges, number vertices, number/types of faces etc.). In adherence to the standard, solids are limited to prisms and do not include pyramids. It is essential for students to recognize that a cube is a rectangular prism; it is a special rectangular prism that has all edges equal in length. Instruction should relate how three-dimensional figures are comprised of two-dimensional shapes (i.e. six rectangles are put together to make a rectangular prism).	**Focus** Classify 3D solids(sphere, cone, cylinder, rectangular prism, cube, triangular prism) based on attributes and using formal geometric language (vertices, edges, faces, and apex). **Questions and Stems** • Which shape has four triangular faces and one square face? • How many faces, edges and vertices does a cube have? **Teacher Notes** • *Not teaching pyramid.* • *For a cone the word vertex and apex can be used interchangeably. An apex is the point on a geometric figure that is the farthest from the*

Content Change: Added the type of prisms (rectangular prisms to include cubes) and triangular prisms; Deleted pyramids.			*base.* *Specificity regarding 3-d figures has been added.* *Formal geometric language includes terms such as "vertex," "edge," and "face."* *The revised SE has added depth with classification of solids. The comparison of similarities and differences supports classification and sorting.* 2.8.B **Distractor Factor:** Students may interchange the term side referencing two-dimensional shapes and edge referencing a three-dimensional shape; Students may count the common vertices of a three-dimensional figure twice as they view each face independently; Students may not view a square as a rectangle or a cube as a rectangular prism.
The student is expected to: 2.8.D-compose two-dimensional shapes and three-dimensional solids with given properties or attributes; (Supporting Standard) **Current Standard**: 2.7B Use attributes to describe how 2 two-dimensional or 2 three-dimensional figures are alike or different. **Cognitive Change**: Changed "using" attributes to describe the similarities and differences of 2D and 3D figures to "composing" such figures given the attributes. **Content Change**: N/A 2.8.E-decompose two-dimensional shapes such as cutting out a square from a rectangle, dividing a shape in half, or partitioning a rectangle into identical triangles and identify the resulting geometric parts. (Supporting Standard) **Current Standard**: 2.7C cut two-dimensional geometric figures apart and identify the new geometric figures formed. **Cognitive Change**: Changed "cutting" to "decomposing" of geometric figures. **Content Change**: Added such as examples for clarity (cutting out a square form a rectangle, dividing a shape in half, or partitioning a rectangle	2.8.D **Supports Readiness Standard By:** Creating two- and three-dimensional shapes given attributes (i.e. the number of sides and vertices) and properties (i.e. all sides are of different lengths) requires students to focus on the geometric attributes of a figure. This attention to specific attributes and properties will support the classification and sorting of various figures. 2.8.E **Supports Readiness Standard By:** Decomposing shapes into other polygons will support the classification and sorting of two-dimensional figures. The student will have to focus on the various attributes to identify the resulting geometric parts.	2.8.D **Instructional Implications:** Students are provided with a variety of materials (i.e. toothpicks, straws, string, marshmallows, clay, etc.) and a description outlining properties and/or attributes for a given figure (i.e. a solid with 8 vertices, 6 faces and 12 edges which are not all of equal length). Students are to use the materials to build the figure based on the given attributes and associate the materials used to the appropriate geometric attribute (i.e. the 8 balls of clay on each end represent the eight vertices and the 12 straws represent the 12 edges of my rectangular prism. However, I had to cut the straws to be different in length so that it would not represent a cube). 2.8.E As students begin to recognize and describe the attributes of given two-dimensional shapes, instruction will lead to more spatial reasoning development. Students will be given a targeted two-dimensional shape (i.e. a trapezoid) and asked to decompose the figure into different smaller geometric parts (i.e. a rectangle and one triangle). Encourage students to partition shapes in different ways (i.e. one with three triangles; one with two rectangles and one triangle, etc.).	**Focus** Using given attributes compose 2-D and 3-D shapes. Decompose 2-D shapes to create new geometric figures. **Questions and Stem** •What two new shapes can be created when you cut a hexagon? •What 3-D shape is created when you put 4 triangles and one square together? **Teacher Notes** *Only decompose 2-D shapes (cutting 2 squares from a rectangle).* ***2.8D -** The revised SE comes from the current grade 1 TEKS: Geometry 1.5.D* *Students are expected to compose 2-d shapes and 3-d solids such as building a rectangle out of unit squares or building a rectangular prism out of unit cubes.* *Students are expected to compose given properties.* ***2.8E -** The word "cut" has been replaced with the more appropriate word "decompose."*

into identical triangles.			*An example of how a student might decompose a 2-D shape has been provided.* *In grade 2, the focus on decomposing shapes complements the work with fractional parts of a whole.*
TEKS/Student Expectations	**TEKS/ELPS Integration**	**Instructional Strategies/Resources**	**Clarifications and Examples**
The student is expected to: 2.9.F-use concrete models of square units to find the area of a rectangle by covering it with no gaps or overlaps, counting to find the total number of square units, and describing the measurement using a number and the unit; (Supporting Standard) **Current Standard**: 2.9B Selecting a non-standard unit of measure such as square tiles to determine the area of a two-dimensional surface. **Cognitive Change**: Added "describing" the measurement using a number and unit. **Content Change**: Added the understanding that no gaps or overlaps are considered in determining the area.	2.9.F **Supports Readiness Standard By:** Hands-on experiences covering rectangles with square units with no gaps or overlaps develop the concrete understanding of area. The use of square units to cover the region of a rectangle supports the future understanding of how area is reflected in square units.	2.9.F **Instructional Implications:** Students will use square units (i.e. unit cubes, color tiles, sticky not pads, etc.) to determine the area of various rectangles. As non-standard unit of measure has also be used to determine the length of objects (see 2.9A), it will be critical to identify that only the length of one of the sides of the manipulative was used to determine the length of an object. To determine area, we use the entire object (i.e. when measuring length, draw a line along one of the sides to visually demonstrate that we only use this component of the measuring tool to determine length; When measuring area, outline and shade in the area of the square unit). As students begin to measure the area of various rectangles, they need to understand the amount of space inside the object is what to be measured, the unit of measure must be consistent (i.e. unit cubes and color tiles cannot be mixed to cover the area of an object), and manipulatives must completely fill the interior with no gaps or overlaps in the square units. As with any measurement, area will not always be exact. Students should articulate their findings accordingly (i.e. The area of the index card is about 24 color tiles. The amount of space inside of the sticky note pad measures a little more than 20 unit cubes; approximately 88 color tiles cover my notebook).	**Focus** Use concrete models (square units) to find the area of a rectangle. **Questions and Stems** •How many square units does it take to cover the given rectangle? •Find the area of _____? **Teacher Note** Focus is on area, not perimeter. Only find area of rectangles and squares. *Specificity has been added as to how students are expected to use square units to determine the area of a 2-d figure.* *The 2-d figure has been constrained to rectangles, which includes squares.* *The concrete models should be square units, and the measurement should be described using square units such as "24 square units."*

Course: Grade 2 Math	Bundle 11: Time and Measurement	April 20 – May 8 (15 days)

Understandings

- Time can be measured to the nearest minute.
- Objects can be measured with standard units.

Rigor Questions

How can patterns help you identify time on an analog clock?
What strategies can you use to tell time?
How do you determine the length of an object using a variety of tools?

Vocabulary: Cognitive Complexity Verbs for TEKS: **Write; Determine**

length; marked unit; inverse relationship; size of unit; unit of measure; distance; location; place value; standard units (centimeters, inches, feet, etc.); unit size; number line; whole numbers; ruler; meter stick; measuring tape; nearest one-minute; analog clock; digital clock; a.m.; p.m.

TEKS/Student Expectations	TEKS/ELPS Integration	Instructional Strategies/Resources	Clarifications and Examples
The student is expected to: 2.9.G-read and write time to the nearest one-minute increment using analog and digital clocks and distinguish between a.m. and p.m. (Readiness Standard) **Current Standard**: 2.10B Read and write ties shown on analog and digital clocks using five minute increments; 2.10C Describe activities that take approximately one second, one minute, and one hour; 3.12B Tell and write time shown on analog and digital clocks. **Cognitive Change**: Deleted "describing" activities that are representative of time. **Content Change**: Moved the telling of time to the nearest one-minute increment from grade 3 to grade 2; Added the use of the analog and digital clock; Added the knowledge of a.m. and p.m.	2.9.G STAAR Grade Level Scaffold:4.8C solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate (R) 3.7C 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 (S) . ELPS 4 (K) demonstrate English comprehension and expand reading skills by employing analytical skills such as evaluating written information and performing critical analyses commensurate with content area and grade-level needs.	2.9.G **Instructional Implications:** Relate the clock to a circular, closed number line (see 2.2 E/F). Create a number line identifying the whole numbers 0 -12. Demonstrate how to connect both ends of the number line to create a circular number line referencing how the hour numerals on the clock relate to those on a number line. Extend the use of the closed number line to include the minute increments. Instruction should relate the hour and minute hands from the analog clock to the digits represented on a digital clock. Clarify that the use of the colon (:) on the digital clock is to separate the hours (whole) from the minutes (part). Instruction should include discussions about how our day is divided into two equal parts (a.m. and p.m.). Activities that happen from midnight until noon are considered to occur in the a.m. and activities that happen from noon until midnight are considered to occur in the p.m. Creating a timeline of classroom activities with the appropriate a.m./p.m. recordings may support this	**Focus** Read and write time to the nearest one-minute increment using analog and digital clocks. Distinguish between a.m. and p.m. **Question and Stems** • Show the time on the digital clock on an analog clock? • What time is it? • When you are going to bed, would you say 8:00 a.m. or 8:00 p.m.? • What would you be doing at 1:00 p.m.? • Which statement is true about the clock? •What do the marks between the numbers show? •How many minutes if the long hand is pointing to 2 marks part the 3 (15 minutes plus 2 minutes)? **Teacher Notes** *No longer responsible for 'half-past', 'quarter-to', 'quarter-past' vocabulary.*

		understanding .	*We are not responsible for elapsed time; are responsible for telling time to the one-minute increment.* *Specificity has been added with distinguishing between a.m. and p.m.* *Reading and writing time now takes place to the nearest minute rather than five-minute increment.* 2.9.G **Distractor Factor:** Students may confuse the hour and minute hand; Students may not be able to accurately read the hour hand as it falls between two hour points; Students may be able to read time accurately but struggle when asked to represent a given time on a clock; Students may think that activities that happen in the day time are a.m. and activities that happen in the night time are p.m. activities; Students may confuse 12:00 a.m. and 12:00 p.m.
TEKS/Student Expectations	**TEKS/ELPS Integration**	**Instructional Strategies/Resources**	**Clarifications and Examples**
The student is expected to: 2.9.A-find the length of objects using concrete models for standard units of length; (Supporting Standard) **Current Standard**: 2.9A Identify concrete models that approximate standard units of length and use them to measure length. **Cognitive Change**: Deleted "identifying" of concrete models that approximate standard units of measure; however, cognitive expectation is underlying in being to "select" and "use" measurement tools as stated in the TEKS2.9. **Content Change**: N/A 2.9.B-describe the inverse relationship between the size of the unit and the number of units needed to equal the length of an object; (Supporting Standard) **Current Standard**: 1.7C Describe the relationship between the size of the unit and the number of units needed to measure the length of an object.	2.9.A **Supports Readiness Standard By:** This supporting standard develops the conceptual understanding that perimeter is the measurement of length. The use of non-standard units of measure (concrete objects) to measure length will develop a visual benchmark of various lengths which will support a student's ability to estimate lengths more appropriately. 2.9.B **Supports Readiness Standard By:** Measuring the length of objects with a variety of concrete objects will support the understanding that length of objects can be measured in various units. This supporting standard will allow the learner to experience how the shorter the unit of measure, the more units needed to measure the length; the longer the unit of measure, the fewer units needed to measure the length. As students begin moving to measuring with a ruler, this non-standard unit of measurement experience will support how objects can be measured in centimeters and inches and how the inverse relationship between the size of the units and the number of units are needed to equal the length of an object. **ELPS** 3 (G) express opinions, ideas, and feelings ranging from communicating single words and short phrases to participating in extended discussions on a variety of social and grade-appropriate academic topics;	2.9.A **Instructional Implications:** The use of non-standard units of measure (i.e. Teddy bear counters, paper clips, index cards, etc.) will be restricted to only models that represent an approximate standard unit of length (i.e. A unit cube represents a centimeter, a color tile represents an inch, a ruler represents a foot, etc.). As non-standard units of measure will also be used to determine area (see 2.9F), it will be critical to identify that only the length of one of the sides of the manipulative will be used not the entire object (i.e. "When measuring in inches, we will only be using the length of one of the sides of a color tile to determine length"). Students will measure lengths of various objects and record the measurements in standard units of measure (i.e. "The length of a notebook was approximately 11 color tiles in length measuring 11 inches"). It is imperative that instruction allow plenty of time for students to engage in the use of concrete models representing a standard unit of measure as a mental image of the length of a centimeter, inch, foot, yard, etc. will lead to more educated estimations and reasonableness of length (i.e. See 2.9E). 2.9.B Students should measure a given object with more than one unit of measure (i.e. measure the length of an index card using unit	**Focus** Using concrete models to find the length of an object. Students should be able to move back and forth between different units of measure within the same situation. **Question and Stems** • What is the length of the _____? • Given that 3 cars equals 1 bus: -How many buses equals 9 cars? -How many cars equals 6 buses? **Teacher Notes** Inverse relationship: 3 benches = 1 car; 1 car = 3 benches. ***2.9A -*** *Greater specificity has been added with the revised SE by breaking the current SE 2.9A into its component parts.* *The concrete models should represent rather than approximate a standard unit of length such as the edges of inch tiles or centimeter cubes.* ***2.9B -*** *Greater specificity has been added with the revised SE by breaking the current SE 2.9A into its component parts. A student is expected to provide a description such as "the longer the unit, the fewer needed and the shorter the unit, the*

Cognitive Change: N/A **Content Change**: Extended the relationship of the size of the unit and number of units needed to measure length from grade1 in to grade 2.		cubes and color tiles). In conjunction with 2.9A, students record both measurements in standard units of measure (i.e. 5 color tiles=5 inches, 15 unit cubes=15 centimeters). Students need to justify how it is possible to have two different measurement recordings for the same object (i.e. the length of the object was measured with different measurement tools). Instruction is to lead to the discovery that the longer the unit of measure, the fewer units of measure is needed; the shorter the unit of measure, the more units of measure are needed. This concept leads to future understanding of how an object measuring 2 yards in length is not shorter than an object measuring 6 feet in length.	*more needed to measure a length."*
The student is expected to: 2.9.C-represent whole numbers as distances from any given location on a number line; (Supporting Standard) **Current Standard**: 2.8 Use whole numbers to locate and name points on a number line. **Cognitive Change**: N/A **Content Change**: Added the understanding that numbers on a number line represent the distance away from zero. 2.9.D-determine the length of an object to the nearest marked unit using rulers, yardsticks, meter sticks, or measuring tapes; (Supporting Standard) **Current Standard**: 3.11A Use linear measurement tools to estimate and measure lengths using standard units. **Cognitive Change**: Deleted "estimating" of length; however, applied to process standards. **Content Change**: Moved the use of linear measurement tools from grade 3 to grade 2; Limited measurement to the nearest marked unit; Identified the measurement tools to be used.	2.9.C- **Supports Readiness Standard By:** Identifying whole numbers as distances from any given location can relate to the effective use of a ruler. This understanding will support the solving of problems involving length. Being able to represent whole numbers on a number line will support the comparing and ordering of numbers as larger numbers progress to the right and smaller numbers progress to the left of a number line. The understanding of whole numbers as distances from a given location will support the use of a number line as a strategy to add and subtract numbers. 2.9.D **Supports Readiness Standard By:** Hands-on experiences measuring the length of objects with a variety of measurement tools will be essential for students to estimate length and solve problems involving length to include perimeter. 2.9.E STAAR Grade Level Scaffold: 4.5D solve problems related to perimeter and area of rectangles where dimensions are whole numbers (R) 4.5C 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 x w) 4.8C solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate (R) 3.7B determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems (R)	2.9.C-**Instructional Implications:** Students will locate and name points on a number line (see 2.2E/F). Instruction needs to address that whole numbers identified on a number line represent the distance away from zero. This understanding will then be related to the use of the ruler and how the whole numbers identified on a ruler represent a measureable length (see 2.9D). In conjunction with 2.4B/C, instruction could extend the use of a number line in adding and subtracting two-digit numbers (i.e. 39 + ___ = 72) 2.9.D **Instructional Implications:** This standard begins the transition from the use of concrete objects to measure length to the use of a formal measurement tool. Through the lens of the number line, students will begin associating the number line to the representation of various measurement tools (i.e. the whole numbers represented on a ruler). In conjunction with 2.9A, students can begin comparing the size of the concrete object they used to measure length to the standard measuring tool (i.e. Align 12 color tiles next to a ruler to demonstrate how 12 inches equals one foot). Students will measure the lengths of various objects using a variety of standard measurement tools (i.e. ruler, yard stick, meter stick, measuring tape). In adherence to the standard, students will only measure to the nearest whole number. 2.9.E **Instructional Implications:** Instruction should provide a variety of problem situations involving length. Vary the context of the	**Focus** Find the distances between given locations on a number line. Determine the length of an object to the nearest unit using rulers, yardsticks, meter sticks or measuring tape. Solve problems involving length. **Questions and Stems** • Using a ruler, find the length of the object. • Determine the length of the distance between two whole numbers on the number line. • Using a measuring tape, find the length of your desk? **Teacher Notes** *Good time to revisit the addition/subtraction standard from Bundle 5.* *Common mistake among students is they count just the number of lines between the two points instead of the number of units between each point.* ***2.9C -** The revised SE has added number lines as a representation of distance (length).* ***2.9D -** Greater specificity has been added with the revised SE by breaking the current SE 2.9A into its component parts. Students are expected to use standard units of length and measure to the nearest whole unit such as an inch or a foot.* ***2.9E -** Greater specificity has been added with the revised SE by breaking the current SE 2.9A*

2.9.E-determine a solution to a problem involving length, including estimating lengths(Readiness Standard) **Current Standard**: 2.9A Identify concrete models that approximate standard units of length and use them to measure length. **Cognitive Change**: Added "estimating" lengths; Students are not just "identifying" and "using" length to measure but applying knowledge to "determine" a solution. **Content Change**: Deleted the use of concrete models; however, it can be applied in process standards.		measurement problems (i.e. how many centimeters long is your pencil? If by sharpening your pencil you lost 2 centimeters of length, how long would the newly sharpened pencil be? How many inches longer is your notebook than your pencil? If you taped two pieces of paper together, how long would the new piece of paper be?). In adherence to the standard, word problems should include estimations as well, such as estimating the length of your eraser in centimeters. It is essential that students have a mental visual image of each of the standard units of measure in order to accurately estimate (i.e. I know a unit cube is about a centimeter and it looks like my eraser would be about 2 of those unit cubes; I estimate the length of my eraser to be 2 centimeters). Instruction should also include measuring with a measurement tool that does not start at zero (i.e. using your broken ruler, measure the length of your pencil.)	*into its component parts.* 2.9.E **Distractor Factor:** *Students may not align the zero marking of the ruler appropriately; Students may inaccurately read the length of an object being measured with a tool not aligned at the zero marking; Students may think that an object measuring 12 inches in length is longer than an object measuring one foot because 12 is bigger than 1; Students may not estimate a measurement reasonably because they do not have a good understanding of the size of various measures.*

Course: Grade 2 Math	Bundle 12: Multiplication and Division	May 11 – June 3 (17 days)

Understandings

- Models can be used to solve problems in multiplication and division.

Rigor Questions

How can you represent a multiplication/division situation with a model?
How can we identify multiplication/division in our daily lives?

Vocabulary: Cognitive Complexity Verbs for TEKS: **Create; Apply; Connect; Describe**

equivalent sets; repeated addition; multiplication; division; repeated subtraction; separated

TEKS/Student Expectations	TEKS/ELPS Integration	Instructional Strategies/Resources	Clarifications and Examples
The student is expected to: 2.6.A-model, create, and describe contextual multiplication situations in which equivalent sets of concrete objects are joined; (Supporting Standard) **Current Standard**:2.4A model, create, and describe multiplication situations in which equivalent sets of concrete objects are joined. **Cognitive Change**: N/A **Content Change**: Added the term "contextual" multiplication situations.	2.6.A **Supports Readiness Standard By:** This supporting standard develops the conceptual understanding of multiplication. The manipulation of objects into equal groups, the creation of multiplicative scenarios, and the verbal description of multiplicative situations provides the foundation for future problem solving. **ELPS** 5 (E) employ increasingly complex grammatical structures in content area writing commensurate with grade-level expectations, such as:(i) using correct verbs, tenses, and pronouns/antecedents;	2.6.A **Instructional Implications:** Students should be provided a variety of opportunities to model the joining of equal groups with objects (i.e. Using manipulatives a student can model how many wheels are on six tricycles). Instruction will **not** represent the multiplication situations with a multiplicative number sentence (i.e. 3 x 6 = 18). As outlined by the TEKS, students are to connect multiplicative situations to repeated addition. Therefore the recording of an addition number sentence would be appropriate (i.e. 3 + 3 + 3 + 3 + 3 + 3 = 18). In adherence to the standard, students should also create situations where repeated addition can be modeled.	**Focus** Model, create and describe contextual multiplication situations where equivalent sets are joined. **Questions and Stems** • If one car has 4 wheels and two cars have 8 wheels, show me how many wheels would 4 cars have? • There are 7 baskets and in each basket there are 5 eggs. How many eggs are in the 7 baskets? • How did you figure out how many eggs are there in all? **Teacher Notes** *Contextual multiplication is using pictures and connecting the relationship to repeated addition.* *Progression should move from physical manipulatives to physical representation which will ultimately lead to abstract thinking.* *The phrase "multiplication situations" has been rephrased with "contextual multiplication situations." The situations are not purely mathematical situations*

TEKS/Student Expectations	**TEKS/ELPS Integration**	**Instructional Strategies/Resources**	**Clarifications and Examples**
The student is expected to: 2.6.B-model, create, and describe contextual division situations in which a set of concrete objects is separated into equivalent sets. (Supporting Standard) **Current Standard**:2.4B model, create, and describe division situations in which a set of concrete objects is separated into equivalent sets. **Cognitive Change**: N/A **Content Change**: Added the term "contextual" multiplication situations.	2.6.B **Supports Readiness Standard By:** This supporting standard develops the students' conceptual understanding of division which they will need in order to understand, appropriately represent, and solve division problems.	2.6.B **Instructional Implications:** Students should be provided a variety of opportunities to model the separating of a set of objects into equivalent groups (i.e. Using manipulatives, students model how many tricycles are needed using 18 wheels). Instruction will not represent the division situations with a division number sentence (i.e. 18 ÷ 3 = 6). As outlined by the TEKS, students are to connect divisional situations to repeated subtraction. Therefore the recording of a subtraction number sentence would be appropriate (i.e. 18 - 3 - 3 - 3 - 3 - 3 - 3 = 0). Divisional situations should be limited to those that yield equal groupings/shares (no remainders). In adherence to the standard, students should also create situations where repeated subtraction will be modeled.	**Focus** Model, create and describe contextual division situations where equivalent sets are separated. **Questions and Stems** • If one car has 4 wheels and two cars have 8 wheels, how many wheels would 4 cars have? • There are 35 eggs that need to be equally separated into 7 baskets. Show me how many eggs will go in each basket? • How did you know how many groups to create? • What strategy did you use to separate the objects equally? **Teacher Notes** Progression should move from physical manipulatives to physical representation which will ultimately lead to abstract thinking. *The phrase "division situations" has been rephrased with "contextual division situations." The situations are not purely mathematical situations.*

Resource Categories
The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the district curriculum.