Vertical Alignment

Mathematics

Grade 1

Kindergarten	Grade 1	Grade 2
Introduction		
§111.1. Implementation of Texas Essential Knowledge and Skills for Mathematics, Elementary, Adopted 2012. *Source: The provisions of this §111.1 adopted to be effective September 10, 2012, 37 TexReg 7109.* §111.2. Kindergarten, Adopted 2012.	§111.1. Implementation of Texas Essential Knowledge and Skills for Mathematics, Elementary, Adopted 2012. *Source: The provisions of this §111.1 adopted to be effective September 10, 2012, 37 TexReg 7109.* §111.3. Grade 1, Adopted 2012.	§111.1. Implementation of Texas Essential Knowledge and Skills for Mathematics, Elementary, Adopted 2012. *Source: The provisions of this §111.1 adopted to be effective September 10, 2012, 37 TexReg 7109.* §111.4. Grade 2, Adopted 2012.
The desire to achieve educational excellence is the driving force behind the Texas essential knowledge and skills for mathematics, guided by the college and career readiness standards. By embedding statistics, probability, and finance, while focusing on computational thinking, mathematical fluency, and solid understanding, Texas will lead the way in mathematics education and prepare all Texas students for the challenges they will face in the 21st century.	The desire to achieve educational excellence is the driving force behind the Texas essential knowledge and skills for mathematics, guided by the college and career readiness standards. By embedding statistics, probability, and finance, while focusing on computational thinking, mathematical fluency, and solid understanding, Texas will lead the way in mathematics education and prepare all Texas students for the challenges they will face in the 21st century.	The desire to achieve educational excellence is the driving force behind the Texas essential knowledge and skills for mathematics, guided by the college and career readiness standards. By embedding statistics, probability, and finance, while focusing on computational thinking, mathematical fluency, and solid understanding, Texas will lead the way in mathematics education and prepare all Texas students for the challenges they will face in the 21st century.
The process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing	The process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing	The process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing

Kindergarten	Grade 1	Grade 2
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. Students will select appropriate tools such as real objects, manipulatives, algorithms, paper and pencil, and technology and techniques such as mental math, estimation, number sense, and generalization and abstraction to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, computer programs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	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. Students will select appropriate tools such as real objects, manipulatives, algorithms, paper and pencil, and technology and techniques such as mental math, estimation, number sense, and generalization and abstraction to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, computer programs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	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. Students will select appropriate tools such as real objects, manipulatives, algorithms, paper and pencil, and technology and techniques such as mental math, estimation, number sense, and generalization and abstraction to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, computer programs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.
For students to become fluent in mathematics, students must develop a robust sense of number. The National Research Council's report, "Adding It Up," defines procedural fluency as "skill in carrying out procedures flexibly, accurately, efficiently, and appropriately." As students develop procedural fluency, they must also realize that true problem solving may take time, effort, and perseverance. Students in Kindergarten are expected to perform their work without the use of calculators.	For students to become fluent in mathematics, students must develop a robust sense of number. The National Research Council's report, "Adding It Up," defines procedural fluency as "skill in carrying out procedures flexibly, accurately, efficiently, and appropriately." As students develop procedural fluency, they must also realize that true problem solving may take time, effort, and perseverance. Students in Grade 1 are expected to perform their work without the use of calculators.	For students to become fluent in mathematics, students must develop a robust sense of number. The National Research Council's report, "Adding It Up," defines procedural fluency as "skill in carrying out procedures flexibly, accurately, efficiently, and appropriately." As students develop procedural fluency, they must also realize that true problem solving may take time, effort, and perseverance. Students in Grade 2 are expected to perform their work without the use of calculators.
The primary focal areas in Kindergarten are understanding counting and cardinality, understanding addition as joining and subtraction as separating, and comparing objects by measurable attributes.	The primary focal areas in Grade 1 are understanding and applying place value, solving problems involving addition and subtraction, and composing and decomposing two-dimensional shapes and three-	The primary focal areas in Grade 2 are making comparisons within the base-10 place value system, solving problems with addition and subtraction within 1,000, and building foundations for multiplication.

Kindergarten	Grade 1	Grade 2
	dimensional solids.	
Students develop number and operations through several fundamental concepts. Students know number names and the counting sequence. Counting and cardinality lay a solid foundation for number. Students apply the principles of counting to make the connection between numbers and quantities.	Students use relationships within the numeration system to understand the sequential order of the counting numbers and their relative magnitude.	Students develop an understanding of the base-10 place value system and place value concepts. The students' understanding of base-10 place value includes ideas of counting in units and multiples of thousands, hundreds, tens, and ones and a grasp of number relationships, which students demonstrate in a variety of ways.
Students use meanings of numbers to create strategies for solving problems and responding to practical situations involving addition and subtraction.	Students extend their use of addition and subtraction beyond the actions of joining and separating to include comparing and combining. Students use properties of operations and the relationship between addition and subtraction to solve problems. By comparing a variety of solution strategies, students use efficient, accurate, and generalizable methods to perform operations.	Students identify situations in which addition and subtraction are useful to solve problems. Students develop a variety of strategies to use efficient, accurate, and generalizable methods to add and subtract multi-digit whole numbers.
Students identify characteristics of objects that can be measured and directly compare objects according to these measurable attributes.	Students use basic shapes and spatial reasoning to model objects in their environment and construct more complex shapes. Students are able to identify, name, and describe basic two-dimensional shapes and three-dimensional solids.	Students use the relationship between skip counting and equal groups of objects to represent the addition or subtraction of equivalent sets, which builds a strong foundation for multiplication and division.
Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.
K.1 **Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:**	***1.1*** **Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:**	***2.1*** **Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:**

Kindergarten	Grade 1	Grade 2

K.1A
 	
Apply mathematics to problems arising in everyday life, society, and the workplace.
 	
Apply
 	
MATHEMATICS TO PROBLEMS ARISING IN EVERYDAY LIFE, SOCIETY, AND THE WORKPLACE
 	
Note(s):
 	
• The mathematical process standards may be applied to all content standards as appropriate.
• TxRCFP:
  ◦ Developing an understanding of whole numbers
  ◦ Developing an understanding of addition and subtraction
  ◦ Identifying and using attributes of two-dimensional shapes and three-dimensional solids
• TxCCRS:
  • X. Connections
	1.1A
	
	Apply mathematics to problems arising in everyday life, society, and the workplace.
	
	Apply
	
	MATHEMATICS TO PROBLEMS ARISING IN EVERYDAY LIFE, SOCIETY, AND THE WORKPLACE
	
	Note(s):
	
	• The mathematical process standards may be applied to all content standards as appropriate.
	• TxRCFP:
	  ◦ Developing an understanding of place value
	  ◦ Solving problems involving addition and subtraction
	  ◦ Analyzing attributes of two-dimensional shapes and three-dimensional solids
	  ◦ Developing the understanding of length
	• TxCCRS:
	  • X. Connections
		2.1A
		
		Apply mathematics to problems arising in everyday life, society, and the workplace.
		
		Apply
		
		MATHEMATICS TO PROBLEMS ARISING IN EVERYDAY LIFE, SOCIETY, AND THE WORKPLACE
		
		Note(s):
		
		• The mathematical process standards may be applied to all content standards as appropriate.
		• TxRCFP:
		  ◦ Developing proficiency in the use of place value within the base-10 numeration system
		  ◦ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000
		  ◦ Measuring length
		  ◦ Applying knowledge of two-dimensional shapes and three-dimensional solids, including exploration of early fraction concepts
		• TxCCRS:
		  • X. Connections

K.1B **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**	**1.1B** **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**	**2.1B** **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**

Kindergarten	Grade 1	Grade 2

reasonableness of the solution.
 	
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
 	
Note(s):
 	
• The mathematical process standards may be applied to all content standards as appropriate.
• TxRCFP:
  ◦ Developing an understanding of whole numbers
  ◦ Developing an understanding of addition and subtraction
  ◦ Identifying and using attributes of two-dimensional shapes and three-dimensional solids
• TxCCRS:
  • VIII. Problem Solving and Reasoning
	reasonableness of the solution.
	
	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
	
	Note(s):
	
	• The mathematical process standards may be applied to all content standards as appropriate.
	• TxRCFP:
	  ◦ Developing an understanding of place value
	  ◦ Solving problems involving addition and subtraction
	  ◦ Analyzing attributes of two-dimensional shapes and three-dimensional solids
	  ◦ Developing the understanding of length
	• TxCCRS:
	  • VIII. Problem Solving and Reasoning
		reasonableness of the solution.
		
		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
		
		Note(s):
		
		• The mathematical process standards may be applied to all content standards as appropriate.
		• TxRCFP:
		  ◦ Developing proficiency in the use of place value within the base-10 numeration system
		  ◦ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000
		  ◦ Measuring length
		  ◦ Applying knowledge of two-dimensional shapes and three-dimensional solids, including exploration of early fraction concepts
		• TxCCRS:
		  • VIII. Problem Solving and Reasoning

K.1C **Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and**	**1.1C** **Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and**	**2.1C** **Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and**

Kindergarten	Grade 1	Grade 2

number sense as appropriate, to solve problems.
 	
Select
 	
TOOLS, INCLUDING REAL OBJECTS, MANIPULATIVES, PAPER AND PENCIL, AND TECHNOLOGY AS APPROPRIATE, TO SOLVE PROBLEMS
 	
Select
 	
TECHNIQUES, INCLUDING MENTAL MATH, ESTIMATION, AND NUMBER SENSE AS APPROPRIATE, TO SOLVE PROBLEMS
 	
Note(s):
 	
• The mathematical process standards may be applied to all content standards as appropriate.
• TxRCFP:
  ◦ Developing an understanding of whole numbers
  ◦ Developing an understanding of addition and subtraction
  ◦ Identifying and using attributes of two-dimensional shapes and three-dimensional solids
• TxCCRS:
  • VIII. Problem Solving and Reasoning
	number sense as appropriate, to solve problems.
	
	Select
	
	TOOLS, INCLUDING REAL OBJECTS, MANIPULATIVES, PAPER AND PENCIL, AND TECHNOLOGY AS APPROPRIATE, TO SOLVE PROBLEMS
	
	Select
	
	TECHNIQUES, INCLUDING MENTAL MATH, ESTIMATION, AND NUMBER SENSE AS APPROPRIATE, TO SOLVE PROBLEMS
	
	Note(s):
	
	• The mathematical process standards may be applied to all content standards as appropriate.
	• TxRCFP:
	  ◦ Developing an understanding of place value
	  ◦ Solving problems involving addition and subtraction
	  ◦ Analyzing attributes of two-dimensional shapes and three-dimensional solids
	  ◦ Developing the understanding of length
	• TxCCRS:
	  • VIII. Problem Solving and Reasoning
		number sense as appropriate, to solve problems.
		
		Select
		
		TOOLS, INCLUDING REAL OBJECTS, MANIPULATIVES, PAPER AND PENCIL, AND TECHNOLOGY AS APPROPRIATE, TO SOLVE PROBLEMS
		
		Select
		
		TECHNIQUES, INCLUDING MENTAL MATH, ESTIMATION, AND NUMBER SENSE AS APPROPRIATE, TO SOLVE PROBLEMS
		
		Note(s):
		
		• The mathematical process standards may be applied to all content standards as appropriate.
		• TxRCFP:
		  ◦ Developing proficiency in the use of place value within the base-10 numeration system
		  ◦ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000
		  ◦ Measuring length
		  ◦ Applying knowledge of two-dimensional shapes and three-dimensional solids, including exploration of early fraction concepts
		• TxCCRS:
		  • VIII. Problem Solving and Reasoning

K.1D	**1.1D**	**2.1D**

Kindergarten	Grade 1	Grade 2

Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.
 	
Communicate
 	
MATHEMATICAL IDEAS, REASONING, AND THEIR IMPLICATIONS USING MULTIPLE REPRESENTATIONS, INCLUDING SYMBOLS, DIAGRAMS, GRAPHS, AND LANGUAGE AS APPROPRIATE
 	
Note(s):
 	
• The mathematical process standards may be applied to all content standards as appropriate.
• TxRCFP:
  ◦ Developing an understanding of whole numbers
  ◦ Developing an understanding of addition and subtraction
  ◦ Identifying and using attributes of two-dimensional shapes and three-dimensional solids
• TxCCRS:
  • IX. Communication and Representation
	Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.
	
	Communicate
	
	MATHEMATICAL IDEAS, REASONING, AND THEIR IMPLICATIONS USING MULTIPLE REPRESENTATIONS, INCLUDING SYMBOLS, DIAGRAMS, GRAPHS, AND LANGUAGE AS APPROPRIATE
	
	Note(s):
	
	• The mathematical process standards may be applied to all content standards as appropriate.
	• TxRCFP:
	  ◦ Developing an understanding of place value
	  ◦ Solving problems involving addition and subtraction
	  ◦ Analyzing attributes of two-dimensional shapes and three-dimensional solids
	  ◦ Developing the understanding of length
	• TxCCRS:
	  • IX. Communication and Representation
		Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.
		
		Communicate
		
		MATHEMATICAL IDEAS, REASONING, AND THEIR IMPLICATIONS USING MULTIPLE REPRESENTATIONS, INCLUDING SYMBOLS, DIAGRAMS, GRAPHS, AND LANGUAGE AS APPROPRIATE
		
		Note(s):
		
		• The mathematical process standards may be applied to all content standards as appropriate.
		• TxRCFP:
		  ◦ Developing proficiency in the use of place value within the base-10 numeration system
		  ◦ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000
		  ◦ Measuring length
		  ◦ Applying knowledge of two-dimensional shapes and three-dimensional solids, including exploration of early fraction concepts
		• TxCCRS:
		  • IX. Communication and Representation

K.1E **Create and use representations to organize, record, and communicate mathematical ideas.**	**1.1E** **Create and use representations to organize, record, and communicate mathematical ideas.**	**2.1E** **Create and use representations to organize, record, and communicate mathematical ideas.**

Kindergarten	Grade 1	Grade 2

Create, Use
 	
REPRESENTATIONS TO ORGANIZE, RECORD, AND COMMUNICATE MATHEMATICAL IDEAS
 	
Note(s):
 	
• The mathematical process standards may be applied to all content standards as appropriate.
• TxRCFP:
  ◦ Developing an understanding of whole numbers
  ◦ Developing an understanding of addition and subtraction
  ◦ Identifying and using attributes of two-dimensional shapes and three-dimensional solids
• TxCCRS:
  • IX. Communication and Representation
	Create, Use
	
	REPRESENTATIONS TO ORGANIZE, RECORD, AND COMMUNICATE MATHEMATICAL IDEAS
	
	Note(s):
	
	• The mathematical process standards may be applied to all content standards as appropriate.
	• TxRCFP:
	  ◦ Developing an understanding of place value
	  ◦ Solving problems involving addition and subtraction
	  ◦ Analyzing attributes of two-dimensional shapes and three-dimensional solids
	  ◦ Developing the understanding of length
	• TxCCRS:
	  • IX. Communication and Representation
		Create, Use
		
		REPRESENTATIONS TO ORGANIZE, RECORD, AND COMMUNICATE MATHEMATICAL IDEAS
		
		Note(s):
		
		• The mathematical process standards may be applied to all content standards as appropriate.
		• TxRCFP:
		  ◦ Developing proficiency in the use of place value within the base-10 numeration system
		  ◦ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000
		  ◦ Measuring length
		  ◦ Applying knowledge of two-dimensional shapes and three-dimensional solids, including exploration of early fraction concepts
		• TxCCRS:
		  • IX. Communication and Representation

K.1F **Analyze mathematical relationships to connect and communicate mathematical ideas.** Analyze MATHEMATICAL RELATIONSHIPS TO CONNECT AND COMMUNICATE MATHEMATICAL IDEAS Note(s):	**1.1F** **Analyze mathematical relationships to connect and communicate mathematical ideas.** Analyze MATHEMATICAL RELATIONSHIPS TO CONNECT AND COMMUNICATE MATHEMATICAL IDEAS Note(s):	**2.1F** **Analyze mathematical relationships to connect and communicate mathematical ideas.** Analyze MATHEMATICAL RELATIONSHIPS TO CONNECT AND COMMUNICATE MATHEMATICAL IDEAS Note(s):

Kindergarten	Grade 1	Grade 2

• The mathematical process standards may be applied to all content standards as appropriate.
• TxRCFP:
  ◦ Developing an understanding of whole numbers
  ◦ Developing an understanding of addition and subtraction
  ◦ Identifying and using attributes of two-dimensional shapes and three-dimensional solids
• TxCCRS:
  • X. Connections
	• The mathematical process standards may be applied to all content standards as appropriate.
	• TxRCFP:
	  ◦ Developing an understanding of place value
	  ◦ Solving problems involving addition and subtraction
	  ◦ Analyzing attributes of two-dimensional shapes and three-dimensional solids
	  ◦ Developing the understanding of length
	• TxCCRS:
	  • X. Connections
		• The mathematical process standards may be applied to all content standards as appropriate.
		• TxRCFP:
		  ◦ Developing proficiency in the use of place value within the base-10 numeration system
		  ◦ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000
		  ◦ Measuring length
		  ◦ Applying knowledge of two-dimensional shapes and three-dimensional solids, including exploration of early fraction concepts
		• TxCCRS:
		  • X. Connections

K.1G
 	
Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.
 	
Display, Explain, Justify
 	
MATHEMATICAL IDEAS AND ARGUMENTS USING PRECISE MATHEMATICAL LANGUAGE IN WRITTEN OR ORAL COMMUNICATION
 	
Note(s):
 	
• The mathematical process standards may be applied to all content standards as appropriate.
• TxRCFP:
  ◦ Developing an understanding of whole
	1.1G
	
	Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.
	
	Display, Explain, Justify
	
	MATHEMATICAL IDEAS AND ARGUMENTS USING PRECISE MATHEMATICAL LANGUAGE IN WRITTEN OR ORAL COMMUNICATION
	
	Note(s):
	
	• The mathematical process standards may be applied to all content standards as appropriate.
	• TxRCFP:
	  ◦ Developing an understanding of place value
		2.1G
		
		Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.
		
		Display, Explain, Justify
		
		MATHEMATICAL IDEAS AND ARGUMENTS USING PRECISE MATHEMATICAL LANGUAGE IN WRITTEN OR ORAL COMMUNICATION
		
		Note(s):
		
		• The mathematical process standards may be applied to all content standards as appropriate.
		• TxRCFP:
		  ◦ Developing proficiency in the use of place

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numbers ○ Developing an understanding of addition and subtraction ○ Identifying and using attributes of two-dimensional shapes and three-dimensional solids • TxCCRS: • IX. Communication and Representation	○ Solving problems involving addition and subtraction ○ Analyzing attributes of two-dimensional shapes and three-dimensional solids ○ Developing the understanding of length • TxCCRS: • IX. Communication and Representation	value within the base-10 numeration system ○ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000 ○ Measuring length ○ Applying knowledge of two-dimensional shapes and three-dimensional solids, including exploration of early fraction concepts • TxCCRS: • IX. Communication and Representation
Counting and Recognizing Whole Numbers		
K.2 ***Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system. The student is expected to:***	***1.2*** ***Number and operations. The student applies mathematical process standards to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:***	***2.2*** ***Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:***
K.2A **Count forward and backward to at least 20 with and without objects.** Count FORWARD TO AT LEAST 20 WITH AND WITHOUT OBJECTS Including, but not limited to: • Counting numbers (1 – 20+)		

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◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*} • Number word sequence has a correct order. • Count forward orally by ones. ◦ With objects starting with one • One-to-one correspondence – each object counted is matched accurately with a number word in correct sequence • Tagging with synchrony, meaning when one object is touched it is matched with the correct word • Arrangement and order of counting objects does not matter as long as the proper number sequence is used. • Conservation of set – if the same number of objects are counted and then rearranged, the quantity of objects in the set does not change • Cardinality – the last counting number identified represents the number of objects in the set regardless of which object was counted last • Cardinal number – a number that names the quantity of objects in a set • Hierarchical inclusion – concept of nested numbers, meaning each prior number in the counting sequence is included in the set as the set increases (e.g., 18 is 17 increased by 1; 18 decreased by 1 is 17; etc.) ◦ Without objects starting with any counting number • Proper number counting sequence • Hierarchical inclusion – concept of nested		

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numbers, meaning each prior number in the counting sequence is included in the set as the set increases (e.g., 18 is 17 increased by 1; 18 decreased by 1 is 17; etc.)
 	
Count
 	
BACKWARD FROM AT LEAST 20 WITH AND WITHOUT OBJECTS
 	
Including, but not limited to:
 	
• Counting numbers (1 – 20+)
  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, …, *n*}
• Number word sequence has a correct order.
• Count backward orally by ones.
  ◦ With objects starting from any given counting number
  • Objects provided must match the number count (e.g., if counting backwards from 18, then provide 18 counters; etc.).
  • One-to-one correspondence – each object counted is matched accurately with a number word in correct sequence
  • Tagging with synchrony, meaning when one object is touched it is matched with the correct word
  • Arrangement and order of counting objects does not matter as long as the proper number sequence is used.
  • Conservation of set – if the same number of objects are counted and then rearranged, the quantity of objects in		

Kindergarten	Grade 1	Grade 2
the set does not change • Cardinality – the last counting number identified represents the number of objects in the set regardless of which object was counted last • Cardinal number – a number that names the quantity of objects in a set • Hierarchical inclusion – concept of nested numbers, meaning each prior number in the counting sequence is included in the set as the set increases (e.g., 18 is 17 increased by 1; 18 decreased by 1 is 17; etc.) ○ Without objects starting with any counting number ○ Proper number counting sequence ○ Hierarchical inclusion – concept of nested numbers, meaning each prior number in the counting sequence is included in the set as the set increases (e.g., 18 is 17 increased by 1; 18 decreased by 1 is 17; etc.) Note(s): • Grade Level(s): ○ Grade 1 will recite numbers forward and backward from any given number between 1 and 120. ○ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ○ Developing an understanding of whole numbers ○ Developing an understanding of addition and subtraction		

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• TxCCRS: • IX. Communication and Representation		

K.2B
 	
Read, write, and represent whole numbers from 0 to at least 20 with and without objects or pictures.
 	
Read, Write, Represent
 	
WHOLE NUMBERS FROM 0 TO AT LEAST 20 WITH AND WITHOUT OBJECTS OR PICTURES
 	
Including, but not limited to:
 	
• Whole numbers (0 – 20+)
  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
• Numeric form
  ◦ Numerals represented using the digits 0 – 9
• With objects
  ◦ Number of objects in a set communicated orally
  ◦ Number of objects in a set written in numerals
  ◦ Number presented orally represented with a set of objects
  ◦ Number presented in writing represented with a set of objects
  ◦ Numbers presented out of sequence (e.g., represent 15; represent 9; represent 2; represent 17; etc.)		

Kindergarten	Grade 1	Grade 2
◦ Arrangement and order of counting objects does not matter as long as the proper number is used. • Conservation of set – if the same number of objects are counted and then rearranged, the quantity of objects in the set does not change ◦ Relationship between number words and numerals to quantities ◦ Quantity in terms of “How many?” ◦ Concrete models begin to develop recognition of magnitude (relative size) of number. • With pictures ◦ Number of objects in a picture communicated orally ◦ Number of objects in a picture written in numerals ◦ Number presented orally represented with a set of pictures ◦ Number presented in writing represented with a set of pictures ◦ Numbers presented out of sequence (e.g., represent 15; represent 9; represent 2; represent 17; etc.) ◦ Arrangement and order of pictures does not matter as long as the proper number is used. • Conservation of set – if the same number of pictures are counted and then rearranged, the quantity of pictures in the set does not change ◦ Relationship between number words and numerals to quantities ◦ Quantity in terms of “How many?” ◦ Pictorial models begin to develop		

Kindergarten	Grade 1	Grade 2

recognition of magnitude (relative size) of number.
• Without objects or pictures
  ◦ Number presented in written form communicated orally
  ◦ Number presented orally written in numerals
  ◦ Numbers presented out of sequence (e.g., write 15; write 9; write 2; write 17; etc.)
  ◦ Quantity in terms of “How many?”
 	
Note(s):
 	
• Grade Level(s):
  ◦ Kindergarten students read, write, and represent whole numbers numerically.
  ◦ Kindergarten students should be exposed to the word form of numbers along with the numeric form.
  ◦ Grade 1 students will begin reading numbers both in numeric and word form.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Developing an understanding of whole numbers
• TxCCRS:
  ◦ I.A. Numeric Reasoning – Number representation
  • IX. Communication and Representation		

K.2C **Count a set of objects up to at least 20 and demonstrate that the last number said tells the number of objects in**		

Kindergarten	Grade 1	Grade 2
the set regardless of their arrangement or order. Count A SET OF OBJECTS UP TO AT LEAST 20 Including, but not limited to: • Set of objects (1 – 20+) • Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, …, *n*} • Number word sequence has a correct order. • Arrangement and order of counting objects does not matter as long as the proper number is used. • One-to-one correspondence – each object counted is matched accurately with a number word in correct sequence ◦ Tagging with synchrony, meaning when one object is touched it is matched with the correct word Demonstrate THE LAST NUMBER SAID TELLS THE NUMBER OF OBJECTS IN THE SET REGARDLESS OF THEIR ARRANGEMENT OR ORDER Including, but not limited to: • Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, …, *n*} • Cardinality – the last counting number identified represents the number of objects in the set regardless of which object was		

Kindergarten	Grade 1	Grade 2

counted last
  - Cardinal number – a number that names the quantity of objects in a set
- Conservation of set – if the same number of objects are counted and then rearranged, the quantity of objects in the set does not change
 	
Note(s):
 	
- Grade Level(s):
  - Various mathematical process standards will be applied to this student expectation as appropriate.
- TxRCFP:
  - Developing an understanding of whole numbers
- TxCCRS:
  - IX. Communication and Representation		

K.2D
 	
Recognize instantly the quantity of a small group of objects in organized and random arrangements.
 	
Recognize Instantly
 	
THE QUANTITY OF A SMALL GROUP OF OBJECTS IN ORGANIZED AND RANDOM ARRANGEMENTS
 	
Including, but not limited to:
 	
- Group of objects (0 to 10)
  - 0 – 5 objects
  - 5 – 10 objects
- Subitizing – the ability to name the number of objects in a set without counting but rather by identifying the arrangement of objects
	1.2A
	
	Recognize instantly the quantity of structured arrangements.
	
	Recognize Instantly
	
	THE QUANTITY OF STRUCTURED ARRANGEMENTS
	
	Including, but not limited to:
	
	- Group of objects (0 to 10)
	  - 0 – 5 objects
	  - 5 – 10 objects
	- Subitizing – the ability to name the number of objects in a set without counting but rather by identifying the arrangement of objects	

Kindergarten	Grade 1	Grade 2
◦ Perceptual subitizing – the recognition of a quantity without using any other knowledge to determine the count • Quantities of 5 or fewer ◦ Conceptual subitizing – recognition of a quantity based on a spatial arrangement, pattern, parts of the arrangement, etc. • Organized arrangements ◦ Organization of objects aids in the instant recognition of the quantity based on the composition and decomposition of the parts. ◦ Various organized arrangements of objects (e.g., one or two five frame mats, a Rekenrek counting rack, fingers, dice, playing cards, etc.) • Random arrangements ◦ Spatial arrangements of objects perceived in a variety of ways to aid in the instant recognition of a quantity based on the composition and decomposition of the parts • Instant recognition of smaller quantities within the random arrangement aids in determining the total quantity of the random arrangement. ◦ Various random arrangements of objects Note(s): • Grade Level(s): ◦ Grade 1 recognizes instantly the quantity of structured arrangements. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing an understanding of whole	◦ Perceptual subitizing – the recognition of a quantity without using any other knowledge to determine the count • Quantities of 5 or fewer ◦ Conceptual subitizing – recognition of a quantity based on a spatial arrangement, pattern, parts of the arrangement, etc. • Structured arrangements • Organization of objects within a set aids in the instant recognition of the quantity based on the composition and decomposition of the parts. • Various structured arrangements ◦ Ex: Ten frame mats, base-10 blocks, a Rekenrek counting rack, playing cards, dice, etc. Note(s): • Grade Level(s): ◦ Kindergarten recognized instantly the quantity of organized and random arrangements. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing an understanding of place value • TxCCRS: ◦ I. Numeric Reasoning ◦ IX. Communication and Representation	

Kindergarten	Grade 1	Grade 2
numbers • TxCCRS: • IX. Communication and Representation		

K.2E
 	
Generate a set using concrete and pictorial models that represents a number that is more than, less than, and equal to a given number up to 20.
 	
Generate
 	
A SET USING CONCRETE AND PICTORIAL MODELS THAT REPRESENTS A NUMBER THAT IS MORE THAN, LESS THAN, AND EQUAL TO A GIVEN NUMBER UP TO 20
 	
Including, but not limited to:
 	
• Whole numbers (0 – 20)
  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
• Quantity represented by concrete models, pictorial models, oral presentations, and symbolic representations
  ◦ Concrete and pictorial models begin to develop recognition of magnitude (relative size) of number.
• Concrete models
  ◦ Given number presented orally and symbolically
  ◦ Counting strategies used to create the set		

Kindergarten	Grade 1	Grade 2
◦ Relationship of the set to the given number ◦ Comparative language • Describes the relationship between the concrete model and the given number • Greater than, more than • Less than, fewer than • Equal to, same as • Pictorial models ◦ Given number presented orally and symbolically ◦ Counting strategies used to create the set ◦ Relationship of the set to the given number ◦ Comparative language • Describes the relationship between the pictorial model and the given number • Greater than, more than • Less than, fewer than • Equal to, same as Note(s): • Grade Level(s): ◦ Grade 1 will generate a number that is greater than or less than a given whole number up to 120. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing an understanding of whole numbers • TxCCRS: ◦ I.A. Numeric Reasoning – Number representation • IX. Communication and Representation		

Kindergarten

K.2F

Generate a number that is one more than or one less than another number up to at least 20.

Generate

A NUMBER THAT IS ONE MORE THAN OR ONE LESS THAN ANOTHER NUMBER UP TO AT LEAST 20

Including, but not limited to:

- Whole numbers (0 – 20+)
  - Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
  - Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
- Hierarchical inclusion – concept of nested numbers, meaning each prior number in the counting sequence is included in the set as the set increases (e.g., 18 is 17 increased by 1; 18 decreased by 1 is 17; etc.)
- Comparative language
  - Describes the relationship between the number generated and the given number
    - One more than a given number, including 1 more than 0 and 1 more than 20
    - One less than a given number, including 1 less than 1 and 1 less than 21
- Quantity represented by concrete models, pictorial models, oral presentations, and symbolic representations
  - Concrete and pictorial models begin to develop recognition of magnitude (relative

Grade 1

1.2D

Generate a number that is greater than or less than a given whole number up to 120.

Generate

A NUMBER THAT IS GREATER THAN OR LESS THAN A GIVEN WHOLE NUMBER UP TO 120

Including, but not limited to:

- Whole numbers (0 – 120)
  - Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
  - Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
- Comparative language
  - Inequality language
    - Greater than, more than
    - Less than, fewer than
- Place value relationships
  - 1 more or 1 less
    - Adding 1 in the ones place will generate a number that is 1 more than the original number.
    - Subtracting 1 in the ones place will generate a number that is 1 less than the original number.
  - 10 more or 10 less
    - Adding 1 in the tens place will generate a number that is 10 more than the original number.
    - Subtracting 1 in the tens place will generate a number that is 10 less than

Grade 2

2.2C

Generate a number that is greater than or less than a given whole number up to 1,200.

Generate

A NUMBER THAT IS GREATER THAN OR LESS THAN A GIVEN WHOLE NUMBER UP TO 1,200

Including, but not limited to:

- Whole numbers (0 – 1,200)
  - Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
  - Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
- Comparative language
  - Inequality language
    - Greater than, more than
    - Less than, fewer than
- Place value relationships
  - 1 more or 1 less
    - Adding 1 in the ones place will generate a number that is 1 more than the original number.
    - Subtracting 1 in the ones place will generate a number that is 1 less than the original number.
  - 10 more or 10 less
    - Adding 1 in the tens place will generate a number that is 10 more than the original number.
    - Subtracting 1 in the tens place will generate a number that is 10 less than

Kindergarten	Grade 1	Grade 2
size) of number. • Counters, linking cubes, beans, calendar, hundreds chart, etc. ○ Oral presentations and symbolic representations • Verbal description, numerical recording using words and numbers ○ Quantities presented out of correct sequence (e.g., 1 more than 10; 1 more than 4; 1 less than 18; 1 less than 6; etc.) Note(s): • Grade Level(s): ○ Grade 1 will generate a number that is greater than or less than a given whole number to 120. ○ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ○ Developing an understanding of whole numbers ○ Developing an understanding of addition and subtraction • TxCCRS: ○ I.A. Numeric Reasoning – Number representation • IX. Communication and Representation	the original number. • Numerical relationships ○ Counting order ○ Skip counting ○ Doubles • Concrete and pictorial models ○ Hundreds chart • Moving one place to the right will generate a number that is 1 more than the original number. • Moving one place to the left will generate a number that is 1 less than the original number. • Moving one row down will generate a number that is 10 more than the original number. • Moving one row up will generate a number that is 10 less than the original number. ○ Base-10 blocks • Adding unit cubes will increase a number by increments of 1. • Removing unit cubes will decrease a number by increments of 1. • Adding longs will increase a number by increments of 10. • Removing longs will decrease a number by increments of 10. ○ Number line • Numbers increase from left to right. • Numbers decrease from right to left. ○ Calendar • Moving one place to the right will generate a number that is 1 more than the original number. • Moving one place to the left will generate a number that is 1 less than the original	the original number. ○ 100 more or 100 less • Adding 1 in the hundreds place will generate a number that is 100 more than the original number. • Subtracting 1 in the hundreds place will generate a number that is 100 less than the original number. • Numerical relationships ○ Counting order ○ Skip counting ○ Doubles • Concrete and pictorial models ○ Hundreds chart • Moving one place to the right will generate a number that is 1 more than the original number. • Moving one place to the left will generate a number that is 1 less than the original number. • Moving one row down will generate a number that is 10 more than the original number. • Moving one row up will generate a number that is 10 less than the original number. ○ Base-10 blocks • Adding unit cubes will increase a number by increments of 1. • Removing unit cubes will decrease a number by increments of 1. • Adding longs will increase a number by increments of 10. • Removing longs will decrease a number by increments of 10. • Adding flats will increase a number by increments of 100.

Kindergarten	Grade 1	Grade 2

	number.
	• Moving one row down will generate a number that is 7 more than the original number.
	• Moving one row up will generate a number that is 7 less than the original number.
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Kindergarten generated a number that is one more than or one less than another number up to 20.
	  ◦ Grade 2 will generate a number that is greater than or less than a given whole number up to 1,200.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Developing an understanding of place value
	• TxCCRS:
	  ◦ I. Numeric Reasoning
	  ◦ IX. Communication and Representation
		• Removing flats will decrease a number by increments of 100.
		◦ Number line
		  • Numbers increase from left to right.
		  • Numbers decrease from right to left.
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 1 generated a number that is greater than or less than a given whole number up to 120.
		  ◦ Grade 1 used relationships to determine the number that is 10 more and 10 less than a given number up to 120.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Developing proficiency in the use of place value within the base-10 numeration system
		• TxCCRS:
		  ◦ I. Numeric Reasoning
		  ◦ IX. Communication and Representation

Comparing and Ordering Numbers		
K.2 ***Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system. The student is expected to:***	***1.2*** ***Number and operations. The student applies mathematical process standards to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:***	***2.2*** ***Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:***

Kindergarten	Grade 1	Grade 2

K.2G
 	
Compare sets of objects up to at least 20 in each set using comparative language.
 	
Compare
 	
SETS OF OBJECTS UP TO AT LEAST 20 IN EACH SET USING COMPARATIVE LANGUAGE
 	
Including, but not limited to:
 	
• Whole numbers (0 – 20+)
  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
• Quantity represented by concrete models, pictorial models, oral presentations, and symbolic representations
  ◦ Concrete and pictorial models begin to develop recognition of magnitude (relative size) of number.
  • Counters, linking cubes, beans, calendar, hundreds chart, etc.
  ◦ Oral presentations and symbolic representations
  • Verbal description, numerical recording
	1.2E
	
	Use place value to compare whole numbers up to 120 using comparative language.
	
	Use
	
	PLACE VALUE OF WHOLE NUMBERS UP TO 120
	
	Including, but not limited to:
	
	• Whole numbers (0 – 120)
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
	• Place value – the value of a digit as determined by its location in a number such as ones, tens, hundreds, etc.
	  ◦ Hundreds place
	  ◦ Tens place
	  ◦ Ones place
	
	To Compare
	
	WHOLE NUMBERS UP TO 120 USING COMPARATIVE LANGUAGE
	
	Including, but not limited to:
		2.2D
		
		Use place value to compare and order whole numbers up to 1,200 using comparative language, numbers, and symbols (>, <, or =).
		
		Use
		
		PLACE VALUE FOR WHOLE NUMBERS UP TO 1,200
		
		Including, but not limited to:
		
		• Whole numbers (0 – 1,200)
		  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
		  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
		• Place value – the value of a digit as determined by its location in a number, such as ones, tens, hundreds, one thousands, etc.
		  ◦ One thousands place
		  ◦ Hundreds place
		  ◦ Tens place
		  ◦ Ones place
		  ◦ Period – a three-digit grouping of whole numbers where each grouping is composed of a ones place, a tens place, and a

Kindergarten	Grade 1	Grade 2

using words and numbers
• Hierarchical inclusion – concept of nested numbers, meaning each prior number in the counting sequence is included in the set as the set increases (e.g., 18 is 17 increased by 1; 18 decreased by 1 is 17; etc.)
• Compare sets – to consider the value of two sets to determine which set is greater or less in value or if the sets are equal in value
• Matching or counting strategies to compare sets
  ◦ One-to-one correspondence – each object counted is matched accurately with a number word in correct sequence
  • Tagging with synchrony, meaning when one object is touched it is matched with the correct word
  ◦ Arrangement and order of counting objects does not matter as long as the proper number sequence is used.
  • Conservation of set – if the same number of objects are counted and then rearranged, the quantity of objects in the set does not change
  ◦ Cardinality – the last counting number identified represents the number of objects in the set regardless of which object was counted last
  • Cardinal number – a number that names the quantity of objects in a set
• Comparative language
  ◦ Describes the relationship between the quantities of each set
  ◦ Inequality language (greater than, more than, less than, fewer than, etc.)
	• Whole numbers (0 – 120)
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, …, *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, …, *n*}
	• Comparative language
	  ◦ Inequality language
	  • Greater than, more than
	  • Less than, fewer than
	  ◦ Equality language
	  • Equal to, same as
	• Compare numbers – to consider the value of two numbers to determine which number is greater or less or if the numbers are equal in value
	• Concrete models
	  ◦ Compare the amount modeled in the highest place value position first.
	  ◦ Proportional models – a visual representation that demonstrates the relative size of each place value using models with proportional dimensions, meaning the model of each place value is exactly 10 times larger than the place value model to the right (e.g., the base-10 long is exactly 10 times as big as the unit showing that one 10 is equal to ten ones)
	  • Bundled sticks (proportional representation of the magnitude of a number with 1-to-10 relationship)
	  • Base-10 blocks (proportional representation of the magnitude of a number with 1-to-10 relationship)
		hundreds place, and each grouping is separated by a comma
		  • Thousands period is composed of the one thousands place, ten thousands place, and hundred thousands place.
		  • Units period is composed of the ones place, tens place, and hundreds place.
		
		To Compare, To Order
		
		WHOLE NUMBERS UP TO 1,200 USING COMPARATIVE LANGUAGE, NUMBERS, AND SYMBOLS (>, <, OR =)
		
		Including, but not limited to:
		
		• Whole numbers (0 – 1,200)
		  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, …, *n*}
		  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, …, *n*}
		• Place value – the value of a digit as determined by its location in a number such as ones, tens, hundreds, one thousands, etc.
		• Comparative language and symbols
		  ◦ Inequality words and symbols
		  • Greater than (>)
		  • Less than (<)
		  ◦ Equality words and symbol
		  • Equal to (=)
		• Compare numbers – to consider the value of two numbers to determine which number is greater or less or if the numbers are equal in value
		  ◦ Relative magnitude of a number describes

Kindergarten	Grade 1	Grade 2
◦ Equality language (equal to, same as, etc.) • Compare two sets of objects up to at least 20. ◦ Recognition of the quantity represented by each set ◦ Comparison of two organized sets ◦ Comparison of two unorganized sets ◦ Comparison of an organized set to an unorganized set Note(s): • Grade Level(s): ◦ Kindergarten uses comparative language only. ◦ Grade 1 will use place value to compare whole numbers up to 120 using comparative language. ◦ Grade 1 introduces representing the comparison of two numbers to 100 using the symbols >, <, or =. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing an understanding of whole numbers • TxCCRS: ◦ I.A. Numeric Reasoning – Number representation • IX. Communication and Representation	number with 1 to 10 relationship) ◦ Non-proportional models – a visual representation that does not maintain the proportional relationship of size, meaning the size of each place value model is not 10 times larger than the place value model to the right (e.g., the value of each place value disk is indicated by the numerical label and color but does not change in size) • Place value disks (non-proportional representation with a 1-to-10 relationship) • Pictorial models ◦ Compare the amount represented in the highest place value position first. ◦ Base-10 block representations ◦ Place value disk representations • Numerical ◦ Compare two numbers using place value charts. • Compare digits in the same place value position beginning with the greatest place value. ◦ If these digits are the same, continue to the next smallest place until the digits are different. • Numbers that have common digits but are not equal in value (different place values) • Numbers that have a different number of digits Note(s):	◦ Relative magnitude of a number describes the size of a number and its relationship to another number. ◦ Compare two numbers using place value charts. • Compare digits in the same place value position beginning with the greatest place value. ◦ If these digits are the same, continue to the next smallest place until the digits are different. • Numbers that have common digits but are not equal in value (different place values) • Numbers that have a different number of digits ◦ Compare two numbers using a number line. • Number lines (horizontal/vertical) ◦ Proportional number lines (pre-determined intervals with at least two labeled numbers) ◦ Open number lines (no marked intervals) • Order numbers – to arrange a set of numbers based on their numerical value ◦ Numbers increase from left to right on a horizontal number line and from bottom to top on a vertical number line. • Points to the left of a specified point on a horizontal number line are less than points to the right. • Points to the right of a specified point on

Kindergarten	Grade 1	Grade 2

K.2H
 	
Use comparative language to describe two numbers up to 20 presented as written numerals.
 	
Use
 	
COMPARATIVE LANGUAGE
 	
Including, but not limited to:
 	
• Comparative language
  ◦ Describes the relationship between the value of each numeral
  • Inequality language
  • Greater than, more than
  • Less than, fewer than
  • Equality language
  • Equal to, same as
 	
To Describe
 	
TWO NUMBERS UP TO 20 PRESENTED AS WRITTEN NUMERALS
 	
Including, but not limited to:
	• Grade Level(s):
	  ◦ Kindergarten used comparative language to describe two numbers up to 20 presented as written numerals.
	  ◦ Grade 2 will use place value to compare and order whole numbers up to 1,200 using comparative language, numbers, and the symbols >, <, or =.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Developing an understanding of place value
	• TxCCRS:
	  ◦ I. Numeric Reasoning
	  ◦ IX. Communication and Representation
		a horizontal number line are greater than points to the left.
		  • Points below a specified point on a vertical number line are less than points above.
		  • Points above a specified point on a vertical number line are greater than points below.
		  ◦ Order a set of numbers on a number line.
		  ◦ Order a set of numbers on an open number line.
		  ◦ Quantifying descriptors (e.g., between two given numbers, greatest/least, ascending/descending, tallest/shortest, warmest/coldest, fastest/slowest, longest/shortest, heaviest/lightest, closest/farthest, oldest/youngest, etc.)
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 1 used place value to compare numbers up to 120 and represented the comparison of two numbers to 100 using the symbols >, <, or =.

Kindergarten	Grade 1	Grade 2

• Whole numbers (0 – 20)
  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
• Numerals represent quantities
• Compare numbers – to consider the value of two numbers to determine which number is greater or less or if the numbers are equal in value
  ◦ Numerals presented out of sequence (e.g., compare 6 and 12; compare 19 and 5; etc.)
  ◦ Transition from comparing numbers by counting objects to comparing numbers without counting.
 	
Note(s):
 	
• Grade Level(s):
  ◦ Kindergarten uses comparative language only.
  ◦ Grade 1 will use place value to compare whole numbers up to 120 using comparative language.
  ◦ Grade 1 introduces representing the comparison of two numbers to 100 using the symbols >, <, or =.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Developing an understanding of whole numbers
		◦ Grade 3 will use compare and order whole numbers up to 100,000 and represent the comparisons using the symbols >, <, or =.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Developing proficiency in the use of place value within the base-10 numeration system
		• TxCCRS:
		  ◦ I. Numeric Reasoning
		  ◦ IX. Communication and Representation

Kindergarten	Grade 1	Grade 2

• TxCCRS:
  ◦ I.A. Numeric Reasoning – Number representation
  • IX. Communication and Representation		

	1.2F
	
	Order whole numbers up to 120 using place value and open number lines.
	
	Order
	
	WHOLE NUMBERS UP TO 120 USING PLACE VALUE AND OPEN NUMBER LINES
	
	Including, but not limited to:
	
	• Whole numbers (0 – 120)
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, …, *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, …, *n*}
	• Order numbers – to arrange a set of numbers based on their numerical value
	• Order a set of numbers using place value.
	  ◦ Quantifying descriptors (e.g., between two given numbers, greatest/least, ascending/descending, tallest/shortest, warmest/coldest, fastest/slowest, longest/shortest, heaviest/lightest, closest/farthest, oldest/youngest, etc.)
	• Order a set of numbers using open number lines.
	  ◦ Characteristics of an open number line	

Kindergarten	Grade 1	Grade 2

	• An open number line begins as a line with no intervals (or tick marks) and no positions/numbers labeled.
	• Numbers/positions are placed on the empty number line only as they are needed.
	• When reasoning on an open number line, the position of zero is often not placed.
	• When working with larger numbers, an open number line without the constraint of distance from zero allows the ability to “zoom-in” on the relevant section of the number line.
	• The placement of the first two numbers on an open number line determines the scale of the number line.
	  • Once the scale of the number line has been established by the placement of the first two numbers, intervals between additional numbers placed are approximately proportional.
	• The differences between numbers are approximated by the distance between the positions on the number line.
	• Open number lines extend infinitely in both directions (arrows indicate the number line continues infinitely).
	• Numbers increase from left to right on a horizontal number line and from bottom to top on a vertical number line.
	  ◦ Points to the left of a specified point on a horizontal number line are less than points to the right.
	  ◦ Points to the right of a specified point on a horizontal number line are greater than points to the left.	

Kindergarten	Grade 1	Grade 2
	◦ Points below a specified point on a vertical number line are less than points above. ◦ Points above a specified point on a vertical number line are greater than points below. • Landmark (or anchor) numbers may be placed on the open number line to help locate other numbers. ◦ Relative magnitude of a number describes the size of a number and its relationship to another number. • Order a set of numbers on an open number line. Note(s): • Grade Level(s): ◦ Grade 1 introduces ordering whole numbers up to 120 using place value and open number lines. ◦ Grade 2 will use place value to compare and order whole numbers up to 1,200 using comparative language, numbers, and the symbols >, <, or =. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing an understanding of place value • TxCCRS: ◦ I. Numeric Reasoning ◦ IX. Communication and Representation	
	1.2G	

Kindergarten	Grade 1	Grade 2

	Represent the comparison of two numbers to 100 using the symbols >, <, or =.
	
	Represent
	
	THE COMPARISON OF TWO NUMBERS TO 100 USING THE SYMBOLS >, <, OR =
	
	Including, but not limited to:
	
	• Whole numbers (0 – 100)
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, …, *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, …, *n*}
	• Compare numbers – to consider the value of two numbers to determine which number is greater or less or if the numbers are equal in value
	• Inequality words and symbols
	  ◦ Greater than (>)
	  ◦ Less than (<)
	• Equality words and symbol
	  • Equal to (=)
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Grade 1 introduces the comparison symbols >, <, and =.
	  ◦ Grade 2 will use place value to compare and order whole numbers up to 1,200 using comparative language, numbers, and the symbols >, <, or =.
	  ◦ Various mathematical process standards	

Kindergarten	Grade 1	Grade 2

	will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Developing an understanding of place value
	• TxCCRS:
	  ◦ I. Numeric Reasoning
	  ◦ IX. Communication and Representation	

	Representing and Relating Numbers Using Number Lines	
	1.2 ***Number and operations. The student applies mathematical process standards to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:***	*2.2* ***Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:***

	1.2F
	
	Order whole numbers up to 120 using place value and open number lines.
	
	Order
	
	WHOLE NUMBERS UP TO 120 USING PLACE VALUE AND OPEN NUMBER LINES
	
	Including, but not limited to:
	
	• Whole numbers (0 – 120)
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
		2.2E
		
		Locate the position of a given whole number on an open number line.
		
		Locate
		
		THE POSITION OF A GIVEN WHOLE NUMBER ON AN OPEN NUMBER LINE
		
		Including, but not limited to:
		
		• Whole numbers (0 – 1,200)
		  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}

Kindergarten	Grade 1	Grade 2
	◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*} • Order numbers – to arrange a set of numbers based on their numerical value • Order a set of numbers using place value. ◦ Quantifying descriptors (e.g., between two given numbers, greatest/least, ascending/descending, tallest/shortest, warmest/coldest, fastest/slowest, longest/shortest, heaviest/lightest, closest/farthest, oldest/youngest, etc.) • Order a set of numbers using open number lines. ◦ Characteristics of an open number line • An open number line begins as a line with no intervals (or tick marks) and no positions/numbers labeled. • Numbers/positions are placed on the empty number line only as they are needed. • When reasoning on an open number line, the position of zero is often not placed. • When working with larger numbers, an open number line without the constraint of distance from zero allows the ability to "zoom-in" on the relevant section of the number line. • The placement of the first two numbers on an open number line determines the scale of the number line. • Once the scale of the number line has been established by the placement of the first two numbers, intervals between additional numbers placed are approximately proportional.	◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*} • Characteristics of an open number line ◦ An open number line begins as a line with no intervals (or tick marks) and no positions/numbers labeled. ◦ Numbers/positions are placed on the empty number line only as they are needed. ◦ When reasoning on an open number line, the position of zero is often not placed. ◦ When working with larger numbers, an open number line without the constraint of distance from zero allows the ability to "zoom-in" on the relevant section of the number line. ◦ The placement of the first two numbers on an open number line determines the scale of the number line. • Once the scale of the number line has been established by the placement of the first two numbers, intervals between additional numbers placed are approximately proportional. ◦ The differences between numbers are approximated by the distance between the positions on the number line. ◦ Open number lines extend infinitely in both directions (arrows indicate the number line continues infinitely). ◦ Numbers increase from left to right on a horizontal number line and from bottom to top on a vertical number line. • Points to the left of a specified point on a horizontal number line are less than points to the right.

Kindergarten	Grade 1	Grade 2

	• The differences between numbers are approximated by the distance between the positions on the number line.
	• Open number lines extend infinitely in both directions (arrows indicate the number line continues infinitely).
	• Numbers increase from left to right on a horizontal number line and from bottom to top on a vertical number line.
	  ◦ Points to the left of a specified point on a horizontal number line are less than points to the right.
	  ◦ Points to the right of a specified point on a horizontal number line are greater than points to the left.
	  ◦ Points below a specified point on a vertical number line are less than points above.
	  ◦ Points above a specified point on a vertical number line are greater than points below.
	• Landmark (or anchor) numbers may be placed on the open number line to help locate other numbers.
	◦ Relative magnitude of a number describes the size of a number and its relationship to another number.
	• Order a set of numbers on an open number line.
	
	Note(s):
	
	• Grade Level(s):
	◦ Grade 1 introduces ordering whole numbers up to 120 using place value and open number lines.
	◦ Grade 2 will use place value to compare
		• Points to the right of a specified point on a horizontal number line are greater than points to the left.
		• Points below a specified point on a vertical number line are less than points above.
		• Points above a specified point on a vertical number line are greater than points below.
		◦ Landmark (or anchor) numbers may be placed on the open number line to help locate other numbers.
		• Open number line given
		
		Note(s):
		
		• Grade Level(s):
		◦ Grade 1 ordered whole numbers up to 120 using place value and open number lines.
		◦ Grade 3 will represent a number on a number line as being between two consecutive multiples of 10; 100; 1,000; or 10,000 and use words to describe relative size of numbers in order to round whole numbers.
		◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		◦ Developing proficiency in the use of place value within the base-10 numeration system
		• TxCCRS:
		◦ I. Numeric Reasoning
		◦ IX. Communication and Representation

Kindergarten	Grade 1	Grade 2

	and order whole numbers up to 1,200 using comparative language, numbers, and the symbols >, <, or =.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Developing an understanding of place value
	• TxCCRS:
	  ◦ I. Numeric Reasoning
	  ◦ IX. Communication and Representation	

		2.2F
		
		Name the whole number that corresponds to a specific point on a number line.
		
		Name
		
		THE WHOLE NUMBER THAT CORRESPONDS TO A SPECIFIC POINT ON A NUMBER LINE
		
		Including, but not limited to:
		
		• Whole numbers (0 – 1,200)
		  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
		  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}

Kindergarten	Grade 1	Grade 2

		• Characteristics of a number line
		  ◦ A number line begins as a line with predetermined intervals (or tick marks) with positions/numbers labeled.
		  • A minimum of two positions/numbers should be labeled.
		  ◦ Numbers on a number line represent the distance from zero.
		  ◦ The distance between the tick marks is counted rather than the tick marks themselves.
		  ◦ The placement of the labeled positions/numbers on a number line determines the scale of the number line.
		  • Intervals between position/numbers are proportional.
		  ◦ When reasoning on a number line, the position of zero may or may not be placed.
		  ◦ When working with larger numbers, a number line without the constraint of distance from zero allows the ability to “zoom-in” on the relevant section of the number line.
		  ◦ Number lines extend infinitely in both directions (arrows indicate the number line continues infinitely).
		  ◦ Numbers increase from left to right on a horizontal number line and from bottom to top on a vertical number line.
		  • Points to the left of a specified point on a horizontal number line are less than points to the right.
		  • Points to the right of a specified point on a horizontal number line are greater than points to the left.
		  • Points below a specified point on a

Kindergarten	Grade 1	Grade 2
		vertical number line are less than points above. • Points above a specified point on a vertical number line are greater than points below. ○ Number lines can be horizontal, vertical, or circular. • Intervals and partial labels given • Partial intervals and labels given Note(s): • Grade Level(s): ○ Grade 2 will name the whole number that corresponds to a specific point on a number line. ○ Grade 3 will determine the corresponding fraction greater than zero and less than or equal to one with denominators of 2, 3, 4, 6, and 8 given a specified point on a number line. ○ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ○ Developing proficiency in the use of place value within the base-10 numeration system • TxCCRS: ○ I. Numeric Reasoning ○ IX. Communication and Representation
Composing and Decomposing Numbers: Place Value		

Kindergarten	Grade 1	Grade 2
K.2 ***Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system. The student is expected to:***	*1.2* ***Number and operations. The student applies mathematical process standards to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:***	*2.2* ***Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:***

K.2I
 	
Compose and decompose numbers up to 10 with objects and pictures.
 	
Compose, Decompose
 	
NUMBERS UP TO 10 WITH OBJECTS AND PICTURES
 	
Including, but not limited to:
 	
• Whole numbers (0 – 10)
  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
• Compose numbers – to combine parts or smaller values to form a number
• Decompose numbers – to break a number into parts or smaller values
• Part to whole relationships
  ◦ Parts of a composed or decomposed number identified
  ◦ Correct number connected to appropriate parts
	1.2B
	
	Use concrete and pictorial models to compose and decompose numbers up to 120 in more than one way as so many hundreds, so many tens, and so many ones.
	
	Use
	
	CONCRETE AND PICTORIAL MODELS OF NUMBERS UP TO 120
	
	Including, but not limited to:
	
	• Whole numbers (0 – 120)
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
	• Numeral – a symbol used to name a number
	• Digit – any numeral from 0 – 9
	• Place value – the value of a digit as determined by its location in a number such as ones, tens, hundreds, etc.
	  ◦ Hundreds place
	  ◦ Tens place
	  ◦ Ones place
		2.2A
		
		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.
		
		Use
		
		CONCRETE AND PICTORIAL MODELS OF NUMBERS UP TO 1,200
		
		Including, but not limited to:
		
		• Whole numbers (0 – 1,200)
		  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
		  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
		• Numeral – a symbol used to name a number
		• Digit – any numeral from 0 – 9
		• Place value – the value of a digit as determined by its location in a number such as ones, tens, hundreds, one thousands, etc.
		  ◦ One thousands place
		  ◦ Hundreds place

Kindergarten	Grade 1	Grade 2
◦ Numeric relationship of one part to the other part ◦ Numeric relationship of each part to the whole ◦ Missing part determined • Composition of a number in more than one way using objects and pictures ◦ Total of the parts conserved ◦ Composed parts may be listed in any order (commutative property). ◦ Relationship of composed parts to create a new set of composed parts • Decomposition of a number in more than one way using objects and pictures • Original decomposed number conserved • Decomposed parts may be listed in any order (commutative property). • Relationship of decomposed parts to create a new set of decomposed parts Note(s):	• Base-10 place value system ◦ A number system using ten digits 0 – 9 ◦ Relationships between places are based on multiples of 10. • The magnitude (relative size) of one hundred • Concrete models ◦ Proportional models – a visual representation that demonstrates the relative size of each place value using models with proportional dimensions, meaning the model of each place value is exactly 10 times larger than the place value model to the right (e.g., the base-10 long is exactly 10 times as big as the unit showing that one 10 is equal to ten ones) • Linking cubes (proportional representation of the magnitude of a number with 1-to-10 relationship) • Bundled sticks (proportional representation of the magnitude of a number with 1-to-10 relationship)	◦ Tens place ◦ Ones place • Base-10 place value system ◦ A number system using ten digits 0 – 9 ◦ Relationships between places are based on multiples of 10. • The magnitude (relative size) of one thousand • Concrete models ◦ Proportional models – a visual representation that demonstrates the relative size of each place value using models with proportional dimensions, meaning the model of each place value is exactly 10 times larger than the place value model to the right (e.g., the base-10 long is exactly 10 times as big as the unit showing that one 10 is equal to ten ones) • Bundled sticks (proportional representation of the magnitude of a number with 1-to-10 relationship) • Base-10 blocks (proportional

Kindergarten	Grade 1	Grade 2

• Grade Level(s):
  ◦ Grade 1 will use concrete and pictorial models to compose and decompose numbers up to 120 in more than one way as so many hundreds, so many tens, and so many ones.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Developing an understanding of whole numbers
  ◦ Developing an understanding of addition and subtraction
• TxCCRS:
  • IX. Communication and Representation
	• Base-10 blocks (proportional representation of the magnitude of a number with 1-to-10 relationship)
	  ◦ Non-proportional models – a visual representation that does not maintain the proportional relationship of size, meaning the size of each place value model is not 10 times larger than the place value model to the right (e.g., the value of each place value disk is indicated by the numerical label and color but does not change in size)
	  • Place value disks (non-proportional representation with a 1-to-10 relationship)
	• Pictorial models
	  ◦ Base-10 block representations
	  ◦ Place value disk representations
	  ◦ Open number line – an empty number line where tick marks are added to represent landmarks of numbers, often indicated with arcs above the number line (referred to as jumps) demonstrating approximate proportional distances
	
	To Compose, To Decompose
	
	NUMBERS UP TO 120 IN MORE THAN ONE WAY AS SO MANY HUNDREDS, SO MANY TENS, AND SO MANY ONES
	
	Including, but not limited to:
	
	• Whole numbers (0 – 120)
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
	  ◦ Whole numbers – the set of counting
		representation of the magnitude of a number with 1-to-10 relationship)
		  ◦ Non-proportional models – a visual representation that does not maintain the proportional relationship of size, meaning the size of each place value model is not 10 times larger than the place value model to the right (e.g., the value of each place value disk is indicated by the numerical label and color but does not change in size)
		  • Place value disks (non-proportional representation with a 1-to-10 relationship)
		• Pictorial models
		  ◦ Base-10 block representations
		  ◦ Place value disk representations
		  ◦ Open number line – an empty number line where tick marks are added to represent landmarks of numbers, often indicated with arcs above the number line (referred to as jumps) demonstrating approximate proportional distances
		
		To Compose, To Decompose
		
		NUMBERS UP TO 1,200 IN MORE THAN ONE WAY AS A SUM OF SO MANY THOUSANDS, HUNDREDS, TENS, AND ONES
		
		Including, but not limited to:
		
		• Whole numbers (0 – 1,200)
		  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
		  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ...,

Kindergarten	Grade 1	Grade 2

	(natural) numbers and zero {0, 1, 2, 3, ..., *n*}
	• Compose numbers – to combine parts or smaller values to form a number
	• Decompose numbers – to break a number into parts or smaller values
	• Compose a number in more than one way.
	  ◦ As so many hundreds, so many tens, and so many ones
	• Decompose a number in more than one way.
	  ◦ As so many hundreds, so many tens, and so many ones
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Kindergarten composed and decomposed numbers up to 10 with objects and pictures.
	  ◦ Grade 2 will 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.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Developing an understanding of place value
	• TxCCRS:
	  ◦ I. Numeric Reasoning
	  ◦ IX. Communication and Representation
		n}
		• Compose numbers – to combine parts or smaller values to form a number
		• Decompose numbers – to break a number into parts or smaller values
		• Compose a number in more than one way using concrete and pictorial models.
		  ◦ As a sum of so many thousands, hundreds, tens, and ones
		• Decompose a number in more than one way using concrete and pictorial models.
		  ◦ As a sum of so many thousands, hundreds, tens, and ones
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 1 used concrete and pictorial models to compose and decompose numbers up to 120 and used objects, pictures and expanded and standard forms to represent numbers.
		  ◦ Grade 3 will compose and decompose numbers up to 100,000 using objects, pictorial models, and numbers, including expanded notation as appropriate.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Developing proficiency in the use of place value within the base-10 numeration system
		• TxCCRS:
		  ◦ I. Numeric Reasoning
		  ◦ IX. Communication and Representation

Kindergarten	Grade 1	Grade 2

	1.2C
	
	Use objects, pictures, and expanded and standard forms to represent numbers up to 120.
	
	Use
	
	OBJECTS, PICTURES, AND EXPANDED AND STANDARD FORMS TO REPRESENT NUMBERS UP TO 120
	
	Including, but not limited to:
	
	• Whole numbers (0 – 120)
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
	• Place value – the value of a digit as determined by its location in a number such as ones, tens, hundreds, etc.
	• Objects
	  ◦ Proportional models – a visual representation that demonstrates the relative size of each place value using models with proportional dimensions, meaning the model of each place value is exactly 10 times larger than the place value model to the right (e.g., the base-10 long is exactly 10 times as big as the unit showing that one 10 is equal to ten ones)
	  • Linking cubes (proportional representation of the magnitude of a number with 1-to-10 relationship)
	  • Bundled sticks (proportional
		2.2B
		
		Use standard, word, and expanded forms to represent numbers up to 1,200.
		
		Use
		
		STANDARD, WORD, AND EXPANDED FORMS TO REPRESENT NUMBERS UP TO 1,200
		
		Including, but not limited to:
		
		• Whole numbers (0 – 1,200)
		  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
		  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
		• Place value – the value of a digit as determined by its location in a number, such as ones, tens, hundreds, one thousands, etc.
		• Standard form (standard notation) – the representation of a number using digits (e.g., 1,200)
		  ◦ Period – a three-digit grouping of whole numbers where each grouping is composed of a ones place, a tens place, and a hundreds place, and each grouping is separated by a comma
		  • Thousands period is composed of the one thousands place, ten thousands place, and hundred thousands place.
		  • Units period is composed of the ones place, tens place, and hundreds place.
		  ◦ The word “thousand” after the numerical value of the thousands period is stated

Kindergarten	Grade 1	Grade 2
	representation of the magnitude of a number with 1-to-10 relationship) • Base-10 blocks (proportional representation of the magnitude of a number with 1-to-10 relationship) ○ Non-proportional models – a visual representation that does not maintain the proportional relationship of size, meaning the size of each place value model is not 10 times larger than the place value model to the right (e.g., the value of each place value disk is indicated by the numerical label and color but does not change in size) • Place value disks (non-proportional representation with a 1-to-10 relationship) • Pictures ○ Base-10 block representations ○ Place value disk representations ○ Open number line – an empty number line where tick marks are added to represent landmarks of numbers, often indicated with arcs above the number line (referred to as jumps) demonstrating approximate proportional distances ○ Place value stacking cards • Expanded form (expanded notation) – the representation of a number using place value to show the value of each digit (e.g., 119 as 100 + 10 + 9) ○ Zero may or may not be written as an addend to represent the digit 0 in a number (e.g., 107 as 100 + 0 + 7 or 100 + 7). • Standard form (standard notation) – the representation of a number using digits (e.g., 118) ○ Period – a three-digit grouping of whole	when read. ○ A comma between the thousands period and the units period is recorded when written but not stated when read. ○ The word “unit” after the numerical value of the units period is not stated when read. ○ The word “hundred” in each period is stated when read. ○ The words “ten” and “one” in each period are not stated when read. ○ The tens place digit and ones place digit in each period are stated as a two-digit number when read. ○ Zeros are used as place holders between digits as needed to maintain the value of each digit (e.g., 1,075). ○ Leading zeros in a whole number are not commonly used in standard form, but are not incorrect and do not change the value of the number (e.g., 037 equals 37). • Word form (written notation) – the representation of a number using written words (e.g., 1,152 as one thousand, one hundred fifty-two) ○ The word “thousand” after the numerical value of the thousands period is stated when read and recorded when written. ○ A comma between the thousands period and the units period is not stated when read but is recorded when written. ○ The word “unit” after the numerical value of the units period is not stated when read and not recorded when written. ○ The word “hundred” in each period is stated when read and recorded when written. ○ The words “ten” and “one” in each period

Kindergarten	Grade 1	Grade 2
	numbers where each grouping is composed of a ones place, a tens place, and a hundreds place, and each grouping is separated by a comma • Units period is composed of the ones place, tens place, and hundreds place. ○ The word “unit” after the numerical value of the units period is not stated when read. ○ The word “hundred” in each period is stated when read. ○ The words “ten” and “one” in each period are not stated when read. ○ The tens place digit and ones place digit in each period are stated as a two-digit number when read. ○ Zeros are used as place holders between digits as needed to maintain the value of each digit (e.g., 107). ○ Leading zeros in a whole number are not commonly used in standard form, but are not incorrect and do not change the value of the number (e.g., 037 equals 37). • Multiple representations ○ Number presented in concrete or pictorial form represented in expanded form ○ Number presented in concrete or pictorial form represented in standard form ○ Number presented in standard form represented in expanded form ○ Number presented in expanded form represented in standard form Note(s):	are not stated when read and not recorded when written. ○ The tens place digit and ones place digit in each period are stated as a two-digit number when read and recorded using a hyphen, where appropriate, when written (e.g., twenty-three, thirteen, etc.). ○ The zeros in a whole number are not stated when read and are not recorded when written (e.g., 1,005 in standard form is read and written as one thousand, five in word form). • Expanded form (expanded notation) – the representation of a number using place value to show the value of each digit (e.g., 1,189 as 1,000 + 100 + 80 + 9) ○ Zero may or may not be written as an addend to represent the digit 0 in a number (e.g., 1,075 as 1,000 + 0 + 70 + 5 or 1,000 + 70 + 5). • Multiple representations ○ Standard form to expanded form in numerals and expanded form in numerals to standard form ○ Standard form to expanded form in words and numerals and expanded form in words and numerals to standard form ○ Standard form to word form and word form to standard form ○ Expanded form in numerals to expanded form in words and numerals and expanded form in words and numerals to expanded form in numerals

Kindergarten	Grade 1	Grade 2

	• Grade Level(s):
	  ◦ Grade 1 introduces representing numbers in expanded and standard forms.
	  ◦ Grade 2 will introduce representing numbers up to 1,200 in word form.
	  ◦ Grade 2 will use standard, word, and expanded forms to represent numbers up to 1,200.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Developing an understanding of place value
	• TxCCRS:
	  ◦ I. Numeric Reasoning
	  ◦ IX. Communication and Representation
		◦ Expanded form numerals to word form and word form to expanded form in numerals
		◦ Expanded form in words and numerals to word form and word form to expanded form in words and numerals
		◦ Expanded form in numerals given out of place value order to standard form or word form
		◦ Expanded form in words and numerals given out of place value order to standard form or word form
		◦ Equivalent compositions of numbers with the same value
		◦ Equivalent decompositions of numbers with the same value
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 1 used objects, pictures, and expanded and standard forms to represent numbers up to 120.
		  ◦ Grade 3 will compose and decompose numbers up to 100,000 using objects, pictorial models, and numbers, including expanded notation as appropriate.
		  ◦ Grades 1 and 2 student expectations refer to expanded, standard, and word form, whereas Grades 3, 4, and 5 student expectations refer to expanded notation.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Developing proficiency in the use of place value within the base-10 numeration system
		• TxCCRS:

Kindergarten	Grade 1	Grade 2
		◦ I. Numeric Reasoning ◦ IX. Communication and Representation
		Representing Fraction Concepts
		2.3 ***Number and operations. The student applies mathematical process standards to recognize and represent fractional units and communicates how they are used to name parts of a whole. The student is expected to:***
		2.3A **Partition objects into equal parts and name the parts, including halves, fourths, and eighths, using words.** Partition OBJECTS INTO EQUAL PARTS, INCLUDING HALVES, FOURTHS, AND EIGHTHS Including, but not limited to: • Fraction – a number that can be used to name part of an object or part of a set of objects • Partition – separation or division of an object into parts • Whole divided into two, four, or eight equal parts ◦ Each equal part of an object is the same size and the same shape. ◦ Equal parts of identical wholes may not be

Kindergarten	Grade 1	Grade 2

		the same shape.
		  - Equal parts of non-identical wholes may not be equal in size or shape.
		- Concrete models of whole objects
		  - Linear models
		    - Cuisenaire rods, fraction bars, linking cube trains, folded paper strips, etc.
		  - Area models
		    - Fractions circles or squares, pattern blocks, geoboards, etc.
		
		Name
		
		THE EQUAL PARTS OF PARTITIONED OBJECTS, INCLUDING HALVES, FOURTHS, AND EIGHTHS, USING WORDS
		
		Including, but not limited to:
		
		- Appropriate oral and written mathematical language to name equal parts
		- Hyphen used to separate the number of parts being considered from the total number of parts
		  - Number of parts being considered written before the hyphen and said first
		  - Total number of parts written after the hyphen and said last
		- Two equal parts
		  - One-half, two-halves or one whole
		- Four equal parts
		  - One-fourth, two-fourths, three-fourths, four-fourths or one whole
		  - One-quarter, two-quarters, three-quarters, four-quarters or one whole
		- Eight equal parts
		  - One-eighth, two-eighths, three-eighths, four-

Kindergarten	Grade 1	Grade 2

		eighths, five-eighths, six-eighths, seven-eighths, eight-eighths or one whole
		• Relationship between ordinal numbers and the number of parts named in a fraction
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 1 partitioned two-dimensional figures into two and four fair shares or equal parts and described the parts using words.
		  ◦ Grade 2 is not expected to identify the relationship between equivalent fractions (e.g., two-fourths is the same as one-half, etc.).
		  ◦ Grade 3 will introduce pictorial models of fractions, fractional parts of a set of objects, and fraction symbols.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Applying knowledge of two-dimensional shapes and three-dimensional solids, including exploration of early fraction concepts
		• TxCCRS:
		  ◦ I. Numeric Reasoning
		  ◦ IX. Communication and Representation

		2.3D **Identify examples and non-examples of halves, fourths, and eighths.** Identify

Kindergarten	Grade 1	Grade 2

		EXAMPLES AND NON-EXAMPLES OF HALVES, FOURTHS, AND EIGHTHS
		
		Including, but not limited to:
		
		• Fraction – a number that can be used to name part of an object or part of a set of objects
		• Whole divided into two, four, or eight equal parts
		• Examples of halves, fourths, and eighths
		  ◦ Equal parts or fair shares that equal the given one whole
		• Non-examples of halves, fourths, and eighths
		  ◦ Unequal parts that equal the given one whole
		  ◦ Equal or unequal parts that are less than the given one whole
		  ◦ Equal or unequal parts that are more than the given one whole
		• Concrete models of whole objects
		  ◦ Linear models
		  • Cuisenaire rods, fraction bars, linking cube trains, folded paper strips, etc.
		  ◦ Area models
		  • Fractions circles or squares, pattern blocks, geoboards, etc.
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 3 will represent fractions greater than zero and less than or equal to one with denominators of 2, 3, 4, 6, and 8 using concrete objects and pictorial models, including strip diagrams and number lines.
		  ◦ Various mathematical process standards

Kindergarten	Grade 1	Grade 2

		will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Applying knowledge of two-dimensional shapes and three-dimensional solids, including exploration of early fraction concepts
		• TxCCRS:
		  ◦ I. Numeric Reasoning
		  ◦ IX. Communication and Representation

		2.3C **Use concrete models to count fractional parts beyond one whole using words and recognize how many parts it takes to equal one whole.** Use CONCRETE MODELS TO COUNT FRACTIONAL PARTS BEYOND ONE WHOLE USING WORDS Including, but not limited to: • Fraction – a number that can be used to name part of an object or part of a set of objects • Relationship between counting whole numbers and counting fractional parts of a whole ◦ Hierarchical inclusion – concept of nested numbers, meaning each prior number in the counting sequence is included in the set as the set increases (e.g., 18 is 17 increased by 1; 18 decreased by 1 is 17; etc.) • Appropriate oral and written mathematical language

Kindergarten	Grade 1	Grade 2

		• Wholes divided into two, four, or eight equal parts
		• Concrete models of whole objects
		  ◦ Linear models
		  • Cuisenaire rods, fraction bars, linking cube trains, folded paper strips, etc.
		  ◦ Area models
		  • Fractions circles or squares, pattern blocks, geoboards, etc.
		• Count fractional parts up to one whole using concrete models
		  ◦ Determination of the number of parts that equal one whole
		  • Two-halves equal one whole; four-fourths equal one whole; eight-eighths equal one whole
		  ◦ Determination of the number of parts being counted
		  ◦ Correct sequence of fractional names
		  • Two equal parts
		  ◦ One-half, two-halves or one whole
		  • Four equal parts
		  ◦ One-fourth, two-fourths, three-fourths, four-fourths or one whole
		  ◦ One-quarter, two-quarters, three-quarters, four-quarters or one whole
		  • Eight equal parts
		  ◦ One-eighth, two-eighths, three-eighths, four-eighths, five-eighths, six-eighths, seven-eighths, eight-eighths or one whole
		• Count fractional parts beyond one whole using concrete models
		  ◦ Determination of the number of parts that equal one whole
		  • Two-halves equal one whole; four-fourths

Kindergarten	Grade 1	Grade 2

		equal one whole; eight-eighths equal one whole
		- Determination of the number of parts being counted
		- Correct sequence of fractional names
		  - Two equal parts
		  - One-half, two-halves, three-halves, four-halves, five-halves, etc.
		  - One-half, one whole, one and one-half, two wholes, two and one-half, etc.
		  - Four equal parts
		  - One-fourth, two-fourths, three-fourths, four-fourths, five-fourths, six-fourths, seven-fourths, eight-fourths, nine-fourths, etc.
		  - One-fourth, two-fourths, three-fourths, one whole, one and one-fourth, one and two-fourths, one and three-fourths, two wholes, two and one-fourth, etc.
		  - One-quarter, two-quarters, three-quarters, four-quarters, five-quarters, six-quarters, seven-quarters, eight-quarters, nine-quarters, etc.
		  - One-quarter, two-quarters, three-quarters, one whole, one and one-quarter, one and two-quarters, one and three-quarters, two wholes, two and one-quarter, etc.
		  - Eight equal parts
		  - One-eighth, two-eighths, three-eighths, four-eighths, five-eighths, six-eighths, seven-eighths, eight-eighths, nine-eighths, ten-eighths, eleven-eighths, twelve-eighths, thirteen-eighths, fourteen-eighths, fifteen-eighths, sixteen-eighths, seventeen-eighths,

Kindergarten	Grade 1	Grade 2

		etc.
		  - One-eighth, two-eighths, three-eighths, four-eighths, five-eighths, six-eighths, seven-eighths, one whole, one and one-eighth, one and two-eighths, one and three-eighths, one and four-eighths, one and five-eighths, one and six-eighths, one and seven-eighths, two wholes, two and one-eighth, etc.
		
		Recognize
		
		HOW MANY PARTS IT TAKES TO EQUAL ONE WHOLE
		
		Including, but not limited to:
		
		- Recognition of the whole
		  - Recognition of the number of parts that equal one whole
		  - Two-halves equal one whole; four-fourths equal one whole; eight-eighths equal one whole
		  - Recognition of the number of parts being considered
		  - Number of parts being considered within one whole
		  - Number of parts being considered beyond one whole
		
		Note(s):
		
		- Grade Level(s):
		  - Grade 3 will represent fractions greater than zero and less than or equal to one with denominators of 2, 3, 4, 6, and 8 using concrete objects and pictorial models, including strip diagrams and number lines.

Kindergarten	Grade 1	Grade 2
		◦ Grade 3 will solve problems involving partitioning an object or a set of objects among two or more recipients using pictorial representations of fractions with denominators of 2, 3, 4, 6, and 8. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Applying knowledge of two-dimensional shapes and three-dimensional solids, including exploration of early fraction concepts • TxCCRS: ◦ I. Numeric Reasoning ◦ IX. Communication and Representation
		2.3B **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.** Explain THE MORE FRACTIONAL PARTS USED TO MAKE A WHOLE, THE SMALLER THE PART; AND THE FEWER THE FRACTIONAL PARTS, THE LARGER THE PART Including, but not limited to: • Fraction – a number that can be used to name part of an object or part of a set of objects • Inverse relationship between the size of the fractional part and the number of equal parts

Kindergarten	Grade 1	Grade 2
		in the whole when given the same size whole ◦ The greater the number of parts, the smaller the size of the parts ◦ The smaller the number of parts, the greater the size of the parts • Whole divided into two, four, or eight equal parts • Concrete models of whole objects ◦ Linear models • Cuisenaire rods, fraction bars, linking cube trains, folded paper strips, etc. ◦ Area models • Fractions circles or squares, pattern blocks, geoboards, etc. Note(s): • Grade Level(s): ◦ Grade 1 partitioned two-dimensional figures into two and four fair shares or equal parts and described the parts using words. ◦ Grade 3 will introduce pictorial models of fractions, fractional parts of a set of objects, and fraction symbols. ◦ Grade 3 will explain that the unit fraction $\frac{1}{b}$ represents the quantity formed by one part of a whole that has been partitioned into *b* equal parts where *b* is a non-zero whole number. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Applying knowledge of two-dimensional shapes and three-dimensional solids, including exploration of early fraction

Kindergarten	Grade 1	Grade 2

		concepts
		• TxCCRS:
		  ◦ I. Numeric Reasoning
		  ◦ IX. Communication and Representation

Adding and Subtracting Whole Numbers, Decimals, and Rational Numbers		
K.3 ***Number and operations. The student applies mathematical process standards to develop an understanding of addition and subtraction situations in order to solve problems. The student is expected to:***	***1.3*** ***Number and operations. The student applies mathematical process standards to develop and use strategies for whole number addition and subtraction computations in order to solve problems. The student is expected to:***	***2.4*** ***Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve addition and subtraction problems with efficiency and accuracy. The student is expected to:***
K.3A **Model the action of joining to represent addition and the action of separating to represent subtraction.** Model THE ACTION OF JOINING TO REPRESENT ADDITION	**1.3B** **Use objects and pictorial models to solve word problems involving joining, separating, and comparing sets within 20 and unknowns as any one of the terms in the problem such as 2 + 4 = [ ]; 3 + [ ] = 7; and 5 = [ ] – 3.** Use	

Kindergarten	Grade 1	Grade 2

Including, but not limited to:
• Whole numbers
  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, …, *n*}
  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, …, *n*}
• Addition
  ◦ Addend – a number being added or joined together with another number(s)
  ◦ Sum – the total when two or more addends are joined
  ◦ Addition of whole numbers up to sums of 10
  • Including 0 as an addend
• Connection between the action of joining situations and the concept of addition
  ◦ Joining situations in contexts that represent an action (e.g., Kristin had 2 pencils, and her teacher gave her 3 more pencils; etc.)
  ◦ Joining situations in contexts that represent no action (e.g., Kristin had 2 blue pencils and 3 red pencils; etc.)
• Appropriate language for joining situations
  ◦ Addend, sum, start amount, change amount, result amount
• Connection between quantities and numbers in problem situations to objects and drawings used
• Concrete models to represent contextual joining situations
  ◦ Physical joining of concrete objects
• Pictorial models to represent contextual joining situations
	OBJECTS AND PICTORIAL MODELS TO SOLVE WORD PROBLEMS INVOLVING JOINING, SEPARATING, AND COMPARING SETS WITHIN 20 AND UNKNOWNS AS ANY ONE OF THE TERMS IN THE PROBLEM
	
	Including, but not limited to:
	• Whole numbers
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, …, *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, …, *n*}
	• Addition
	  ◦ Sum – the total when two or more addends are joined
	  ◦ Addend – a number being added or joined together with another number(s)
	  ◦ Addition of whole numbers within 20
	• Subtraction
	  ◦ Difference – the remaining amount after the subtrahend has been subtracted from the minuend
	  ◦ Minuend – a number from which another number will be subtracted
	  ◦ Subtrahend – a number to be subtracted from a minuend
	  ◦ Subtraction of whole numbers within 20
	• Solutions recorded with a number sentence
	  ◦ Number sentence – a mathematical statement composed of numbers, and/or an unknown(s), and/or an operator(s), and an equality or inequality symbol
	  ◦ Number sentences, or equations, with	

Kindergarten	Grade 1	Grade 2
◦ Simple sketches representing concrete models without unnecessary details ◦ Physical joining of pictorial representations by circling or connecting • Acting out to represent contextual joining situations • Tools to model contextual joining situations ◦ Part-part-whole mat ◦ Two five frames ◦ Number path Model THE ACTION OF SEPARATING TO REPRESENT SUBTRACTION Including, but not limited to:	equal sign at beginning or end ◦ Unknown in any position • Concrete models ◦ Sets of objects within 20 ◦ Base-10 blocks, linking cubes, counters, etc. • Pictorial models ◦ Base-10 pictorials, number lines, strip diagrams, etc. • Strip diagram – a linear model used to illustrate number relationships • Mathematical and real-world problem situations ◦ Problems involving action • Joining problems ◦ Result unknown	

Kindergarten	Grade 1	Grade 2

• Whole numbers
  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
• Subtraction
  ◦ Minuend – a number from which another number will be subtracted
  ◦ Subtrahend – a number to be subtracted from a minuend
  ◦ Difference – the remaining amount after the subtrahend has been subtracted from the minuend
  ◦ Subtraction of whole numbers up to minuends of 10
  • Including 0 as the subtrahend
  • Including 0 as the difference
• Connection between the action of separating
	◦ Change unknown
	  ◦ Start unknown
	  ◦ Separating problems
	  ◦ Result unknown
	  ◦ Change unknown
	  ◦ Start unknown
	• Problems with no action
	  • Part-part-whole problems
	  • Whole unknown
	  • Part unknown
	  • Compare problems
	  • Difference unknown
	  • Larger part unknown
	  • Smaller part unknown
	• Recognition of addition and subtraction as inverse operations
	  ◦ Addition can be reversed by subtraction.
	  ◦ Subtraction can be reversed by addition.
	  ◦ Fact families – related number sentences using the same set of numbers
	
	Note(s):	

Kindergarten	Grade 1	Grade 2

and the concept of subtraction
  - Separating situations in contexts that represent an action (e.g., Mark had 5 books, and then he gave 2 books away; etc.)
  - Separating situations in contexts that represent no action (e.g., Mark had 5 books. Two of the books are about animals and the rest are about cars; etc.)
- Appropriate language for separating situations
  - Start amount, change amount, result amount, difference, removed, separated from, taken away from, etc.
- Connection between quantities and numbers in problem situations to objects and drawings used
- Concrete models to represent contextual separating situations
  - Physical separation of concrete objects
- Pictorial models to represent contextual separating situations
  - Simple sketches representing concrete models without unnecessary details
  - Physical separation of pictorial representations by crossing out or circling
- Acting out to represent contextual separating situations
- Tools to model contextual separating situations
  - Part-part-whole mat
  - Two five frames
  - Number path
 	
Note(s):
 	
- Grade Level(s):
  - Grade 1 will use objects and pictorial
	- Grade Level(s):
	  - Kindergarten modeled the action of joining to represent addition and the action of separating to represent subtraction.
	  - Grade 1 introduces comparison problems.
	  - Various mathematical process standards will be applied to this student expectation as appropriate.
	- TxRCFP:
	  - Solving problems involving addition and subtraction
	- TxCCRS:
	  - I. Numeric Reasoning
	  - II.D. Algebraic Reasoning – Representations
	  - VIII. Problem Solving and Reasoning
	  - IX. Communication and Representation
	  - X. Connections	

Kindergarten	Grade 1	Grade 2

models to solve word problems involving joining, separating, and comparing sets within 20 and unknowns as any one of the terms in the problem such as 2 + 4 = [ ]; 3 + [ ] = 7; and 5 = [ ] – 3.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Developing an understanding of addition and subtraction
• TxCCRS:
  ◦ I.B. Numeric Reasoning – Number operations
  ◦ VIII. Problem Solving and Reasoning
  • IX. Communication and Representation		

K.3B
 	
Solve word problems using objects and drawings to find sums up to 10 and differences within 10.
 	
Solve
 	
WORD PROBLEMS USING OBJECTS AND DRAWINGS TO FIND SUMS UP TO 10
 	
Including, but not limited to:
 	
• Whole numbers
  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
	1.3C
	
	Compose 10 with two or more addends with and without concrete objects.
	
	Compose
	
	10 WITH TWO OR MORE ADDENDS WITH AND WITHOUT CONCRETE OBJECTS
	
	Including, but not limited to:
	
	• Whole numbers (0 – 10)
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}	

Kindergarten	Grade 1	Grade 2

• Addition
  ◦ Addend – a number being added or joined together with another number(s)
  ◦ Sum – the total when two or more addends are joined
  ◦ Addition of whole numbers with sums up to 10
  • Including 0 as an addend
• Relationship between composing numbers and addition
• Mathematical and real-world problem situations
• Situational language
  ◦ Action words indicating joining of quantities
  ◦ Part-part-whole relationship of quantities, implied or mental joining
• Connection between quantities and numbers in problem situations to objects and drawings used
• Joining situations in contexts that represent an action (e.g., Kristin had 2 pencils, and her teacher gave her 3 more pencils; etc.)
  ◦ Start quantity (addend) given, change quantity (addend) given, result (sum) unknown
• Joining situations in contexts that represent no action (e.g., Kristin had 2 blue pencils and 3 red pencils; etc.)
	• Compose numbers – to combine parts or smaller values to form a number
	• Addend – a number being added or joined together with another number(s)
	• Solutions recorded with a number sentence
	  ◦ Number sentence – a mathematical statement composed of numbers, and/or an unknown(s), and/or an operator(s), and an equality or inequality symbol
	  ◦ Number sentences, or equations, with equal sign at beginning or end
	• Commutative property of addition – if the order of the addends are changed, the sum will remain the same
	• With concrete objects
	  ◦ Linking cubes, counters, ten frame mats, color tiles, a Rekenrek counting rack, etc.
	  • Multiple compositions of 10 with two addends
	  • Multiple compositions of 10 with more than two addends
	• Without concrete objects
	  ◦ Multiple compositions of 10 with two addends
	  ◦ Multiple compositions of 10 with more than two addends
	
	Note(s):	

Kindergarten	Grade 1	Grade 2
◦ Part-part-whole problems, whole unknown • Both part quantities (addends) given, whole (sum) unknown • Addition strategies based on counting ◦ Count all • One-to-one correspondence • Count out one quantity, count out the other quantity, and then count both quantities together. ◦ Count on strategies • One-to-one correspondence • Count on from the first number presented. • Count on from the largest number. • Connection to hierarchical inclusion ◦ Hierarchical inclusion – concept of nested numbers, meaning each prior number in the counting sequence is included in the set as the set increases (e.g., 18 is 17 increased by 1; 18 decreased by 1 is 17; etc.) ◦ Adding 1 does not require counting. • Properties of addition ◦ Quantities may be joined in any order (commutative property). ◦ A number keeps its identity when 0 is added to it (additive identity property). Solve WORD PROBLEMS USING OBJECTS AND DRAWINGS TO FIND DIFFERENCES WITHIN 10 Including, but not limited to: • Whole numbers ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time	• Grade Level(s): ◦ Kindergarten solved word problems using objects and drawings to find sums up to 10 and differences within 10. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Solving problems involving addition and subtraction • TxCCRS: ◦ I. Numeric Reasoning ◦ IX. Communication and Representation	

Kindergarten	Grade 1	Grade 2

{1, 2, 3, …, *n*}
  - Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, …, *n*}
- Subtraction
  - Minuend – a number from which another number will be subtracted
  - Subtrahend – a number to be subtracted from a minuend
  - Difference – the remaining amount after the subtrahend has been subtracted from the minuend
  - Subtraction of whole numbers to find differences within 10
  - Including 0 as the subtrahend
- Relationship between decomposing numbers and subtraction
- Mathematical and real-world problem situations
- Situational language
  - Action words indicating separation of quantities
  - Part-part-whole relationship of quantities
- Connection between quantities and numbers in problem situations to objects and drawings used
- Separating situations in contexts that represent an action (e.g., Mark had 5 books, and then he gave 2 books away; etc.)
  - Start quantity (minuend) given, change quantity (subtrahend) given, result (difference) unknown
- Separating situations in contexts that represent no action (e.g., Mark had 5 books. Two of the books are about animals and the rest are about cars; etc.)		

Kindergarten	Grade 1	Grade 2
◦ Part-part-whole problems, part unknown • Whole quantity (minuend) given, one part quantity (subtrahend) given, other part (difference) unknown • Subtraction strategies based on counting ◦ Removing • One-to-one correspondence • Count out start quantity, count and remove change quantity, and then count remaining quantity. ◦ Count on • One-to-one correspondence • Count on from the change quantity to the whole quantity and then recount the remaining quantity beginning with 1. ◦ Count backward • One-to-one correspondence • Count the whole quantity and then count backward the amount of the change quantity, with the last number in sequence naming the difference. • Connection to hierarchical inclusion ◦ Hierarchical inclusion – concept of nested numbers, meaning each prior number in the counting sequence is included in the set as the set increases (e.g., 18 is 17 increased by 1; 18 decreased by 1 is 17; etc.) ◦ Subtracting 1 does not require counting. • Properties of subtraction ◦ Commutative property does not apply to subtraction. ◦ A number keeps its identity when 0 is subtracted from it (additive identity property). Note(s):		

Kindergarten	Grade 1	Grade 2

• Grade Level(s):
  ◦ Grade 1 will compose 10 with two or more addends with and without concrete objects.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Developing an understanding of addition and subtraction
• TxCCRS:
  ◦ I.B. Numeric Reasoning – Number operations
  ◦ VIII. Problem Solving and Reasoning
  • IX. Communication and Representation		

K.3C
 	
Explain the strategies used to solve problems involving adding and subtracting within 10 using spoken words, concrete and pictorial models, and number sentences.
 	
Explain
 	
THE STRATEGIES USED TO SOLVE PROBLEMS INVOLVING ADDING AND SUBTRACTING WITHIN 10 USING SPOKEN WORDS, CONCRETE AND PICTORIAL MODELS, AND NUMBER SENTENCES
 	
Including, but not limited to:
 	
• Whole numbers
  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ...,
	1.3E
	
	Explain strategies used to solve addition and subtraction problems up to 20 using spoken words, objects, pictorial models, and number sentences.
	
	Explain
	
	STRATEGIES USED TO SOLVE ADDITION AND SUBTRACTION PROBLEMS UP TO 20 USING SPOKEN WORDS, OBJECTS, PICTORIAL MODELS, AND NUMBER SENTENCES
	
	Including, but not limited to:
	
	• Whole numbers
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ...,
		2.4B
		
		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.
		
		Add
		
		UP TO FOUR TWO-DIGIT NUMBERS USING MENTAL STRATEGIES AND ALGORITHMS BASED ON KNOWLEDGE OF PLACE VALUE AND PROPERTIES OF OPERATIONS
		
		Including, but not limited to:
		
		• Whole numbers
		  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
		  ◦ Whole numbers – the set of counting

Kindergarten	Grade 1	Grade 2

n}
• Addition
  ◦ Addend – a number being added or joined together with another number(s)
  ◦ Sum – the total when two or more addends are joined
  ◦ Addition of whole numbers with sums up to 10
  • Including 0 as an addend
• Subtraction
  ◦ Minuend – a number from which another number will be subtracted
  ◦ Subtrahend – a number to be subtracted from a minuend
  ◦ Difference – the remaining amount after the subtrahend has been subtracted from the minuend
  ◦ Subtraction of whole numbers to find differences within 10
  • Including 0 as the subtrahend
  • Including 0 as the difference
• Mathematical and real-world problem situations
• Detailed explanation of the solution process and strategy
  ◦ Addition strategies
  • Count all
  • Count on from the first number presented
  • Count on from the largest number
  ◦ Subtraction strategies
  • Removing
  • Count on
  • Count backward
  ◦ Connection between information in the
	n}
	• Mathematical and real-world problem situations
	• Addition
	  ◦ Sum – the total when two or more addends are joined
	  ◦ Addend – a number being added or joined together with another number(s)
	  ◦ Addition of whole numbers within 20
	• Subtraction
	  ◦ Difference – the remaining amount after the subtrahend has been subtracted from the minuend
	  ◦ Minuend – a number from which another number will be subtracted
	  ◦ Subtrahend – a number to be subtracted from a minuend
	  ◦ Subtraction of whole numbers within 20
	• Detailed explanation of solution process and strategy
	  ◦ Addition strategies
	  • Making 10
	  • Hidden tens
	  • Plus 9
	  • Plus 10
	  • Doubles
	  • Doubles plus/minus 1
	  • Hidden doubles
	  • In-betweens
	  • Fact families
	  • Commutative property
	  • Plus 0 (additive identity)
	  • Plus 1
	  • Counting on
		(natural) numbers and zero {0, 1, 2, 3, ..., *n*}
		• Addition
		  ◦ Sum – the total when two or more addends are joined
		  ◦ Addend – a number being added or joined together with another number(s)
		  ◦ Sums of up to four two-digit whole numbers
		  ◦ With and without regrouping
		• Mental strategies based on place value
		  ◦ Application of basic facts within each place value
		  ◦ Composition/decomposition of numbers to form friendly numbers
		• Algorithms based on place value
		  ◦ With and without regrouping
		  ◦ Partial sums
		  • Addition of numbers in expanded form
		  • Partial sums recorded vertically
		  ◦ Traditional algorithm
		• Properties of operations
		  ◦ Addends may be added in any order to produce the same sum.
		  ◦ Addends may be decomposed and grouped in any order to produce the same sum.
		• Relationships between addition using mental strategies, algorithms, and properties of operations to addition using concrete models
		• Relationships between addition using mental strategies, algorithms, and properties of operations to addition using open number lines
		
		Subtract

Kindergarten	Grade 1	Grade 2
problem and problem type • Joining situations in contexts that represent an action (e.g., Kristin had 2 pencils, and her teacher gave her 3 more pencils; etc.) • Joining situations in contexts that	◦ Subtraction strategies • Counting back • Counting up • Fact families • Minus 0 (additive identity) • Minus 1	TWO-DIGIT NUMBERS USING MENTAL STRATEGIES AND ALGORITHMS BASED ON KNOWLEDGE OF PLACE VALUE AND PROPERTIES OF OPERATIONS Including, but not limited to:

Kindergarten	Grade 1	Grade 2
represent no action (e.g., Kristin had 2 blue pencils and 3 red pencils; etc.) • Separating situations in contexts that represent an action (e.g., Mark had 5 books, and then he gave 2 books away; etc.) • Separating situations in contexts that represent no action (e.g., Mark had 5 books. Two of the books are about animals and the rest are about cars; etc.) ○ Relationship between quantities of objects used, pictures drawn and number sentences to the problem situation ○ Explanation using spoken words • Appropriate mathematical language for joining or separating situations ○ Labels for quantities represented ○ Explanation using objects • Linking cubes, counters, etc. ○ Explanation using pictorials • Sketches, etc. ○ Explanation using number sentences • Number sentence – a mathematical statement composed of numbers, and/or an unknown(s), and/or an operator(s), and an equality or inequality symbol • Addition symbol represents joining ○ Addend + addend = sum ○ Sum = addend + addend • Subtraction symbol represents separating ○ Minuend – subtrahend = difference ○ Difference = minuend – subtrahend • Equal symbol indicates the same value being represented on both side(s) Note(s):	• Minus 2 • Minus 9 • Decompose the subtrahend • Decompose the minuend ○ Connection between information in the problem and problem type • Addition situations • Subtraction situations • Part-part-whole situations • Comparison situations ○ Relationship between quantities of objects used, pictures drawn, and number sentences to the problem situation ○ Explanation using spoken words • Appropriate mathematical language for addition and subtraction situations ○ Labels for quantities represented ○ Explanation using objects • Base-10 blocks, linking cubes, counters, etc. ○ Explanation using pictorials • Base-10 pictorials, number lines, strip diagrams, etc. ○ Strip diagram – a linear model used to illustrate number relationships ○ Explanation using number sentences • Number sentence – a mathematical statement composed of numbers, and/or an unknown(s), and/or an operator(s), and an equality or inequality symbol • Addition symbol represents joining ○ Addend + addend = sum ○ Sum = addend + addend • Subtraction symbol represents separating • Minuend – subtrahend = difference • Difference = minuend – subtrahend	• Whole numbers (0 – 1,000) ○ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, …, *n*} ○ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, …, *n*} • Subtraction ○ Difference – the remaining amount after the subtrahend has been subtracted from the minuend ○ Minuend – a number from which another number will be subtracted ○ Subtrahend – a number to be subtracted from a minuend ○ Difference of two-digit whole numbers ○ With and without regrouping • Mental strategies based on place value ○ Application of basic facts within each place value ○ Composition/decomposition of numbers to form friendly numbers • Algorithms based on place value ○ With and without regrouping ○ Partial differences • Subtraction of numbers in expanded form ○ Traditional algorithm • Properties of operations ○ Minuend and/or subtrahend may be decomposed to produce friendly numbers. • Relationships between subtraction using mental strategies, algorithms, and properties of operations to subtraction using concrete models • Relationships between subtraction using

Kindergarten	Grade 1	Grade 2

• Grade Level(s):
  ◦ Kindergarten introduces number sentences.
  ◦ Grade 1 will explain strategies used to solve addition and subtraction problems up to 20 using spoken words, objects, pictorial models, and number sentences.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Developing an understanding of addition and subtraction
• TxCCRS:
  ◦ I.B. Numeric Reasoning – Number operations
  ◦ VIII. Problem Solving and Reasoning
  • IX. Communication and Representation
	◦ Equal symbol represents a relationship where expressions on each side of the equal sign represent the same value
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Kindergarten explained the strategies used to solve problems involving adding and subtracting within 10 using spoken words, concrete and pictorial models, and number sentences.
	  ◦ Grade 2 will 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.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Solving problems involving addition and subtraction
	• TxCCRS:
	  ◦ I. Numeric Reasoning
	  ◦ II.D. Algebraic Reasoning – Representations
	  ◦ VIII. Problem Solving and Reasoning
	  ◦ IX. Communication and Representation
	  ◦ X. Connections
		• Relationships between subtraction using mental strategies, algorithms, and properties of operations to subtraction using open number lines
		
		Note(s):
		
		• Grade Level(s):
		  • Grade 1 explained strategies used to solve addition and subtraction problems up to 20 using spoken words, objects, pictorial models, and number sentences.
		  • Grade 2 will 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.
		  • Grade 3 will 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.
		  • Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000
		• TxCCRS:
		  ◦ I. Numeric Reasoning
		  ◦ IX. Communication and Representation

	1.3A	**2.4C**

Kindergarten	Grade 1	Grade 2

	Use concrete and pictorial models to determine the sum of a multiple of 10 and a one-digit number in problems up to 99.
	
	Use
	
	CONCRETE AND PICTORIAL MODELS TO DETERMINE THE SUM OF A MULTIPLE OF 10 AND A ONE-DIGIT NUMBER IN PROBLEMS UP TO 99
	
	Including, but not limited to:
	
	• Whole numbers (0 – 99)
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, …, *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, …, *n*}
	• Addition
	  ◦ Sum – the total when two or more addends are joined
	  ◦ Addend – a number being added or joined together with another number(s)
	  ◦ Digit – any numeral from 0 – 9
	  ◦ Sums of a multiple of 10 and a one-digit number up to 99
	  • Multiples of 10
	  ◦ 10, 20, 30, 40, 50, 60, 70, 80, 90
	• Addition strategy based on patterns and place value
	• Solutions recorded with a number sentence
	  ◦ Number sentence – a mathematical statement composed of numbers, and/or an unknown(s), and/or an operator(s), and an equality or inequality symbol
		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.
		
		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
		
		Including, but not limited to:
		
		• Whole numbers
		  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, …, *n*}
		  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, …, *n*}
		• Mathematical and real-world problem situations
		  ◦ One-step and multi-step problems
		• Addition
		  ◦ Sum – the total when two or more addends are joined
		  ◦ Addend – a number being added or joined together with another number(s)
		  ◦ Addition of whole numbers within 1,000
		  ◦ Sums of up to four two-digit whole numbers
		  ◦ Sums of two three-digit whole numbers
		  ◦ With or without regrouping
		• Subtraction
		  ◦ Difference – the remaining amount after the subtrahend has been subtracted from the

Kindergarten	Grade 1	Grade 2
	◦ Number sentences, or equations, with equal sign at beginning or end • Concrete models ◦ Base-10 blocks, linking cubes, place value disks, etc. • Pictorial models ◦ Base-10 pictorials, place value disks, number lines, strip diagrams, etc. • Strip diagram – a linear model used to illustrate number relationships • Mathematical and real-world problem situations ◦ Joining problems ◦ Comparison problems Note(s): • Grade Level(s): ◦ Grade 2 will 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. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing an understanding of place value ◦ Solving problems involving addition and subtraction • TxCCRS: ◦ I. Numeric Reasoning ◦ VIII. Problem Solving and Reasoning ◦ IX. Communication and Representation	minuend ◦ Minuend – a number from which another number will be subtracted ◦ Subtrahend – a number to be subtracted from a minuend ◦ Subtraction of whole numbers within 1,000 ◦ Differences of two- or three-digit whole numbers ◦ With or without regrouping • Strategies based on place value and properties of operations in mathematical and real-world problem situations ◦ With or without concrete models ◦ With or without pictorial models or open number lines ◦ One-step and multi-step problems • Algorithms based on place value in mathematical and real-world problem situations ◦ Partial sums • Addition of numbers in expanded form • Partial sums recorded vertically ◦ Traditional addition algorithm ◦ Partial differences • Subtraction of numbers in expanded form ◦ Traditional subtraction algorithm ◦ One-step and multi-step problems Note(s): • Grade Level(s): ◦ Grade 1 explained strategies used to solve addition and subtraction problems up to 20 using spoken words, objects, pictorial models, and number sentences. ◦ Grade 2 introduces the standard algorithm for addition and subtraction.

Kindergarten	Grade 1	Grade 2
		◦ Grade 2 introduces regrouping. ◦ Grade 2 will 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. ◦ Grade 3 will 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. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000 • TxCCRS: ◦ I. Numeric Reasoning ◦ VIII. Problem Solving and Reasoning ◦ IX. Communication and Representation ◦ X. Connections
	1.3D **Apply basic fact strategies to add and subtract within 20, including making 10 and decomposing a number leading to a 10.** Apply BASIC FACT STRATEGIES TO ADD WITHIN 20, INCLUDING MAKING 10 AND DECOMPOSING A	**2.4A** **Recall basic facts to add and subtract within 20 with automaticity.** Recall With Automaticity BASIC FACTS TO ADD WITHIN 20 Including, but not limited to:

Kindergarten	Grade 1	Grade 2

	NUMBER LEADING TO A 10
	
	Including, but not limited to:
	
	• Whole numbers
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
	• Addition
	  ◦ Sum – the total when two or more addends are joined
	  ◦ Addend – a number being added or joined together with another number(s)
	  ◦ Addition of whole numbers within 20
	• Solutions recorded with a number sentence
	  ◦ Number sentence – a mathematical statement composed of numbers, and/or an unknown(s), and/or an operator(s), and an equality or inequality symbol
	  ◦ Number sentences, or equations, with equal sign at beginning or end
	• Decompose numbers – to break a number into parts or smaller values
	• Compose numbers – to combine parts or smaller values to form a number
	• Basic fact strategies for addition
	  ◦ Making 10
	  • Composing two addends to form a sum of 10
	  ◦ Hidden tens
	  • Decomposing a number leading to a 10
	  ◦ Plus 9
	  • Adding 9 is equivalent to adding 10 and
		• Whole numbers
		  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
		  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
		• Automaticity – executing a basic fact with little or no conscious effort
		• Addition
		  ◦ Sum – the total when two or more addends are joined
		  ◦ Addend – a number being added or joined together with another number(s)
		  ◦ Addition of whole numbers within 20
		• Solutions recorded with a number sentence
		  ◦ Number sentence – a mathematical statement composed of numbers, and/or an unknown(s), and/or an operator(s), and an equality or inequality symbol
		  ◦ Equal sign at beginning or end
		• Decompose numbers – to break a number into parts or smaller values
		• Compose numbers – to combine parts or smaller values to form a number
		• Basic fact strategies for addition
		  ◦ Making 10
		  • Composing two addends to form a sum of 10
		  ◦ Hidden tens
		  • Decomposing a number leading to a 10
		  ◦ Plus 9
		  • Adding 9 is equivalent to adding 10 and subtracting 1.
		  ◦ Plus 10

Kindergarten	Grade 1	Grade 2

	subtracting 1.
	- Plus 10
	  - Add 1 ten in the tens place and add 0 in the ones place.
	- Doubles
	  - Adding two of the same addend
	- Double plus/minus 1
	  - Consecutive addends
	  - Double the smaller addend and add 1, or double the larger addend and subtract 1.
	- Hidden doubles
	  - Decompose an addend to form a doubles fact.
	- In-betweens
	  - Addends that have exactly one number between them consecutively.
	  - Double the number between the addends.
	- Fact families – related number sentences using the same set of numbers
	  - Recognition of addition and subtraction as inverse operations
	- Commutative property
	  - Sum does not change when the order of the addends are switched.
	- Plus 0 (additive identity)
	  - Adding zero to a number does not affect the total.
	- Plus 1
	  - Adding 1 related to sequential counting
	- Counting on
	  - Begin with one addend and count on the amount of the other addend.
	
	Apply
	
	BASIC FACT STRATEGIES TO SUBTRACT WITHIN 20, INCLUDING MAKING 10 AND DECOMPOSING
		- Add 1 ten in the tens place and add 0 in the ones place.
		- Doubles
		  - Adding doubles always results in an even sum, regardless of whether the addends are even or odd.
		- Double plus/minus 1
		  - Consecutive addends
		  - Double the smaller addend and add 1, or double the larger addend and subtract 1.
		  - Adding doubles plus/minus 1 always results in an odd sum.
		- Hidden doubles
		  - Decompose an addend to form a doubles fact.
		- In-betweens
		  - Addends have exactly one number between them consecutively.
		  - Double the number between the addends.
		- Fact families – related number sentences using the same set of numbers
		  - Recognition of addition and subtraction as inverse operations
		- Commutative property
		  - Sum does not change when the order of the addends are switched.
		- Plus 0 (additive identity)
		  - Adding zero to a number does not affect the total.
		- Plus 1
		  - Adding 1 related to sequential counting
		- Counting on
		  - Begin with one addend and count on the amount of the other addend.
		
		Recall With Automaticity

Kindergarten	Grade 1	Grade 2

	A NUMBER LEADING TO A 10
	
	Including, but not limited to:
	
	• Whole numbers
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
	• Subtraction
	  ◦ Difference – the remaining amount after the subtrahend has been subtracted from the minuend
	  ◦ Minuend – a number from which another number will be subtracted
	  ◦ Subtrahend – a number to be subtracted from a minuend
	  ◦ Subtraction of whole numbers within 20
	• Solutions recorded with a number sentence
	  ◦ Number sentence – a mathematical statement composed of numbers, and/or an unknown(s), and/or an operator(s), and an equality or inequality symbol
	  ◦ Number sentences, or equations, with equal sign at beginning or end
	• Decompose numbers – to break a number into parts or smaller values
	• Basic fact strategies for subtraction
	  ◦ Counting back
	  • Begin with the minuend and count back the amount of the subtrahend.
	  ◦ Counting up
	  • Begin with the subtrahend and count up
		BASIC FACTS TO SUBTRACT WITHIN 20
		
		Including, but not limited to:
		
		• Whole numbers
		  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
		  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
		• Automaticity – executing a basic fact with little or no conscious effort
		• Subtraction
		  ◦ Difference – the remaining amount after the subtrahend has been subtracted from the minuend
		  ◦ Minuend – a number from which another number will be subtracted
		  ◦ Subtrahend – a number to be subtracted from a minuend
		  ◦ Subtraction of whole numbers within 20
		• Solutions recorded with a number sentence
		  ◦ Number sentence – a mathematical statement composed of numbers, and/or an unknown(s), and/or an operator(s), and an equality or inequality symbol
		  ◦ Equal sign at beginning or end
		• Decompose numbers – to break a number into parts or smaller values
		• Basic fact subtraction strategies leading to automaticity
		  ◦ Counting back
		  • Begin with the minuend and count back the amount of the subtrahend.

Kindergarten	Grade 1	Grade 2

	to the minuend.
	- Fact families – related number sentences using the same set of numbers
	  - Recognition of addition and subtraction as inverse operations
	- Minus 0 (additive identity)
	  - Subtracting 0 from a number does not affect the total.
	- Minus 1
	  - Subtracting 1 related to sequentially counting backward once
	- Minus 2
	  - Subtracting 2 related to sequentially counting backward twice
	- Minus 9
	  - Subtracting 9 is equivalent to subtracting 10 and adding 1.
	- Decompose the subtrahend
	  - Decompose the subtrahend to form a known fact.
	- Decompose the minuend
	  - Decompose the minuend to form a known fact.
	
	Note(s):
	
	- Grade Level(s):
	  - Grade 1 introduces applying basic fact strategies to add and subtract within 20.
	  - Grade 2 will recall basic facts to add and subtract within 20 with automaticity.
	  - Various mathematical process standards will be applied to this student expectation as appropriate.
	- TxRCFP:
	  - Solving problems involving addition and subtraction
		- Counting up
		  - Begin with the subtrahend and count up to the minuend.
		- Fact families – related number sentences using the same set of numbers
		  - Recognition of addition and subtraction as inverse operations
		  - Inverse doubles
		  - The minuend will be even, and the subtrahend and difference will either both be even or both be odd.
		  - Inverse double plus/minus 1
		  - The minuend will be odd, and if the subtrahend is even, then the difference will be odd.
		  - The minuend will be odd, and if the subtrahend is odd, then the difference will be even.
		- Minus 0 (additive identity)
		  - Subtracting 0 from a number does not affect the total.
		- Minus 1
		  - Subtracting 1 related to sequentially counting backward once
		- Minus 2
		  - Subtracting 2 related to sequentially counting backward twice
		- Minus 9
		  - Subtracting 9 is equivalent to subtracting 10 and adding 1.
		- Decompose the subtrahend
		  - Decompose the subtrahend to form a known fact.
		- Decompose the minuend
		  - Decompose the minuend to form a known fact.

Kindergarten	Grade 1	Grade 2

	• TxCCRS:
	  ◦ I. Numeric Reasoning
	  ◦ IX. Communication and Representation
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 1 applied basic fact strategies to add and subtract within 20, including making 10 and decomposing a number leading to a 10.
		  ◦ Grade 2 is accountable for recalling addition and subtraction facts within 20 with automaticity.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000
		• TxCCRS:
		  ◦ I. Numeric Reasoning
		  ◦ IX. Communication and Representation

	1.3F **Generate and solve problem situations when given a number sentence involving addition or subtraction of numbers within 20.** Generate, Solve PROBLEM SITUATIONS WHEN GIVEN A NUMBER SENTENCE INVOLVING ADDITION OR SUBTRACTION OF NUMBERS WITHIN 20 Including, but not limited to: • Whole numbers ◦ Counting (natural) numbers – the set of	**2.4D** **Generate and solve problem situations for a given mathematical number sentence involving addition and subtraction of whole numbers within 1,000.** Generate, Solve PROBLEM SITUATIONS FOR A GIVEN MATHEMATICAL NUMBER SENTENCE INVOLVING ADDITION AND SUBTRACTION OF WHOLE NUMBERS WITHIN 1,000 Including, but not limited to: • Whole numbers

Kindergarten	Grade 1	Grade 2
	positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*} ○ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*} • Addition ○ Sum – the total when two or more addends are joined ○ Addend – a number being added or joined together with another number(s) ○ Addition of whole numbers within 20 • Subtraction ○ Difference – the remaining amount after the subtrahend has been subtracted from the minuend ○ Minuend – a number from which another number will be subtracted ○ Subtrahend – a number to be subtracted from a minuend ○ Subtraction of whole numbers within 20 • Number sentence – a mathematical statement composed of numbers, and/or an unknown(s), and/or an operator(s), and an equality or inequality symbol ○ Number sentences, or equations, with an equal sign at the beginning or end ○ Unknown in any position • Generate and solve mathematical and real-world problem situations when given an addition number sentence. ○ Appropriate mathematical language ○ Connection between information in the problem and problem type • Addition situations • Part-part-whole situations	○ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*} ○ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*} • Addition ○ Sum – the total when two or more addends are joined ○ Addend – a number being added or joined together with another number(s) ○ Addition of whole numbers within 1,000 ○ Sums of up to four two-digit whole numbers ○ Sums of two three-digit whole numbers ○ With or without regrouping • Subtraction ○ Difference – the remaining amount after the subtrahend has been subtracted from the minuend ○ Minuend – a number from which another number will be subtracted ○ Subtrahend – a number to be subtracted from a minuend ○ Subtraction of whole numbers within 1,000 ○ Differences of two- or three-digit whole numbers ○ With or without regrouping • Number sentence – a mathematical statement composed of numbers, and/or an unknown(s), and/or an operator(s), and an equality or inequality symbol ○ Number sentences, or equations, with an equal sign at the beginning or end ○ Unknown in any position • Generate and solve mathematical and real-

Kindergarten	Grade 1	Grade 2
	• Comparison situations • Start unknown situations • Change unknown situations • Result unknown situations • Generate and solve mathematical and real-world problem situations when given a subtraction number sentence. ○ Appropriate mathematical language ○ Connection between information in the problem and problem type • Subtraction situations • Part-part-whole situations • Comparison situations • Start unknown situations • Change unknown situations • Result unknown situations Note(s): • Grade Level(s): ○ Grade 1 introduces generating and solving problem situations when given a number sentence involving addition and subtraction of whole numbers within 20. ○ Grade 2 will generate and solve problem situations for a given mathematical number sentence involving addition and subtraction of whole numbers within 1,000. ○ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ○ Solving problems involving addition and subtraction • TxCCRS: ○ I. Numeric Reasoning ○ II.D. Algebraic Reasoning –	world problem situations when given an addition number sentence. ○ One-step problems ○ Appropriate mathematical language ○ Connection between information in the problem and problem type • Addition situations • Part-part-whole situations • Comparison situations • Start unknown situations • Change unknown situations • Result unknown situations • Generate and solve problem mathematical and real-world situations when given a subtraction number sentence ○ One-step problems ○ Appropriate mathematical language ○ Connection between information in the problem and problem type • Subtraction situations • Part-part-whole situations • Comparison situations • Start unknown situations • Change unknown situations • Result unknown situations • Generate and solve problem mathematical and real-world situations when given a multi-operation number sentence ○ Multi-step problems ○ Appropriate mathematical language Note(s): • Grade Level(s): • Grade 1 generated and solved problem situations when given a number sentence involving addition or subtraction of numbers

Kindergarten	Grade 1	Grade 2
	Representations ○ VIII. Problem Solving and Reasoning ○ IX. Communication and Representation ○ X. Connections	within 20. • Grade 2 will 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. • Grade 3 will 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. • Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ○ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000 • TxCCRS: ○ I. Numeric Reasoning ○ VIII. Problem Solving and Reasoning ○ IX. Communication and Representation ○ X. Connections

Kindergarten	Grade 1	Grade 2
Representing and Determining Values of Coins and Bills		
K.4 ***Number and operations. The student applies mathematical process standards to identify coins in order to recognize the need for monetary transactions. The student is expected to:***	***1.4*** ***Number and operations. The student applies mathematical process standards to identify coins, their values, and the relationships among them in order to recognize the need for monetary transactions. The student is expected to:***	***2.5*** ***Number and operations. The student applies mathematical process standards to determine the value of coins in order to solve monetary transactions. The student is expected to:***

K.4A
 	
Identify U.S. coins by name, including pennies, nickels, dimes, and quarters.
 	
Identify
 	
U.S. COINS BY NAME, INCLUDING PENNIES, NICKELS, DIMES, AND QUARTERS
 	
Including, but not limited to:
 	
• U.S. coins by name
  ◦ Penny
  ◦ Nickel
  ◦ Dime
  ◦ Quarter
• Attributes of pennies, nickels, dimes, and quarters
  ◦ Color
  • Copper: penny
  • Silver: nickel, dime, and quarter
  ◦ Size
  • Relative sizes
  • Largest to smallest: quarter, nickel, penny, dime
  • Smallest to largest: dime, penny,
	1.4A
	
	Identify U.S. coins, including pennies, nickels, dimes, and quarters, by value and describe the relationships among them.
	
	Identify
	
	U.S. COINS, INCLUDING PENNIES, NICKELS, DIMES, AND QUARTERS, BY VALUE
	
	Including, but not limited to:
	
	• U.S. coins by value
	  ◦ Penny: 1 cent
	  ◦ Nickel: 5 cents
	  ◦ Dime: 10 cents
	  ◦ Quarter: 25 cents
	• Non-proportional relationship between size and value of coin
	• Attributes of pennies, nickels, dimes, and quarters
	  ◦ Color
	  • Copper: penny
	  • Silver: nickel, dime, and quarter
	  ◦ Size
	  • Relative sizes	

Kindergarten	Grade 1	Grade 2

nickel, quarter
- Texture
  - Smooth edges: penny, nickel
  - Ridged edges: dime, quarter
- Informal references
  - Heads: front of coin
  - Tails: back of coin
- Traditional head designs
  - Presidents
  - Penny: Abraham Lincoln
  - Nickel: Thomas Jefferson
  - Dime: Franklin Delano Roosevelt
  - Quarter: George Washington
- Traditional tail designs
  - Symbols
  - Penny: Lincoln Memorial or union shield
  - Nickel: Monticello
  - Dime: Torch (liberty), olive branch (peace), oak branch (strength and independence)
  - Quarter: Presidential coat of arms (eagle with outstretched arms)
• Special designs
- State coins
- U.S. territories
- Commemorative issues
• Concrete and pictorial models
- Views of both sides of coins
 	
Note(s):
 	
• Grade Level(s):
- Kindergarten identifies U.S. coins by name.
- Grade 1 will identify U.S. coins, including pennies, nickels, dimes, and quarters, by
	• Largest to smallest: quarter, nickel, penny, dime
	  • Smallest to largest: dime, penny, nickel, quarter
	- Texture
	  • Smooth edges: penny, nickel
	  • Ridged edges: dime, quarter
	- Informal references
	  • Heads: front of coin
	  • Tails: back of coin
	- Traditional head designs
	  • Presidents
	  • Penny: Abraham Lincoln
	  • Nickel: Thomas Jefferson
	  • Dime: Franklin Delano Roosevelt
	  • Quarter: George Washington
	- Traditional tail designs
	  - Symbols
	  - Penny: Lincoln Memorial or union shield
	  - Nickel: Monticello
	  - Dime: Torch (liberty), Olive branch (peace), Oak branch (strength and independence)
	  - Quarter: Presidential coat of arms (eagle with outstretched arms)
	• Special designs
	  • State coins
	  • U.S. territories
	  • Commemorative issues
	• Concrete and pictorial models
	- Views of both sides of coins
	
	Describe
	
	THE RELATIONSHIPS AMONG U.S. COINS	

Kindergarten	Grade 1	Grade 2

value and describe the relationships among them.
  - Various mathematical process standards will be applied to this student expectation as appropriate.
- TxRCFP:
  - Grade Level Connections (reinforces previous learning and/or provides development for future learning)
- TxCCRS:
  - IX. Communication and Representation
  - X. Connections
	Including, but not limited to:
	- U.S. coins
	  - Penny
	  - Nickel
	  - Dime
	  - Quarter
	- Relationships by value
	  - Penny to nickel, dime, quarter
	    - 5 pennies = 1 nickel; 10 pennies = 1 dime; 25 pennies = 1 quarter
	    - 1 penny < 1 nickel; 1 penny < 1 dime; 1 penny < 1 quarter
	  - Nickel to penny, dime, quarter
	    - 1 nickel = 5 pennies; 2 nickels = 1 dime; 5 nickels = 1 quarter
	    - 1 nickel > 1 penny; 1 nickel < 1 dime; 1 nickel < 1 quarter
	  - Dime to penny, nickel, quarter
	    - 1 dime = 10 pennies; 1 dime = 2 nickels; 5 dimes = 2 quarters
	    - 1 dime > 1 penny; 1 dime > 1 nickel; 1 dime < 1 quarter
	  - Quarter to penny, nickel, dime
	    - 1 quarter = 25 pennies; 1 quarter = 5 nickels; 2 quarters = 5 dimes
	    - 1 quarter > 1 penny; 1 quarter > 1 nickel; 1 quarter > 1 dime
	- Exchange of coins to other denominations
	  - Based on relationships between values
	- Relationships between attributes
	  - Historically significant people on heads of all coins
	  - Non-proportional relationship between size and value of coin	

Kindergarten	Grade 1	Grade 2

	Note(s):
	• Grade Level(s):
	  ○ Kindergarten identified U.S. coins by name, including pennies, nickels, dimes, and quarters.
	  ○ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ○ Developing an understanding of place value
	• TxCCRS:
	  ○ IX. Communication and Representation
	  ○ X. Connections	

	1.4B
	
	Write a number with the cent symbol to describe the value of a coin.
	
	Write
	
	A NUMBER WITH THE CENT SYMBOL TO DESCRIBE THE VALUE OF A COIN
	
	Including, but not limited to:
	
	• Cent symbol (¢)
	  ○ Cent symbol written to the right of the numerical value
	  ○ Cent label read and written after numerical value
	• Value of a coin named with numbers and symbols
	  ○ Penny: 1¢
	  ○ Nickel: 5¢
	  ○ Dime: 10¢
		2.5B
		
		Use the cent symbol, dollar sign, and the decimal point to name the value of a collection of coins.
		
		Use
		
		THE CENT SYMBOL, DOLLAR SIGN, AND THE DECIMAL POINT TO NAME THE VALUE OF A COLLECTION OF COINS
		
		Including, but not limited to:
		
		• Value of a collection of coins named with numbers and symbols
		  ○ Cent symbol not used in conjunction with dollar symbol and decimal
		  ○ Cent symbol (¢)
		  • Cent symbol written to the right of the numerical value
		  • Cent label read and written after numerical value

Kindergarten	Grade 1	Grade 2
	◦ Quarter: 25¢ • Value of a coin named with numbers and words ◦ Penny: 1 cent ◦ Nickel: 5 cents ◦ Dime: 10 cents ◦ Quarter: 25 cents Note(s): • Grade Level(s): ◦ Grade 1 introduces the cent symbol to describe the value of a coin. ◦ Grade 2 will use the cent symbol, the dollar sign, and decimal point to name the value of a collection of coins. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing an understanding of place value • TxCCRS: ◦ IX. Communication and Representation ◦ X. Connections	• Values equal to or greater than 100 written with cent symbol not customary, but acceptable ◦ Dollar symbol ($) and decimal • Dollar symbol written to the left of the dollar amount • Decimal separates whole dollar amount from cent amount, or part of a dollar amount • Dollar label read after dollar amount • Decimal read as “and” • Zero written for the dollar amount, but not read, if value is less than one dollar ◦ Multiple representations of the same value Note(s): • Grade Level(s): ◦ Grade 1 wrote a number with the cent symbol to describe the value of a coin. ◦ Grade 2 introduces the dollar sign and decimal point to name the value of a collection of coins. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing proficiency in the use of place value within the base-10 numeration system • TxCCRS: ◦ IX. Communication and Representation ◦ X. Connections
	1.4C **Use relationships to count by twos, fives, and tens to**	**2.5A** **Determine the value of a collection of coins up to one**

Kindergarten	Grade 1	Grade 2

	determine the value of a collection of pennies, nickels, and/or dimes.
	
	Use
	
	RELATIONSHIPS TO COUNT BY TWOS, FIVES, AND TENS
	
	Including, but not limited to:
	
	• Whole numbers (0 – 120)
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, …, *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, …, *n*}
	• Skip counting – counting numbers in sequence forward or backward by a whole number other than 1
	  ◦ Counting sequence can begin at any number.
	• Relationships in skip counting by twos
	  ◦ When counting by twos, one number is skipped.
	  ◦ When beginning with 0, all numbers counted have a 0, 2, 4, 6, or 8 in the ones place.
	• Relationships when skip counting by fives
	  ◦ When counting by fives, 4 numbers are skipped.
	  ◦ When beginning with 0, all numbers counted alternate 0 or 5 in the ones place.
	• Relationships when skip counting by tens
	  ◦ When counting by tens, 9 numbers are skipped.
		dollar.
		
		Determine
		
		THE VALUE OF A COLLECTION OF COINS UP TO ONE DOLLAR
		
		Including, but not limited to:
		
		• Coins
		  ◦ Penny: 1¢
		  ◦ Nickel: 5¢
		  ◦ Dime: 10¢
		  ◦ Quarter: 25¢
		  ◦ Half-dollar: 50¢
		• Concrete and pictorial models
		  ◦ Traditional and newly released designs
		  ◦ Views of both sides of coins
		• Relationships by value
		  • Penny to nickel, dime, quarter, half-dollar
		  ◦ 5 pennies = 1 nickel; 10 pennies = 1 dime; 25 pennies = 1 quarter; 50 pennies = 1 half-dollar
		  ◦ 1 penny < 1 nickel; 1 penny < 1 dime; 1 penny < 1 quarter; 1 penny < 1 half-dollar
		  • Nickel to penny, dime, quarter, half-dollar
		  ◦ 1 nickel = 5 pennies; 2 nickels = 1 dime; 5 nickels = 1 quarter; 10 nickels = 1 half-dollar
		  ◦ 1 nickel > 1 penny; 1 nickel < 1 dime; 1 nickel < 1 quarter; 1 nickel < 1 half-dollar
		  • Dime to penny, nickel, quarter, half-dollar
		  ◦ 1 dime = 10 pennies; 1 dime = 2 nickels; 5 dimes = 2 quarters; 5 dimes = 1 half-dollar
		  ◦ 1 dime > 1 penny; 1 dime > 1 nickel; 1 dime < 1 quarter; 1 dime < 1 half-dollar

Kindergarten	Grade 1	Grade 2
	◦ When beginning with 0, all numbers counted have a 0 in the ones place. ◦ When beginning with any number, the digit in the ones place remains the same and the digit in the tens place increases by 1. ◦ When beginning with 0, all numbers counted by ten are also included in the count by twos and the count by fives. • Relationships represented using concrete or pictorial models ◦ Hundreds chart, color tiles, number line, real-life objects, etc. To Determine THE VALUE OF A COLLECTION OF PENNIES, NICKELS, AND/OR DIMES Including, but not limited to:	• Quarter to penny, nickel, dime, half-dollar ◦ 1 quarter = 25 pennies; 1 quarter = 5 nickels; 2 quarters = 5 dimes; 2 quarters = 1 half-dollar ◦ 1 quarter > 1 penny; 1 quarter > 1 nickel; 1 quarter > 1 dime; 1 quarter < 1 half-dollar • Half-dollar to penny, nickel, dime, quarter ◦ 1 half-dollar = 50 pennies; 1 half-dollar = 10 nickels; 1 half-dollar = 5 dimes; 1 half-dollar = 2 quarters ◦ 1 half-dollar > 1 penny; 1 half-dollar > 1 nickel; 1 half-dollar > 1 dime; 1 half-dollar > 1 quarter • Skip counting to determine the value of a collection of mixed coins up to one dollar ◦ Coins in like groups (e.g., half-dollars, quarters, dimes, nickels, pennies)

Kindergarten	Grade 1	Grade 2

	• Coins
	  ◦ Penny: 1¢
	  ◦ Nickel: 5¢
	  ◦ Dime: 10¢
	• Concrete and pictorial models
	  ◦ Traditional and newly released designs
	  ◦ Views of both sides of coins
	• Collection of like coins up to 120 cents
	• Collection of mixed coins up to 120 cents
	• Skip counting
	  ◦ Coins in like groups (e.g., dimes, nickels, pennies)
	  • By twos to determine the value of a collection of pennies
	  • 2¢, 4¢, 6¢, 8¢, …, 28¢, 30¢, 32¢, 34¢, etc.
	  • By fives to determine the value of a collection of nickels
	  • 5¢, 10¢, 15¢, 20¢, 25¢, 30¢, …, 95¢, 100¢, 105¢, 110¢, etc.
	  • By tens to determine the value of a collection of dimes
	  ◦ 10¢, 20¢, 30¢, 40¢, 50¢, …, 80¢, 90¢, 100¢, 110¢, 120¢
	• Compound counting to determine the value of a collection of mixed coins
	  ◦ Separate coins into like groups prior to counting (e.g., dimes, nickels, pennies).
	  ◦ Begin by counting the largest denomination of coins and then count on each denomination of coins in order from largest to smallest.
	  • Count dimes by tens, count on nickels by fives, count on pennies by twos or ones
	• Create a collection of coins for a given value.
	  ◦ Comparison of the values of two collections
		• By ones or twos to determine the value of a collection of pennies
		  ◦ 1¢, 2¢, 3¢, 4¢, …, 97¢, 98¢, 99¢, 100¢
		  ◦ 2¢, 4¢, 6¢, 8¢, …, 94¢, 96¢, 98¢, 100¢
		• By fives to determine the value of a collection of nickels
		  ◦ 5¢, 10¢, 15¢, 20¢, 25¢, 30¢, …, 95¢, 100¢
		• By tens to determine the value of a collection of dimes
		  ◦ 10¢, 20¢, 30¢, 40¢, 50¢, …, 80¢, 90¢, 100¢
		• By twenty-fives to determine the value of a collection of quarters
		  ◦ 25¢, 50¢, 75¢, $1.00
		• By fifties to determine the value of a collection of half-dollars
		  ◦ 50¢, $1.00
		• Compound counting to determine the value of a collection of mixed coins up to one dollar
		  ◦ Separate coins into like groups prior to counting (e.g., half-dollars, quarters, dimes, nickels, pennies).
		  ◦ Begin by counting the largest denomination of coins and then count on each denomination of coins in order from largest to smallest.
		  • Count half-dollars by fifties, count on quarters by twenty-fives, count on dimes by tens, count on nickels by fives, count on pennies by twos or ones.
		• Exchange of coins to other denominations based on relationships between values
		• Create a collection of coins for a given value.
		  ◦ Comparison of the values of two collections of coins

Kindergarten	Grade 1	Grade 2
	◦ Comparison of the values of two collections of coins • Number of coins may not be proportional to the value of the collection. ◦ Multiple combinations of the same value ◦ Minimal set • Least number of coins to equal a given value Note(s): • Grade Level(s): ◦ Grade 1 introduces using relationships to count by twos, fives, and tens to determine the value of a collection of pennies, nickels, and/or dimes. ◦ Grade 2 will determine the value of a collection of coins up to one dollar, including quarters and half-dollars. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing an understanding of place value • TxCCRS: ◦ IX. Communication and Representation ◦ X. Connections	• Number of coins may not be proportional to the value of the collection. ◦ Multiple combinations of the same value ◦ Minimal set • Least number of coins to equal a given value Note(s): • Grade Level(s): ◦ Grade 1 used relationships to count by twos, fives, and tens to determine the value of a collection of pennies, nickels, and/or dimes. ◦ Grade 3 will determine the value of a collection of coins and bills. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing proficiency in the use of place value within the base-10 numeration system • TxCCRS: ◦ IX. Communication and Representation ◦ X. Connections
		Multiplying Whole Numbers, Decimals, Fractions, and Rational Numbers
		2.6 ***Number and operations. The student applies mathematical process standards to connect repeated addition and subtraction to multiplication and division situations that involve equal***

Kindergarten	Grade 1	Grade 2
		groupings and shares. The student is expected to:

		2.6A
		
		Model, create, and describe contextual multiplication situations in which equivalent sets of concrete objects are joined.
		
		Model, Create, Describe
		
		CONTEXTUAL MULTIPLICATION SITUATIONS IN WHICH EQUIVALENT SETS OF CONCRETE OBJECTS ARE JOINED
		
		Including, but not limited to:
		
		• Recognition of combining equivalent sets of objects in contextual situations
		• Recognition of repeated addition of sets of objects in contextual situations
		• Model and describe contextual multiplication situations using concrete objects.
		  ◦ Organized to represent equal sized groups
		  ◦ Sets up to 10 equal groups of 10
		  ◦ Oral description
		  • Appropriate labels for number of groups and amount in each group
		  • Stated as: "___ equal groups of ___"
		  ◦ Written description
		  • Recorded as: ____ equal groups of ___
		  • Recorded as repeated addition
		• Create and describe contextual multiplication situations.
		  ◦ Combination of equally-sized groups
		  ◦ Sets up to 10 equal groups of 10
		  ◦ Oral description
		  • Appropriate labels for number of groups

Kindergarten	Grade 1	Grade 2
		and amount in each group • Stated as: "___ equal groups of ___" ◦ Written description • Recorded as: ____ equal groups of ___ • Recorded as repeated addition ◦ Connection between skip counting (by 2s, 3s, etc.) and counting equivalent sets of objects ◦ Comparisons of different equivalent groupings • Same number of groups with different amounts in each group • Different number of groups with same amount in each group • Different number of groups and/or different amount in each group, but same total number of objects Note(s): • Grade Level(s): ◦ Grade 2 introduces contextual multiplication situations. ◦ Grade 3 will determine the total number of objects when equally-sized groups of objects are combined or arranged in arrays up to 10 x 10. ◦ Grade 3 will introduce the multiplication symbol. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Grade Level Connections (reinforces previous learning and/or provides development for future learning) • TxCCRS:

Kindergarten	Grade 1	Grade 2
		◦ I. Numeric Reasoning ◦ IX. Communication and Representation ◦ X. Connections
		2.6 ***Number and operations. The student applies mathematical process standards to connect repeated addition and subtraction to multiplication and division situations that involve equal groupings and shares. The student is expected to:***
		Dividing Whole Numbers, Decimals, Fractions, and Rational Numbers
		2.6 ***Number and operations. The student applies mathematical process standards to connect repeated addition and subtraction to multiplication and division situations that involve equal groupings and shares. The student is expected to:***
		2.6B **Model, create, and describe contextual division**

Kindergarten	Grade 1	Grade 2

		situations in which a set of concrete objects is separated into equivalent sets.
		
		Model, Create, Describe
		
		CONTEXTUAL DIVISION SITUATIONS IN WHICH A SET OF CONCRETE OBJECTS IS SEPARATED INTO EQUIVALENT SETS
		
		Including, but not limited to:
		
		• Recognition of separating or sharing a set of objects into equivalent sets in contextual situations
		  ◦ Partitive division
		  • Total amount known
		  • Number of groups known
		  • Size or measure of each group unknown
		  ◦ Quotative division (also known as Measurement division)
		  • Total amount known
		  • Size or measure of each group known
		  • Number of groups unknown
		• Recognition of repeated subtraction of sets of objects in contextual situations
		• Model and describe contextual division situations using concrete objects.
		  ◦ Organized to represent equal sized groups
		  ◦ Sets up to 10 equal groups of 10
		  ◦ Oral description
		  • Appropriate labels for number of groups and amount in each group
		  • Stated as: "___ separated into ___ equal groups equals groups of ___," or "___ separated into groups of ___ equals ___ equal groups"
		  ◦ Written description

Kindergarten	Grade 1	Grade 2
		• Recorded as: ___ separated into ____ equal groups of ___, or ___ separated into groups of ___ equals ___ equal groups • Recorded as repeated subtraction • Create and describe contextual division situations. ◦ Separation into equally-sized groups ◦ Sets of up to 10 equal groups of 10 ◦ Oral description • Appropriate labels for number of groups and amount in each group • Stated as: "___ separated into ___ equal groups equals groups of ___," or "___ separated into groups of ___ equals ___ equal groups" ◦ Written description • Recorded as: ___ separated into ____ equal groups of ___, or ___ separated into groups of ___ equals ___ equal groups • Recorded as repeated subtraction Note(s): • Grade Level(s): ◦ Grade 2 introduces contextual division situations. ◦ Grade 3 will determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally. ◦ Grade 3 will introduce the division symbol. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP:

Kindergarten	Grade 1	Grade 2
		◦ Grade Level Connections (reinforces previous learning and/or provides development for future learning) • TxCCRS: ◦ I. Numeric Reasoning ◦ IX. Communication and Representation ◦ X. Connections
		2.6 ***Number and operations. The student applies mathematical process standards to connect repeated addition and subtraction to multiplication and division situations that involve equal groupings and shares. The student is expected to:***
Connecting Counting and Reciting		

Kindergarten	Grade 1	Grade 2
K.5 ***Algebraic reasoning. The student applies mathematical process standards to identify the pattern in the number word list. The student is expected to:***	***1.5*** ***Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:***	

K.5A
 	
Recite numbers up to at least 100 by ones and tens beginning with any given number.
 	
Recite
 	
NUMBERS UP TO AT LEAST 100 BY ONES AND TENS BEGINNING WITH ANY GIVEN NUMBER
 	
Including, but not limited to:
 	
• Counting numbers (1 – 100+)
  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
• Number word sequence has a correct order
• Recite – to verbalize from memory
  ◦ Development of automaticity
• Relationship to counting
  ◦ Cardinal number – a number that names the quantity of objects in a set
  ◦ Hierarchical inclusion – concept of nested numbers, meaning each prior number in the counting sequence is included in the set as the set increases (e.g., 18 is 17 increased by 1; 18 decreased by 1 is 17; etc.)
• Count forward up to at least 100
  ◦ Orally by ones beginning with 1
	1.5A
	
	Recite numbers forward and backward from any given number between 1 and 120.
	
	Recite
	
	NUMBERS FORWARD AND BACKWARD FROM ANY GIVEN NUMBER BETWEEN 1 AND 120
	
	Including, but not limited to:
	
	• Counting numbers (1 – 120)
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
	• Number word sequence has a correct order.
	• Recite – to verbalize from memory
	  ◦ Development of automaticity
	• Relationship to counting
	  ◦ Cardinal number – a number that names the quantity of objects in a set
	  ◦ Hierarchical inclusion – concept of nested numbers, meaning each prior number in the counting sequence is included in the set as the set increases (e.g., 58 is 57 increased by 1; 58 decreased by 1 is 57; etc.)
	• Recite numbers forward from any given number between 1 and 120	

Kindergarten	Grade 1	Grade 2
◦ Orally by ones beginning with any given number ◦ Orally by tens beginning with 10 ◦ Orally by tens beginning with any given number between 1 and 100 • Beginning number is a multiple of 10. Note(s): • Grade Level(s): ◦ Kindergarten introduces reciting numbers by ten. ◦ Grade 1 will recite numbers forward and backward from any given number between 1 and 120. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing an understanding of whole numbers • TxCCRS: • IX. Communication and Representation	◦ Orally by ones beginning with 1 ◦ Orally by ones beginning with any given number ◦ Orally by tens beginning with 10 ◦ Orally by tens beginning with any given number • Recite numbers backward from any given number between 1 and 120 ◦ Orally by ones beginning with 120 ◦ Orally by ones beginning with any given number between 1 and 120 ◦ Orally by tens beginning with 120 ◦ Orally by tens beginning with any given number between 1 and 120 Note(s): • Grade Level(s): ◦ Kindergarten recited numbers up to at least 100 by ones and tens beginning with any given number. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing an understanding of place value • TxCCRS: ◦ I. Numeric Reasoning ◦ IX. Communication and Representation	
	Connecting Counting and Divisibility	
	1.5 ***Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of***	***2.7*** ***Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of***

Kindergarten	Grade 1	Grade 2
	numbers and operations in order to describe relationships. The student is expected to:	***numbers and operations in order to describe relationships. The student is expected to:***

	1.5B
	
	Skip count by twos, fives, and tens to determine the total number of objects up to 120 in a set.
	
	Skip Count
	
	BY TWOS, FIVES, AND TENS TO DETERMINE THE TOTAL NUMBER OF OBJECTS UP TO 120 IN A SET
	
	Including, but not limited to:
	
	• Whole numbers (0 – 120)
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
	• Skip counting – counting numbers in sequence forward or backward by a whole number other than 1
	  ◦ Counting sequence can begin at any number.
	• Determine the total number of objects in a set.
	  ◦ Sets up to 120
	  ◦ Skip counting by twos, fives, and tens
	  • More efficient than counting by ones
	  ◦ Counting the same set of objects using different skip count increments results in the same total.
		2.7A
		
		Determine whether a number up to 40 is even or odd using pairings of objects to represent the number.
		
		Determine
		
		WHETHER A NUMBER UP TO 40 IS EVEN OR ODD USING PAIRINGS OF OBJECTS TO REPRESENT THE NUMBER
		
		Including, but not limited to:
		
		• Whole numbers (0 – 40)
		  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
		  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
		• Concrete objects organized in pairs to represent a number
		• Even number – a number represented by objects that when paired have zero left over
		  ◦ If the number of objects are paired with zero left over, the number represented by the objects is even.
		  ◦ Zero is not considered odd or even.
		• Odd number – a number represented by objects that when paired have one left over
		  ◦ If the number of objects are paired with one left over, the number represented by the objects is odd.

Kindergarten	Grade 1	Grade 2

	• Relationships in skip counting by twos
	  ◦ When counting by twos, one number is skipped.
	  ◦ When beginning with 0, all numbers counted have a 0, 2, 4, 6, or 8 in the ones place.
	• Relationships when skip counting by fives
	  ◦ When counting by fives, 4 numbers are skipped.
	  ◦ When beginning with 0, all numbers counted alternate 0 or 5 in the ones place.
	• Relationships when skip counting by tens
	  ◦ When counting by tens, 9 numbers are skipped.
	  ◦ When beginning with 0, all numbers counted have a 0 in the ones place.
	  ◦ When beginning with any number, the digit in the ones place remains the same and the digit in the tens place increases by 1.
	  ◦ When beginning with 0, all numbers counted by ten are also included in the count by twos and the count by fives.
	• Relationships represented using concrete or pictorial models
	  ◦ Hundreds chart, color tiles, number line, real-life objects, etc.
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Grade 1 introduces skip counting by twos, fives, and tens to determine the total number of objects up to 120 in a set.
	  ◦ Grade 2 will determine whether a number up to 40 is even or odd using pairings of objects to represent the number.
	  ◦ Various mathematical process standards
		• Relationships in addition and subtraction
		  ◦ Relationship between doubles facts and even numbers
		  • Adding doubles always results in an even sum, regardless of whether the addends are even or odd
		  • Inverse doubles
		  ◦ The minuend will be even, and the subtrahend and difference will either both be even or both be odd.
		  ◦ Relationship between doubles plus/minus 1 facts and odd numbers
		  • Adding doubles plus/minus 1 always results in an odd sum.
		  • Inverse doubles plus/minus 1
		  ◦ The minuend will be odd, and if the subtrahend is even, then the difference will be odd.
		  ◦ The minuend will be odd, and if the subtrahend is odd, then the difference will be even.
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 1 skip counted by twos, fives, and tens to determine the total number of objects up to 120 in a set.
		  ◦ Grade 2 introduces determining whether a number up to 40 is even or odd using pairings of objects to represent the number.
		  ◦ Grade 3 will determine if a number is even or odd using divisibility rules.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:

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	will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Developing an understanding of place value
	  ◦ Solving problems involving addition and subtraction
	• TxCCRS:
	  ◦ I. Numeric Reasoning
	  ◦ IX. Communication and Representation
		◦ Grade Level Connections (reinforces previous learning and/or provides development for future learning)
		• TxCCRS:
		• IX. Communication and Representation

	Connecting Counting and Place Value	
	1.5 ***Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:***	***2.7*** ***Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:***

	1.5C
	
	Use relationships to determine the number that is 10 more and 10 less than a given number up to 120.
	
	Use
	
	RELATIONSHIPS TO DETERMINE THE NUMBER THAT IS 10 MORE AND 10 LESS THAN A GIVEN NUMBER UP TO 120
	
	Including, but not limited to:
	
	• Whole numbers (1 – 120)
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time
		2.7B
		
		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.
		
		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
		
		Including, but not limited to:
		
		• Whole numbers (0 – 1,200)
		  ◦ Counting (natural) numbers – the set of

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	{1, 2, 3, …, *n*}
	  - Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, …, *n*}
	- Place value – the value of a digit as determined by its location in a number such as ones, tens, hundreds, etc.
	  - Hundreds place
	  - Tens place
	  - Ones place
	- Comparative language
	  - Greater than, more than
	  - Less than, fewer than
	- Relationships based on place value
	  - 10 more or 10 less
	    - Adding 1 in the tens place will generate a number that is 10 more than the original number.
	    - Subtracting 1 in the tens place will generate a number that is 10 less than the original number.
	- Relationships based on patterns in concrete or pictorial models
	  - Hundreds chart
	    - Moving one row down will generate a number that is 10 more than the original number.
	    - Moving one row up will generate a number that is 10 less than the original number.
	  - Base-10 blocks
	    - Adding longs will increase a number by increments of 10.
	    - Removing longs will decrease a number by increments of 10.
	
	Note(s):
		positive numbers that begins at one and increases by increments of one each time {1, 2, 3, …, *n*}
		  - Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, …, *n*}
		- Place value – the value of a digit as determined by its location in a number such as ones, tens, hundreds, one thousands, etc.
		  - One thousands place
		  - Hundreds place
		  - Tens place
		  - Ones place
		- Comparative language
		  - Greater than, more than
		  - Less than, fewer than
		- Relationships based on place value
		  - 10 more or 10 less
		    - Adding 1 in the tens place will generate a number that is 10 more than the original number.
		    - Subtracting 1 in the tens place will generate a number that is 10 less than the original number.
		  - 100 more or 100 less
		    - Adding 1 in the hundreds place will generate a number that is 100 more than the original number.
		    - Subtracting 1 in the hundreds place will generate a number that is 100 less than the original number.
		
		Note(s):
		
		- Grade Level(s):
		  - Grade 1 used relationships to determine the number that is 10 more and 10 less than a

Kindergarten	Grade 1	Grade 2
	• Grade Level(s): ◦ Grade 1 introduces using relationships to determine the number that is 10 more and 10 less than a given number up to 120. ◦ Grade 2 will 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. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing an understanding of place value ◦ Solving problems involving addition and subtraction • TxCCRS: ◦ I. Numeric Reasoning ◦ IX. Communication and Representation	given number up to 120. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing proficiency in the use of place value within the base-10 numeration system ◦ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000 • TxCCRS: ◦ I. Numeric Reasoning ◦ IX. Communication and Representation ◦ X. Connections
	Representing Problem Situations with the Equal Sign	
	1.5 ***Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:***	***2.7*** ***Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:***
	1.5D **Represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and number sentences.** Represent	**2.7C** **Represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem.** Represent, Solve

Kindergarten	Grade 1	Grade 2

	WORD PROBLEMS INVOLVING ADDITION OF WHOLE NUMBERS UP TO 20 USING CONCRETE AND PICTORIAL MODELS AND NUMBER SENTENCES
	
	Including, but not limited to:
	
	• Whole numbers
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
	• Addition
	  ◦ Sum – the total when two or more addends are joined
	  ◦ Addend – a number being added or joined together with another number(s)
	  ◦ Addition of whole numbers within 20
	• Represent mathematical and real world problem situations
	  ◦ Concrete models
	  • Objects represent the quantities described in the problem situation.
	  • Base-10 blocks, linking cubes, counters, etc.
	  ◦ Pictorial models
	  • Pictures drawn represent the quantities described in the problem situation.
	  • Base-10 pictorials, number lines, strip diagrams, etc.
	  ◦ Solutions recorded with a number sentence
	  • Number sentence – a mathematical statement composed of numbers, and/or an unknown(s), and/or an operator(s), and
		ADDITION AND SUBTRACTION WORD PROBLEMS WHERE UNKNOWNS MAY BE ANY ONE OF THE TERMS IN THE PROBLEM
		
		Including, but not limited to:
		
		• Whole numbers
		  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
		  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
		• Addition
		  ◦ Sum – the total when two or more addends are joined
		  ◦ Addend – a number being added or joined together with another number(s)
		  ◦ Addition of whole numbers within 1,000
		  ◦ With or without regrouping
		• Subtraction
		  ◦ Difference – the remaining amount after the subtrahend has been subtracted from the minuend
		  ◦ Minuend – a number from which another number will be subtracted
		  ◦ Subtrahend – a number to be subtracted from a minuend
		  ◦ Subtraction of whole numbers within 1,000
		  ◦ With or without regrouping
		• Term – a number and/or an unknown in an expression separated by an operation symbol(s)
		• Expression – a mathematical phrase, with no equal sign, that may contain a number(s), an unknown(s), and/or an operator(s)

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	an equality or inequality symbol • Numbers represent the quantities described in the problem situation. • Number sentences, or equations, with an equal sign at the beginning or end ○ Oral and written descriptions • Explanation of relationship between objects, pictorials, and numbers and the information in the problem situation Represent WORD PROBLEMS INVOLVING SUBTRACTION OF WHOLE NUMBERS UP TO 20 USING CONCRETE AND PICTORIAL MODELS AND NUMBER SENTENCES Including, but not limited to:	• Number sentence – a mathematical statement composed of numbers, and/or an unknown(s), and/or an operator(s), and an equality or inequality symbol ○ Number sentences, or equations, with an equal sign at the beginning or end • Represent mathematical and real-world problem situations ○ Concrete models • Objects represent the quantities described in the problem situation. • Base-10 blocks, place value disks, etc. ○ Pictorial models • Pictures drawn represent the quantities described in the problem situation. • Base-10 pictorials, number lines, strip diagrams, etc.

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	• Whole numbers
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
	• Subtraction
	  ◦ Difference – the remaining amount after the subtrahend has been subtracted from the minuend
	  ◦ Minuend – a number from which another number will be subtracted
	  ◦ Subtrahend – a number to be subtracted from a minuend
	  ◦ Subtraction of whole numbers within 20
	• Represent mathematical and real-world problem situations
	  ◦ Concrete models
	  • Objects represent the quantities described in the problem situation.
	  • Base-10 blocks, linking cubes, counters, etc.
	  ◦ Pictorial models
	  • Pictures drawn represent the quantities described in the problem situation.
	  • Base-10 pictorials, number lines, strip diagrams, etc.
	  ◦ Solutions recorded with a number sentence
	  • Number sentence – a mathematical statement composed of numbers, and/or an unknown(s), and/or an operator(s), and an equality or inequality symbol
	  • Numbers represent the quantities described in the problem situation
		◦ Numbers
		  • Numbers represent the quantities described in the problem situation.
		  ◦ Oral and written descriptions
		  • Explanation of relationship between objects, pictorials, and numbers and the information in the problem situation
		• Solve mathematical and real-world problem situations with the result unknown.
		  ◦ One-step problems
		  ◦ Connection between information in the problem and problem type
		  • Addition result unknown
		  ◦ $a + b =$ __
		  • Part-part-whole whole unknown
		  ◦ $a + b =$ __
		  • Comparison larger quantity unknown
		  ◦ $a + b =$ __
		  • Subtraction result unknown
		  ◦ $a – b =$ __
		  • Part-part-whole part unknown
		  ◦ $a – b =$ __
		  • Comparison difference unknown
		  ◦ $a – b =$ __
		  • Comparison smaller part unknown
		  ◦ $a – b =$ __
		• Solve mathematical and real-world problem situations with the change unknown.
		  ◦ One-step problems
		  ◦ Connection between information in the problem and problem type
		  ◦ Connection between solution strategies for similar problem types
		  • Addition change unknown
		  ◦ $a +$ __ $= c$
		  • Can be solved as $c – a =$ __

Kindergarten	Grade 1	Grade 2
	described in the problem situation. • Number sentences, or equations, with an equal sign at the beginning or end ○ Oral and written descriptions • Explanation of relationship between objects, pictorials, and numbers and the information in the problem situation Note(s): • Grade Level(s): ○ Grade 1 introduces representing word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and number sentences. ○ Grade 2 will represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem. ○ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ○ Solving problems involving addition and subtraction • TxCCRS: ○ I. Numeric Reasoning ○ II.D. Algebraic Reasoning – Representations ○ VIII. Problem Solving and Reasoning ○ IX. Communication and Representation ○ X. Connections	• Part-part-whole part unknown ○ a + __ = c • Can be solved as $c - a$ = __ • Comparison difference unknown ○ a + __ = c • Can be solved as $c - a$ = __ • Subtraction change unknown ○ a – __ = c • Can be solved as $c - a$ = __ • Solve mathematical and real-world problem situations with the start unknown. ○ One-step problems ○ Connection between information in the problem and problem type ○ Connection between solution strategies for similar problem types • Addition start unknown ○ __ + b = c • Can be solved as $c - b$ = __ • Subtraction start unknown ○ __ – b = c • Can be solved as $c + b$ = __ • Solve mathematical and real-world problem situations with multiple operations. • Multi-step problem situations Note(s): • Grade Level(s): • Grade 1 determined the unknown whole number in an addition or subtraction equation when the unknown may be any one of the three or four terms in the equation. • Grade 3 will represent one and two-step problems involving addition and subtraction
	1.5E	

Kindergarten	Grade 1	Grade 2

	Understand that the equal sign represents a relationship where expressions on each side of the equal sign represent the same value(s).
	
	Understand
	
	THE EQUAL SIGN REPRESENTS A RELATIONSHIP WHERE EXPRESSIONS ON EACH SIDE OF THE EQUAL SIGN REPRESENT THE SAME VALUE(S)
	
	Including, but not limited to:
	
	• Term – a number and/or an unknown in an expression separated by an operation symbol(s)
	• Expression – a mathematical phrase, with no equal sign, that may contain a number(s), an unknown(s), and/or an operator(s)
	• Equal sign – a mathematical symbol representing equivalence
	• Equation – a mathematical statement composed of equivalent expressions separated by an equal sign
	• Multi-step solutions represented with one number sentence, or equation, per step
	  ◦ All expressions separated by equal signs must be equivalent.
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Grade 1 introduces an understanding that the equal sign represents a relationship where expressions on each side of the equal sign represent the same value(s).
	  ◦ Grade 2 will represent and solve addition and subtraction word problems where
		of whole numbers to 1,000 using pictorial models, number lines, and equations.
		  • Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000
		• TxCCRS:
		  ◦ I. Numeric Reasoning
		  ◦ II.D. Algebraic Reasoning – Representations
		  ◦ VIII. Problem Solving and Reasoning
		  ◦ IX. Communication and Representation
		  ◦ X. Connections

Kindergarten	Grade 1	Grade 2

	unknowns may be any one of the terms in the problem.
	  - Various mathematical process standards will be applied to this student expectation as appropriate.
	- TxRCFP:
	  - Solving problems involving addition and subtraction
	- TxCCRS:
	  - II.D. Algebraic Reasoning – Representations
	  - IX. Communication and Representation	

	Representing and Solving Problems with Equations and Inequalities	
	1.5 ***Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:***	***2.7*** ***Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:***
	1.5F **Determine the unknown whole number in an addition or subtraction equation when the unknown may be any one of the three or four terms in the equation.**	**2.7C** **Represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem.**

Kindergarten	Grade 1	Grade 2

	Determine
	
	THE UNKNOWN WHOLE NUMBER IN AN ADDITION OR SUBTRACTION EQUATION WHEN THE UNKNOWN MAY BE ANY ONE OF THE THREE OR FOUR TERMS IN THE EQUATION
	
	Including, but not limited to:
	
	• Whole numbers
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
	• Addition
	  ◦ Sum – the total when two or more addends are joined
	  ◦ Addend – a number being added or joined together with another number(s)
	  ◦ Addition of whole numbers within 20
	• Subtraction
	  ◦ Difference – the remaining amount after the subtrahend has been subtracted from the minuend
	  ◦ Minuend – a number from which another number will be subtracted
	  ◦ Subtrahend – a number to be subtracted from a minuend
	  ◦ Subtraction of whole numbers within 20
	• Term – a number and/or an unknown in an expression separated by an operation symbol(s)
	• Expression – a mathematical phrase, with no equal sign, that may contain a number(s), an
		Represent, Solve
		
		ADDITION AND SUBTRACTION WORD PROBLEMS WHERE UNKNOWNS MAY BE ANY ONE OF THE TERMS IN THE PROBLEM
		
		Including, but not limited to:
		
		• Whole numbers
		  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
		  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
		• Addition
		  ◦ Sum – the total when two or more addends are joined
		  ◦ Addend – a number being added or joined together with another number(s)
		  ◦ Addition of whole numbers within 1,000
		  ◦ With or without regrouping
		• Subtraction
		  ◦ Difference – the remaining amount after the subtrahend has been subtracted from the minuend
		  ◦ Minuend – a number from which another number will be subtracted
		  ◦ Subtrahend – a number to be subtracted from a minuend
		  ◦ Subtraction of whole numbers within 1,000
		  ◦ With or without regrouping
		• Term – a number and/or an unknown in an expression separated by an operation symbol(s)
		• Expression – a mathematical phrase, with no

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	unknown(s), and/or an operator(s)
	• Equal sign – a mathematical symbol representing equivalence
	• Equation – a mathematical statement composed of equivalent expressions separated by an equal sign
	• Unknown as any one of the three terms in the equation
	  ◦ $a + b =$ __
	  • Join the addends ($a + b$) to determine the missing sum (c).
	  ◦ $a +$ __ $= c$
	  • Count on from the addend (a) to the sum (c) to determine the missing addend (b).
	  • Subtract the addend (a) from the sum (c) to determine the missing addend (b).
	  ◦ __ $+ b = c$
	  • Count on from the addend (b) to the sum (c) to determine the missing addend (a).
	  • Subtract the addend (b) from the sum (c) to determine the missing addend (a).
	  ◦ $a – b =$ __
	  • Subtract the subtrahend (b) from the minuend (a) to determine the missing difference (c).
	  ◦ $a –$ __ $= c$
	  • Count up from the difference (c) to the minuend (a) to determine the missing subtrahend (b).
	  • Subtract the difference (c) from the minuend (a) to determine the missing subtrahend (b).
	  ◦ __ $– b = c$
	  • Count up or join the subtrahend (b) and the difference (c) to determine the missing minuend (a).
		equal sign, that may contain a number(s), an unknown(s), and/or an operator(s)
		• Number sentence – a mathematical statement composed of numbers, and/or an unknown(s), and/or an operator(s), and an equality or inequality symbol
		  ◦ Number sentences, or equations, with an equal sign at the beginning or end
		• Represent mathematical and real-world problem situations
		  ◦ Concrete models
		  • Objects represent the quantities described in the problem situation.
		  • Base-10 blocks, place value disks, etc.
		  ◦ Pictorial models
		  • Pictures drawn represent the quantities described in the problem situation.
		  • Base-10 pictorials, number lines, strip diagrams, etc.
		  ◦ Numbers
		  • Numbers represent the quantities described in the problem situation.
		  ◦ Oral and written descriptions
		  • Explanation of relationship between objects, pictorials, and numbers and the information in the problem situation
		• Solve mathematical and real-world problem situations with the result unknown.
		  ◦ One-step problems
		  ◦ Connection between information in the problem and problem type
		  • Addition result unknown
		  ◦ $a + b =$ __
		  • Part-part-whole whole unknown
		  ◦ $a + b =$ __
		  • Comparison larger quantity unknown

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	• Unknown as any one of the four terms in the equation ◦ $\_\_ + b = c + d$ • Add the addends ($c + d$), and then subtract the addend (b) to determine the missing addend (a). ◦ $a + \_\_ = c + d$ • Add the addends ($c + d$), and then subtract the addend (a) to determine the missing addend (b). ◦ $a + b = \_\_ + d$ • Add the addends ($a + b$), and then subtract the addend (d) to determine the missing addend (c). ◦ $a + b = c + \_\_$ • Add the addends ($a + b$), and then subtract the addend (c) to determine the missing addend (d). ◦ $\_\_ - b = c - d$ • Subtract to determine the difference of the minuend and subtrahend ($c - d$), and then add the subtrahend (b) to determine the missing minuend (a). ◦ $a - \_\_ = c - d$ • Subtract to determine the difference of the minuend and subtrahend ($c - d$), and then subtract this difference from the minuend (a) to determine the missing subtrahend (b). ◦ $a - b = \_\_ - d$ • Subtract to determine the difference of the minuend and subtrahend ($a - b$), and then add the subtrahend (d) to determine the missing minuend (c). ◦ $a - b = c - \_\_$ • Subtract to determine the difference of	◦ $a + b = \_\_$ • Subtraction result unknown ◦ $a - b = \_\_$ • Part-part-whole part unknown ◦ $a - b = \_\_$ • Comparison difference unknown ◦ $a - b = \_\_$ • Comparison smaller part unknown ◦ $a - b = \_\_$ • Solve mathematical and real-world problem situations with the change unknown. ◦ One-step problems ◦ Connection between information in the problem and problem type ◦ Connection between solution strategies for similar problem types • Addition change unknown ◦ $a + \_\_ = c$ • Can be solved as $c - a = \_\_$ • Part-part-whole part unknown ◦ $a + \_\_ = c$ • Can be solved as $c - a = \_\_$ • Comparison difference unknown ◦ $a + \_\_ = c$ • Can be solved as $c - a = \_\_$ • Subtraction change unknown ◦ $a - \_\_ = c$ • Can be solved as $c - a = \_\_$ • Solve mathematical and real-world problem situations with the start unknown. ◦ One-step problems ◦ Connection between information in the problem and problem type ◦ Connection between solution strategies for similar problem types • Addition start unknown

Kindergarten	Grade 1	Grade 2
	the minuend and subtrahend ($a - b$), and then subtract this difference from the minuend (c) to determine the missing subtrahend (d). ○ $a + b + c =$ __ • Join the first two addends ($a + b$), and then add the third addend (c) to determine the missing sum (d). • Join the second two addends ($b + c$), and then add the first addend (a) to determine the missing sum (d). ○ $a - b - c =$ __ • Subtract the first subtrahend (b) from the minuend (a), and then subtract the second subtrahend (c) from this difference to determine the missing difference (d). • Unknown as any one of the four terms in an equation with multiple operations ○ $a - b + c =$ __ • Subtract the second term (b) from the first term (a), and then add the third term (c) to this difference to determine the missing solution (d). ○ $a + b - c =$ __ • Add the first term (a) to the second term (b), and then subtract the third term (c) from this sum to determine the missing solution (d). ○ __ $+ b = c - d$ • Subtract the minuend and the subtrahend ($c - d$), and then subtract the addend (b) from this difference to determine the missing addend (a). ○ $a +$ __ $= c - d$ • Subtract the minuend and the subtrahend	○ __ $+ b = c$ • Can be solved as $c - b =$ __ • Subtraction start unknown ○ __ $- b = c$ • Can be solved as $c + b =$ __ • Solve mathematical and real-world problem situations with multiple operations. • Multi-step problem situations Note(s): • Grade Level(s): • Grade 1 determined the unknown whole number in an addition or subtraction equation when the unknown may be any one of the three or four terms in the equation. • Grade 3 will represent one and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations. • Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ○ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000 • TxCCRS: ○ I. Numeric Reasoning ○ II.D. Algebraic Reasoning – Representations ○ VIII. Problem Solving and Reasoning ○ IX. Communication and Representation ○ X. Connections

Kindergarten	Grade 1	Grade 2
	(*c* – *d*), and then subtract the addend (*a*) from this difference to determine the missing addend (*b*). ○ *a* + *b* = __ – *d* • Add the addends (*a* + *b*), and then add the subtrahend (*d*) to this sum to determine the missing minuend (*c*). ○ *a* + *b* = *c* – __ • Add the addends (*a* + *b*), and then subtract this sum from the minuend (*c*) to determine the missing subtrahend (*d*). Note(s): • Grade Level(s): ○ Grade 1 introduces determining the unknown whole number in an addition or subtraction equation when the unknown may be any one of the three or four terms in the equation. ○ Grade 2 will represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem. ○ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ○ Solving problems involving addition and subtraction • TxCCRS: ○ I. Numeric Reasoning ○ II.D. Algebraic Reasoning – Representations ○ VIII. Problem Solving and Reasoning ○ IX. Communication and Representation	

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	1.5G
	
	Apply properties of operations to add and subtract two or three numbers.
	
	Apply
	
	PROPERTIES OF OPERATIONS TO ADD TWO OR THREE NUMBERS
	
	Including, but not limited to:
	
	• Whole numbers
	  ◦ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, ..., *n*}
	  ◦ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}
	• Addition
	  ◦ Sum – a number being added or joined together with another number(s)
	  ◦ Addend – a number being added or joined together with another number(s)
	  ◦ Addition of whole numbers within 20
	• Commutative property of addition – if the order of the addends are changed, the sum will remain the same
	  ◦ Two addends
	  ◦ Three addends
	• Associative property of addition – if three or more addends are added, they can be grouped in any order, and the sum will remain the same
	  ◦ Two addends
	  • Hidden tens	

Kindergarten	Grade 1	Grade 2
	• Decompose an addend to form a tens fact. • Hidden doubles • Decompose an addend to form a doubles fact. ○ Three addends • Additive identity – the sum/difference is not affected when zero is added/subtracted to a number Apply PROPERTIES OF OPERATIONS TO SUBTRACT TWO NUMBERS Including, but not limited to: • Whole numbers ○ Counting (natural) numbers – the set of positive numbers that begins at one and increases by increments of one each time {1, 2, 3, …, *n*} ○ Whole numbers – the set of counting (natural) numbers and zero {0, 1, 2, 3, …, *n*} • Subtraction ○ Difference – the remaining amount after the subtrahend has been subtracted from the minuend ○ Minuend – a number from which another number will be subtracted ○ Subtrahend – a number to be subtracted from a minuend ○ Subtraction of whole numbers within 20 • Recognition of addition and subtraction as inverse operations ○ Fact families – related number sentences	

Kindergarten	Grade 1	Grade 2

	using the same set of numbers
	• Additive identity – the sum/difference is not affected when zero is added/subtracted to a number
	• Subtraction is not commutative even though addition is commutative.
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Grade 1 introduces applying properties of operations to add and subtract two or three numbers.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Solving problems involving addition and subtraction
	• TxCCRS:
	  ◦ I. Numeric Reasoning
	  ◦ IX. Communication and Representation	

Kindergarten	Grade 1	Grade 2

Kindergarten	Grade 1	Grade 2

Kindergarten	Grade 1	Grade 2
Defining Attributes of One-Dimensional, Two-Dimensional, and Three-Dimensional Figures		
K.6 ***Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:***	***1.6*** ***Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:***	***2.8*** ***Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:***

K.6A
 	
Identify two-dimensional shapes, including circles, triangles, rectangles, and squares as special rectangles.
 	
Identify
 	
TWO-DIMENSIONAL SHAPES, INCLUDING CIRCLES, TRIANGLES, RECTANGLES, AND SQUARES AS SPECIAL RECTANGLES
 	
Including, but not limited to:
 	
• Identify two-dimensional figures
  ◦ Two-dimensional figure – a flat figure
  ◦ Identity not changed by orientation
  ◦ Identity not changed by size
  ◦ Identity not changed by color
  ◦ Identity not changed by texture
• Circle
  ◦ A round, flat figure
  ◦ No straight outer edges (sides)
  ◦ No corners (vertices)
• Triangle
  ◦ 3 straight outer edges (sides)
  ◦ 3 corners (vertices)
  ◦ Regular triangle – a triangle with outer edge
	1.6C
	
	Create two-dimensional figures, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons.
	
	Create
	
	TWO-DIMENSIONAL FIGURES, INCLUDING CIRCLES, TRIANGLES, RECTANGLES, AND SQUARES, AS SPECIAL RECTANGLES, RHOMBUSES, AND HEXAGONS
	
	Including, but not limited to:
	
	• Variety of materials and drawings
	  ◦ Computer programs
	  ◦ Art materials
	• Two-dimensional figure – a flat figure
	• Spatial visualization – creation and manipulation of mental representations of shapes
	• Attributes of two-dimensional figures
	  ◦ Side – a straight outer boundary between two vertices (line segment) of a two-dimensional figure
	  • Number of sides
	  • Length of sides
		2.8A
		
		Create two-dimensional shapes based on given attributes, including number of sides and vertices.
		
		Create
		
		TWO-DIMENSIONAL SHAPES BASED ON GIVEN ATTRIBUTES, INCLUDING NUMBER OF SIDES AND VERTICES
		
		Including, but not limited to:
		
		• Variety of materials and drawings
		  ◦ Computer programs
		  ◦ Art materials
		• Two-dimensional figure – a figure with two basic units of measure, usually length and width
		• Polygon – a closed figure with at least 3 sides, where all sides are straight (no curves)
		• Spatial visualization – creation and manipulation of mental representations of shapes
		• Attributes of two-dimensional figures – characteristics that define a geometric figure (e.g., sides, vertices, etc.)
		• Attributes of two-dimensional figures

Kindergarten	Grade 1	Grade 2

(side) lengths and corners that appear to be the same or equal
  - Irregular triangle – a triangle with outer edge (side) lengths and/or corners that appear to be different or unequal
- Rectangle
  - 4 straight outer edges (sides)
  - 4 square corners (vertices)
  - Opposite outer edge (side) lengths that appear to be the same or equal
- Square (special rectangle)
  - 4 straight outer edges (sides)
  - 4 square corners (vertices)
  - All outer edge (side) lengths that appear to be the same or equal
  - Opposite outer edge (side) lengths that appear to be the same or equal
 	
Note(s):
	- Vertex (vertices) in a two-dimensional figure – the point (corner) where two sides (outer edges) of a two-dimensional figure meet
	  - Number of vertices
	- Types of corners
	  - Square corners
	  - Square corners can be determined using the corner of a known square or rectangle (e.g., sticky note, sheet of paper, etc.).
	  - May have a box in corner to represent square corner
	  - Not square corners
	  - Opposite corners
	- Attributes that do not identify a two-dimensional figure
	  - Orientation
	  - Size
	  - Color
		- Side – a straight outer boundary between two vertices (line segment) of a two-dimensional figure
		  - Number of sides
		  - Length of sides
		- Vertex (vertices) in a two-dimensional figure – the point (corner) where two sides of a two-dimensional figure meet
		  - Number of vertices
		- Types of corners
		  - Square corners
		  - Square corners can be determined using the corner of a known square or rectangle (e.g., sticky note, sheet of paper, etc.).
		  - May have a box in corner to represent square corner
		  - Not square corners
		  - Opposite corners

Kindergarten	Grade 1	Grade 2

• Grade Level(s):
  ◦ Grade 1 will identify two-dimensional shapes, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons and describe their attributes using formal geometric language.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Identifying and using attributes of two-dimensional shapes and three-dimensional solids
• TxCCRS:
  ◦ IX. Communication and Representation
  • X. Connections
	◦ Texture
	• Create two-dimensional figures based on attributes
	  ◦ Circle
	  • A round, flat figure
	  • No straight sides (outer edges)
	  • No vertices (corners)
	  ◦ Triangle
	  • 3 straight sides (outer edges)
	  • 3 vertices (corners)
	  • Regular triangle – a triangle with side (outer edge) lengths and corners that appear to be the same or equal
	  • Irregular triangle – a triangle with side (outer edge) lengths and/or corners that appear to be different or unequal
	  ◦ Rectangle
	  • 4 straight sides (outer edges)
	  • 4 vertices (corners)
	  • Opposite sides equal in length
	  • 4 square corners
	  ◦ Rhombus
	  • 4 straight sides (outer edges)
	  • 4 vertices (corners)
	  • All sides equal in length
	  • Opposite corners equal
	  ◦ Square (a special type of rectangle and a special type of rhombus)
	  • 4 straight sides (outer edges)
	  • 4 vertices (corners)
	  • All sides equal in length
	  • Opposite sides equal in length
	  • 4 square corners
	  • Opposite corners equal
	  ◦ Hexagon
	  • 6 straight sides (outer edges)
		• Attributes that do not identify two-dimensional figures
		  ◦ Orientation
		  ◦ Size
		  ◦ Color
		  ◦ Texture
		• Regular figure – a polygon with all side lengths and corners equal
		• Irregular figure – a polygon with side lengths and/or corners that are not all equal
		• Create regular and irregular two-dimensional figures based on attributes.
		  ◦ Circle
		  • A figure formed by a closed curve with all points equal distance from the center
		  • No straight sides
		  • No vertices
		  ◦ Triangle
		  • 3 sides
		  • 3 vertices
		  ◦ Rectangle
		  • 4 sides
		  • 4 vertices
		  • Opposite sides equal in length
		  • 4 square corners
		  ◦ Rhombus
		  • 4 sides
		  • 4 vertices
		  • All sides equal in length
		  • Opposite corners equal
		  ◦ Square (a special type of rectangle and a special type of rhombus)
		  • 4 sides
		  • 4 vertices
		  • All sides equal in length
		  • Opposite sides equal in length

Kindergarten	Grade 1	Grade 2

	• 6 vertices (corners)
	• Regular hexagon – a hexagon with side (outer edge) lengths and corners that appear to be the same or equal
	• Irregular hexagon – a hexagon with side (outer edge) lengths and/or corners that appear to be different or unequal
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Kindergarten identified two-dimensional shapes, including circles, triangles, rectangles, and squares as special rectangles.
	  ◦ Kindergarten created two-dimensional shapes using a variety of materials and drawings.
	  ◦ Grade 2 will create two-dimensional shapes based on given attributes, including number of sides and vertices.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Analyzing attributes of two-dimensional shapes and three-dimensional solids
	• TxCCRS:
	  ◦ III.A. Geometric Reasoning – Figures and their properties
	  ◦ IX. Communication and Representation
		• 4 square corners
		• Opposite corners equal
		◦ Pentagon
		• 5 sides
		• 5 vertices
		◦ Hexagon
		• 6 sides
		• 6 vertices
		◦ Heptagon or septagon
		• 7 sides
		• 7 vertices
		◦ Octagon
		• 8 sides
		• 8 vertices
		◦ Nonagon or enneagon
		• 9 sides
		• 9 vertices
		◦ Decagon
		• 10 sides
		• 10 vertices
		◦ Undecagon or hendecagon
		• 11 sides
		• 11 vertices
		◦ Dodecagon
		• 12 sides
		• 12 vertices
		
		Note(s):
		
		• Grade Level(s):
		  • Grade 1 created two-dimensional figures, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons.

K.6D	**1.6D**	

Kindergarten	Grade 1	Grade 2

Identify attributes of two-dimensional shapes using informal and formal geometric language interchangeably.
 	
Identify
 	
ATTRIBUTES OF TWO-DIMENSIONAL SHAPES USING INFORMAL AND FORMAL GEOMETRIC LANGUAGE INTERCHANGEABLY
 	
Including, but not limited to:
 	
• Two-dimensional figure – a flat figure
• Attributes of two-dimensional figures – characteristics that define a geometric figure (e.g., outer edges [sides], corners [vertices], etc.)
• Properties of two-dimensional figures – relationship of attributes within a geometric figure (e.g., a square has 4 outer edges [sides] that appear to be the same length and 4 square corners, etc.) and between a group of geometric figures (e.g., a square and a rectangle both have 4 outer edges [sides] and 4 square corners; however, a square has 4 outer edges [sides] that appear to be the same length but a rectangle has only opposite outer edges [sides] that appear to be the same length; etc.)
• Connection between informal language and formal language
  ◦ Use interchangeably
  • "Side" for informal term "edge"
  ◦ Side – a straight outer boundary between two vertices (line segment) of a two-dimensional figure
  • "Vertex" or "vertices" for informal term
	Identify two-dimensional shapes, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons and describe their attributes using formal geometric language.
	
	Identify
	
	TWO-DIMENSIONAL SHAPES, INCLUDING CIRCLES, TRIANGLES, RECTANGLES, AND SQUARES, AS SPECIAL RECTANGLES, RHOMBUSES, AND HEXAGONS
	
	Including, but not limited to:
	
	• Two-dimensional figure – a flat figure
	• Names of two-dimensional shapes
	  ◦ Circle
	  ◦ Triangle
	  ◦ Rectangle
	  ◦ Rhombus
	  ◦ Square (a special type of rectangle and a special type of rhombus)
	  ◦ Hexagon
	• Identify two-dimensional shapes in the real-world
	  ◦ Circle
	  • Pizza, coin, etc.
	  ◦ Triangle
	  • Pizza slice, yield sign, etc.
	  ◦ Rectangle
	  • Door, TV screen, etc.
	  ◦ Rhombus
	  • Kite, baseball diamond, etc.
	  ◦ Square (a special type of rectangle and a special type of rhombus)
	  • Floor tiles, pizza box lid, etc.
	  ◦ Hexagon
		• Grade 1 identified two-dimensional shapes, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons and describe their attributes using formal geometric language.
		• Grade 3 will 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.
		• Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Applying knowledge of two-dimensional shapes and three-dimensional solids, including exploration of early fraction concepts
		• TxCCRS:
		  ◦ III.A. Geometric Reasoning – Figures and their properties
		  ◦ IX. Communication and Representation

Kindergarten	Grade 1	Grade 2

"corners"
  - Vertex (vertices) in a two-dimensional figure – a corner where two outer edges (sides) of a two-dimensional figure meet
- Circle
  - A round, flat figure
  - No straight outer edges (sides)
  - No corners (vertices)
- Triangle
  - 3 straight outer edges (sides)
  - 3 corners (vertices)
  - Regular triangle – a triangle with outer edge (side) lengths and corners that appear to be the same or equal
  - Irregular triangle – a triangle with outer edge (side) lengths and/or corners that appear to be different or unequal
- Rectangle
  - 4 straight outer edges (sides)
  - 4 square corners (vertices)
  - Opposite outer edge (side) lengths that appear to be the same or equal
- Square (special rectangle)
  - 4 straight outer edges (sides)
  - 4 square corners (vertices)
  - All outer edge (side) lengths that appear to be the same or equal
  - Opposite outer edge (side) lengths that appear to be the same or equal
- Attributes that do not identify a two-dimensional figure
  - Orientation
  - Size
  - Color
  - Texture
	- Beehive hole, soccer ball pattern, etc.
	
	Describe
	
	ATTRIBUTES OF TWO-DIMENSIONAL SHAPES USING FORMAL GEOMETRIC LANGUAGE
	
	Including, but not limited to:
	
	- Two-dimensional figure – a flat figure
	- Attributes of two-dimensional figures – characteristics that define a geometric figure (e.g., sides [outer edges], vertices [corners], etc.)
	- Properties of two-dimensional figures – relationship of attributes within a geometric figure (e.g., a square has 4 sides [outer edges] that appear to be the same length and 4 square corners, etc.) and between a group of geometric figures (e.g., a square and a rectangle both have 4 sides [outer edges] and 4 square corners; however, a square has 4 sides [outer edges] that appear to be the same length but a rectangle has only opposite sides [outer edges] that appear to be the same length; etc.)
	- Attributes of two-dimensional figures
	  - Side – a straight outer boundary between two vertices (line segment) of a two-dimensional figure
	  - Number of sides
	  - Length of sides
	  - Vertex (vertices) in a two-dimensional figure – the point (corner) where two sides (outer edges) of a two-dimensional figure meet
	  - Number of vertices
	  - Types of corners	

Kindergarten	Grade 1	Grade 2

Note(s):
• Grade Level(s):
  ◦ Kindergarten transitions to formal geometric language to describe the attributes of two-dimensional shapes.
  ◦ Grade 1 will identify two-dimensional shapes, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons and describe their attributes using formal geometric language.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Identifying and using attributes of two-dimensional shapes and three-dimensional solids
• TxCCRS:
  ◦ IX. Communication and Representation
  • X. Connections
	• Square corners
	  ◦ Square corners can be determined using the corner of a known square or rectangle (e.g., sticky note, sheet of paper, etc.).
	  • May have a box in corner to represent square corner
	• Not square corners
	• Opposite corners
	• Attributes that do not identify a two-dimensional figure
	  ◦ Orientation
	  ◦ Size
	  ◦ Color
	  ◦ Texture
	• Types of two-dimensional figures
	  ◦ Circle
	  • A round, flat figure
	  • No straight sides (outer edges)
	  • No vertices (corners)
	  ◦ Triangle
	  • 3 straight sides (outer edges)
	  • 3 vertices (corners)
	  • Regular triangle – a triangle with side (outer edge) lengths and corners that appear to be the same or equal
	  • Irregular triangle – a triangle with side (outer edge) lengths and/or corners that appear to be different or unequal
	  ◦ Rectangle
	  • 4 straight sides (outer edges)
	  • 4 vertices (corners)
	  • Opposite sides equal in length
	  • 4 square corners
	  ◦ Rhombus
	  • 4 straight sides (outer edges)	

Kindergarten	Grade 1	Grade 2
	• 4 vertices (corners) • All sides equal in length • Opposite corners equal ○ Square (a special type of rectangle and a special type of rhombus) • 4 straight sides (outer edges) • 4 vertices (corners) • All sides equal in length • Opposite sides equal in length • 4 square corners • Opposite corners equal ○ Hexagon • 6 straight sides (outer edges) • 6 vertices (corners) • Regular hexagon – a hexagon with side (outer edge) lengths and corners that appear to be the same or equal • Irregular hexagon – a hexagon with side (outer edge) lengths and/or corners that appear to be different or unequal Note(s): • Grade Level(s): ○ Kindergarten identified attributes of two-dimensional shapes using informal and formal geometric language interchangeably. ○ Grade 2 will create two-dimensional shapes based on given attributes, including number of sides and vertices. ○ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ○ Analyzing attributes of two-dimensional shapes and three-dimensional solids • TxCCRS:	

Kindergarten	Grade 1	Grade 2
	◦ III.A. Geometric Reasoning – Figures and their properties ◦ IX. Communication and Representation	
K.6B **Identify three-dimensional solids, including cylinders, cones, spheres, and cubes, in the real world.** Identify THREE-DIMENSIONAL SOLIDS, INCLUDING CYLINDERS, CONES, SPHERES, AND CUBES, IN THE REAL WORLD Including, but not limited to: • Identify three-dimensional figures ◦ Three-dimensional figure – a solid figure ◦ Identity not changed by orientation ◦ Identity not changed by size ◦ Identity not changed by color ◦ Identity not changed by texture • Identification and connection between formal geometric names to three-dimensional solids by examining objects in the real world ◦ Cylinder • Can, straw, etc. • Cylinders can stand, slide, or roll. ◦ Cone • Ice cream cone, party hat, etc. • Cones can stand, slide, or roll. ◦ Sphere • Ball, globe, etc. • Spheres can roll in any direction. ◦ Cube • Die, alphabet block, etc.	**1.6E** **Identify three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes), and triangular prisms, and describe their attributes using formal geometric language.** Identify THREE-DIMENSIONAL SOLIDS, INCLUDING SPHERES, CONES, CYLINDERS, RECTANGULAR PRISMS (INCLUDING CUBES), AND TRIANGULAR PRISMS Including, but not limited to: • Three-dimensional figure – a solid figure • Names of three-dimensional figures ◦ Sphere ◦ Cone ◦ Cylinder ◦ Rectangular prism ◦ Cube (special rectangular prism) ◦ Triangular prism • Identify three-dimensional shapes in the real-world ◦ Sphere • Globe, ball, etc. ◦ Cone • Party hat, ice cream cone, etc. ◦ Cylinder • Can, paper towel roll, etc. ◦ Rectangular prism	

Kindergarten	Grade 1	Grade 2

• Cubes can stand or slide.
 	
Note(s):
 	
• Grade Level(s):
  ◦ Grade 1 will identify three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes), and triangular prisms, and describe their attributes using formal geometric language.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Identifying and using attributes of two-dimensional shapes and three-dimensional solids
• TxCCRS:
  ◦ IX. Communication and Representation
  • X. Connections
	• Tissue box, shoe box, etc.
	◦ Cube (special rectangular prism)
	  • Alphabet block, die, etc.
	◦ Triangular prism
	  • Tent, a Toblerone® candy box, etc.
	
	Describe
	
	ATTRIBUTES OF THREE-DIMENSIONAL SOLIDS USING FORMAL GEOMETRIC LANGUAGE
	
	Including, but not limited to:
	
	• Three-dimensional figure – a solid figure
	• Attributes of three-dimensional figures – characteristics that define a geometric figure (e.g., faces [flat surfaces], curved surfaces, edges, vertices, etc.)
	• Properties of three-dimensional figures – relationship of attributes within a geometric figure (e.g., a cylinder can roll on its curved surface and stand or slide on its face [flat surface], etc.) and between a group of geometric figures (e.g., a cylinder and a cube can both stand or slide on their faces [flat surfaces]; however, a cylinder can also roll on its curved surface; etc.)
	• Attributes of three-dimensional figures using formal language
	  ◦ Surfaces
	  • Curved surface
	  • Flat surface
	  • Face of a prism – a flat figure with straight sides that forms the surface of a prism
	  ◦ Number of faces
	  ◦ Shape of faces	

Kindergarten	Grade 1	Grade 2

	◦ Edge – where the sides of two faces meet on a three-dimensional figure
	  • Number of edges
	◦ Vertex (vertices) in a three-dimensional figure – the point (corner) where three or more edges of a three-dimensional figure meet
	  • Number of vertices
	• Attributes that do not identify a three-dimensional figure
	◦ Orientation
	◦ Size
	◦ Color
	◦ Texture
	• Types of three-dimensional figures
	◦ Curved surface three-dimensional figures
	  • Sphere
	  ◦ 1 curved surface forming a solid round figure
	  ◦ Rolls
	  • Cone
	  ◦ 1 flat surface shaped like a circle
	  ◦ 1 curved surface
	  ◦ 1 vertex
	  ◦ Rolls, slides
	  • Cylinder
	  ◦ 2 equal, opposite, flat surfaces shaped like circles
	  ◦ 1 curved surface
	  ◦ Rolls, slides, stacks
	◦ Prisms
	  • Rectangular prism
	  ◦ 6 rectangular faces
	  ◦ 12 edges
	  ◦ 8 vertices
	  ◦ Slides, stacks	

Kindergarten	Grade 1	Grade 2

	• Cube (special rectangular prism)
	  ◦ 6 square faces
	  ◦ 12 edges
	  ◦ 8 vertices
	  ◦ Slides, stacks
	• Triangular prism
	  ◦ 5 faces (2 triangular faces, 3 rectangular faces)
	  ◦ 9 edges
	  ◦ 6 vertices
	  ◦ Slides, stacks
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Kindergarten identified three-dimensional solids, including cylinders, cones, spheres, and cubes, in the real world.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Analyzing attributes of two-dimensional shapes and three-dimensional solids
	• TxCCRS:
	  ◦ III.A. Geometric Reasoning – Figures and their properties
	  ◦ IX. Communication and Representation	

K.6C **Identify two-dimensional components of three-dimensional objects.** Identify TWO-DIMENSIONAL COMPONENTS OF THREE-	**1.6B** **Distinguish between attributes that define a two-dimensional or three-dimensional figure and attributes that do not define the shape.** Distinguish	

Kindergarten	Grade 1	Grade 2

DIMENSIONAL OBJECTS
 	
Including, but not limited to:
 	
• Two-dimensional figure – a flat figure
• Three-dimensional figure – a solid figure
• Two-dimensional figures as components of three-dimensional real-world objects
  ◦ Circle
  ◦ Triangle
  ◦ Rectangle
  ◦ Square (special rectangle)
 	
Note(s):
 	
• Grade Level(s):
  ◦ Grade 1 will distinguish between attributes that define a two-dimensional or three-dimensional figure and attributes that do not define the shape.
  ◦ Grade 1 will identify three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes), and triangular prisms, and describe their attributes using formal geometric language.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Identifying and using attributes of two-dimensional shapes and three-dimensional solids
• TxCCRS:
  ◦ IX. Communication and Representation
  • X. Connections
	BETWEEN ATTRIBUTES THAT DEFINE A TWO-DIMENSIONAL FIGURE AND ATTRIBUTES THAT DO NOT DEFINE THE SHAPE
	
	Including, but not limited to:
	
	• Two-dimensional figure – a flat figure
	• Attributes of two-dimensional figures – characteristics that define a geometric figure (e.g., sides [outer edges], vertices [corners], etc.)
	• Properties of two-dimensional figures – relationship of attributes within a geometric figure (e.g., a square has 4 sides [outer edges] that appear to be the same length and 4 square corners, etc.) and between a group of geometric figures (e.g., a square and a rectangle both have 4 sides [outer edges] and 4 square corners; however, a square has 4 sides [outer edges] that appear to be the same length but a rectangle has only opposite sides [outer edges] that appear to be the same length; etc.)
	• Attributes of two-dimensional figures
	  ◦ Side – a straight outer boundary between two vertices (line segment) of a two-dimensional figure
	  • Number of sides
	  • Length of sides
	  ◦ Vertex (vertices) in a two-dimensional figure – the point (corner) where two sides (outer edges) of a two-dimensional figure meet
	  • Number of vertices
	  ◦ Types of corners
	  • Square corners
	  ◦ Square corners can be determined using the corner of a known square or	

Kindergarten	Grade 1	Grade 2
	rectangle (e.g., sticky note, sheet of paper, etc.). • May have a box in corner to represent square corner • Not square corners • Opposite corners • Attributes that do not define a two-dimensional figure ○ Orientation ○ Size ○ Color ○ Texture Distinguish BETWEEN ATTRIBUTES THAT DEFINE A THREE-DIMENSIONAL FIGURE AND ATTRIBUTES THAT DO NOT DEFINE THE SHAPE Including, but not limited to: • Three-dimensional figure – a solid figure • Attributes of three-dimensional figures – characteristics that define a geometric figure (e.g., faces [flat surfaces], curved surfaces, edges, vertices, etc.) • Properties of three-dimensional figures – relationship of attributes within a geometric figure (e.g., a cylinder can roll on its curved surface and stand or slide on its face [flat surface], etc.) and between a group of geometric figures (e.g., a cylinder and a cube can both stand or slide on their faces [flat surfaces]; however, a cylinder can also roll on its curved surface; etc.) • Attributes that define a three-dimensional figure	

Kindergarten	Grade 1	Grade 2

	◦ Surfaces
	  • Curved surface
	  • Flat surface
	◦ Face of a prism – a flat figure with straight sides that forms the surface of a prism
	  • Number of faces
	  • Shape of faces
	◦ Edge – where the sides of two faces meet on a three-dimensional figure
	  • Number of edges
	◦ Vertex (vertices) in a three-dimensional figure – the point (corner) where three or more edges of a three-dimensional figure meet
	  • Number of vertices
	• Attributes that do not define a three-dimensional figure
	◦ Orientation
	◦ Size
	◦ Color
	◦ Texture
	
	Note(s):
	
	• Grade Level(s):
	◦ Kindergarten identified two-dimensional components of three-dimensional objects.
	◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	◦ Analyzing attributes of two-dimensional shapes and three-dimensional solids
	• TxCCRS:
	◦ III.A. Geometric Reasoning – Figures and their properties
	◦ IX. Communication and Representation	

Kindergarten	Grade 1	Grade 2
Classifying and Sorting Two-Dimensional and Three-Dimensional Figures		
K.6 ***Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:***	***1.6*** ***Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:***	***2.8*** ***Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:***
K.6E **Classify and sort a variety of regular and irregular two- and three-dimensional figures regardless of orientation or size.** Classify, Sort A VARIETY OF REGULAR AND IRREGULAR TWO- AND THREE-DIMENSIONAL FIGURES REGARDLESS OF ORIENTATION OR SIZE Including, but not limited to: • Two-dimensional figure – a flat figure • Three-dimensional figure – a solid figure • Sort – grouping objects or figures by a shared characteristic or attribute • Classify – applying an attribute to categorize a sorted group • Attributes of two-dimensional figures – characteristics that define a geometric figure (e.g., outer edges [sides], corners [vertices], etc.) • Properties of two-dimensional figures –	**1.6A** **Classify and sort regular and irregular two-dimensional shapes based on attributes using informal geometric language.** Classify, Sort REGULAR AND IRREGULAR TWO-DIMENSIONAL SHAPES BASED ON ATTRIBUTES USING INFORMAL GEOMETRIC LANGUAGE Including, but not limited to: • Two-dimensional figure – a flat figure • Sort – grouping objects or figures by a shared characteristic or attribute • Classify – applying an attribute to categorize a sorted group • Attributes of two-dimensional figures – characteristics that define a geometric figure (e.g., sides [outer edges], vertices [corners], etc.) • Properties of two-dimensional figures – relationship of attributes within a geometric	**2.8C** **Classify and sort polygons with 12 or fewer sides according to attributes, including identifying the number of sides and number of vertices.** Classify, Sort POLYGONS WITH 12 OR FEWER SIDES ACCORDING TO ATTRIBUTES, INCLUDING IDENTIFYING THE NUMBER OF SIDES AND NUMBER OF VERTICES Including, but not limited to: • Two-dimensional figure – a figure with two basic units of measure, usually length and width • Sort – grouping objects or figures by a shared characteristic or attribute • Classify – applying an attribute to categorize a sorted group • Attributes of two-dimensional figures – characteristics that define a geometric figure (e.g., sides, vertices, etc.)

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relationship of attributes within a geometric figure (e.g., a square has 4 outer edges [sides] that appear to be the same length and 4 square corners, etc.) and between a group of geometric figures (e.g., a square and a rectangle both have 4 outer edges [sides] and 4 square corners; however, a square has 4 outer edges [sides] that appear to be the same length but a rectangle has only opposite outer edges [sides] that appear to be the same length; etc.)
• Regular figure – a figure with outer edge (side) lengths and corners that appear to be the same or equal
• Irregular figure – a figure with outer edge (side) lengths and/or corners that appear to be different or unequal
• Attributes of two-dimensional figures
  ◦ Side – a straight outer boundary between two vertices (line segment) of a two-dimensional figure
  • Number of sides
  • Length of sides
  ◦ Vertex (vertices) in a two-dimensional figure – a corner where two outer edges (sides) of a two-dimensional figure meet
  • Number of vertices
  ◦ Types of corners
  • Square corners
  ◦ Square corners can be determined using the corner of a known square or rectangle (e.g., sticky note, sheet of paper, etc.).
  • Not square corners
• Attributes that do not identify a two- or three-dimensional figure
	figure (e.g., a square has 4 sides [outer edges] that appear to be the same length and 4 square corners, etc.) and between a group of geometric figures (e.g., a square and a rectangle both have 4 sides [outer edges] and 4 square corners; however, a square has 4 sides [outer edges] that appear to be the same length but a rectangle has only opposite sides [outer edges] that appear to be the same length; etc.)
	• Attributes of two-dimensional figures
	  ◦ Side – a straight outer boundary between two vertices (line segment) of a two-dimensional figure
	  • Number of sides
	  • Length of sides
	  ◦ Vertex (vertices) in a two-dimensional figure – the point (corner) where two sides (outer edges) of a two-dimensional figure meet
	  • Number of vertices
	  ◦ Types of corners
	  • Square corners
	  ◦ Square corners can be determined using the corner of a known square or rectangle (e.g., sticky note, sheet of paper, etc.).
	  • May have a box in corner to represent square corner
	  • Not square corners
	  • Opposite corners
	• Attributes that do not identify a two-dimensional figure
	  ◦ Orientation
	  ◦ Size
	  ◦ Color
	  ◦ Texture
		• Properties of two-dimensional figures – relationship of attributes within a geometric figure (e.g., a square has 4 sides equal in length and 4 square corners, etc.) and between a group of geometric figures (e.g., a square and a rectangle both have 4 sides and 4 square corners; however, a square has 4 sides equal in length but a rectangle has only opposite sides equal in length; etc.)
		• Regular figure – a polygon with all side lengths and corners equal
		• Irregular figure – a polygon with side lengths and/or corners that are not all equal
		• Attributes of two-dimensional figures
		  ◦ Side – a straight outer boundary between two vertices (line segment) of a two-dimensional figure
		  • Number of sides
		  • Length of sides
		  ◦ Vertex (vertices) in a two-dimensional figure – the point (corner) where two sides of a two-dimensional figure meet
		  • Number of vertices
		  ◦ Types of corners
		  • Square corners
		  ◦ Square corners can be determined using the corner of a known square or rectangle (e.g., sticky note, sheet of paper, etc.).
		  • May have a box in corner to represent square corner
		  • Not square corners
		  • Opposite corners
		• Polygon – a closed figure with at least 3 sides, where all sides are straight (no curves)
		  • Types of polygons

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◦ Orientation ◦ Size ◦ Color ◦ Texture • Collection of two-dimensional figures ◦ Models and real-life objects • Circles, triangles, rectangles, squares ◦ Sort and justify • Informal and formal language used interchangeably • Rule used for sorting expressed • Attributes and properties of geometric figures expressed ◦ Existence (have) and absence (do not have) of attributes and properties expressed (e.g., figures that have “a common attribute” and figures that do not have “a common attribute”) • Collection of three-dimensional figures ◦ Real-life objects • Cylinders, cones, spheres, cubes • Rectangular prisms, triangular prisms ◦ Sort and justify • Informal language • Rule used for sorting expressed • Attributes and properties of geometric figures expressed ◦ Existence (have) and absence (do not have) of attributes and properties expressed (e.g., figures that have “a common attribute” and figures that do not have “a common attribute”) • Mixed collection of two- and three-dimensional figures ◦ Models and real-life objects ◦ Sort and justify	• Types of two-dimensional figures ◦ Circle • A round, flat figure • No straight sides (outer edges) • No vertices (corners) ◦ Triangle • 3 straight sides (outer edges) • 3 vertices (corners) • Regular triangle – a triangle with side (outer edge) lengths and corners that appear to be the same or equal • Irregular triangle – a triangle with side (outer edge) lengths and/or corners that appear to be different or unequal ◦ Rectangle • 4 straight sides (outer edges) • 4 vertices (corners) • Opposite sides equal in length • 4 square corners ◦ Rhombus • 4 straight sides (outer edges) • 4 vertices (corners) • All sides equal in length • Opposite corners equal ◦ Square (a special type of rectangle and a special type of rhombus) • 4 straight sides (outer edges) • 4 vertices (corners) • All sides equal in length • Opposite sides equal in length • 4 square corners • Opposite corners equal ◦ Hexagon • 6 straight sides (outer edges) • 6 vertices (corners) • Regular hexagon – a hexagon with side	• Triangle • 3 sides • 3 vertices • Rectangle • 4 sides • 4 vertices • Opposite sides equal in length • 4 square corners • Rhombus • 4 sides • 4 vertices • All sides equal in length • Opposite corners equal • Square (a special type of rectangle and a special type of rhombus) • 4 sides • 4 vertices • All sides equal in length • Opposite sides equal in length • 4 square corners • Opposite corners equal • Pentagon • 5 sides • 5 vertices • Hexagon • 6 sides • 6 vertices • Heptagon or septagon • 7 sides • 7 vertices • Octagon • 8 sides • 8 vertices • Nonagon or enneagon • 9 sides • 9 vertices

Kindergarten	Grade 1	Grade 2

• Informal language
• Rule used for sorting expressed
• Attributes and properties of geometric figures expressed
  ◦ Existence (have) and absence (do not have) of attributes and properties expressed (e.g., figures that have “a common attribute” and figures that do not have “a common attribute”)
 	
Note(s):
 	
• Grade Level(s):
  ◦ Grade 1 will classify and sort regular and irregular two-dimensional shapes based on attributes using informal geometric language.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Identifying and using attributes of two-dimensional shapes and three-dimensional solids
• TxCCRS:
  ◦ IX. Communication and Representation
  • X. Connections
	(outer edge) lengths and corners that appear to be the same or equal
	  • Irregular hexagon – a hexagon with side (outer edge) lengths and/or corners that appear to be different or unequal
	• Concrete models (e.g., wood or plastic figures, etc.) and pictorial models (e.g., drawings, images, etc.)
	• Collection of two-dimensional figures
	  ◦ Sort and justify
	  • Rule used for sorting expressed
	  • Attributes and properties of geometric figures expressed
	  ◦ Existence (have) and absence (do not have) of attributes and properties expressed (e.g., figures that have “a common attribute” and figures that do not have “a common attribute”)
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Kindergarten classified and sorted a variety of regular and irregular two- and three-dimensional figures regardless of orientation or size.
	  ◦ Grade 2 will classify and sort polygons with 12 or fewer sides according to attributes, including identifying the number of sides and number of vertices.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Analyzing attributes of two-dimensional shapes and three-dimensional solids
	• TxCCRS:
		• Decagon
		  • 10 sides
		  • 10 vertices
		• Undecagon or hendecagon
		  • 11 sides
		  • 11 vertices
		• Dodecagon
		  • 12 sides
		  • 12 vertices
		• Concrete models (e.g., wood or plastic figures, etc.) and pictorial models (e.g., drawings, images, etc.)
		• Collection of two-dimensional figures
		  • Sort and justify
		  • Rule used for sorting expressed
		  • Attributes and properties of geometric figures expressed
		  • Existence (have) and absence (do not have) of attributes and properties expressed (e.g., figures that have “a common attribute” and figures that do not have “a common attribute”)
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 1 classified and sorted regular and irregular two-dimensional shapes based on attributes using informal geometric language.
		  ◦ Grade 3 will 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.
		  ◦ Various mathematical process standards will be applied to this student expectation

Kindergarten	Grade 1	Grade 2
	◦ III.A. Geometric Reasoning – Figures and their properties ◦ IX. Communication and Representation	as appropriate. • TxRCFP: ◦ Applying knowledge of two-dimensional shapes and three-dimensional solids, including exploration of early fraction concepts • TxCCRS: ◦ III.A. Geometric Reasoning – Figures and their properties ◦ IX. Communication and Representation
		2.8B **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.** Classify, 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 Including, but not limited to: • Three-dimensional figure – a figure that has measurements including length, width (depth), and height • Sort – grouping objects or figures by a shared characteristic or attribute • Classify – applying an attribute to categorize a sorted group

Kindergarten	Grade 1	Grade 2

		• Attributes of three-dimensional figures – characteristics that define a geometric figure (e.g., faces, curved surfaces, edges, vertices, etc.)
		• Properties of three-dimensional figures – relationship of attributes within a geometric figure (e.g., a rectangular prism has 6 faces and each pair of opposite faces are the same size and shape, etc.) and between a group of geometric figures (e.g., a cube and a rectangular prism both have 6 faces with opposite faces equal in size and shape; however, a cube has only square faces but a rectangular prism can have square or rectangular faces; etc.)
		• Attributes of three-dimensional figures
		  ◦ Surfaces
		  • Curved surface
		  • Flat surface
		  ◦ Face of a prism – a polygon that forms a surface of a prism
		  • Number of faces
		  • Shape of faces
		  ◦ Edge – where the sides of two faces meet on a three-dimensional figure
		  • Number of edges
		  ◦ Vertex (vertices) in a three-dimensional figure – the point (corner) where three or more edges of a three-dimensional figure meet
		  • Number of vertices
		  ◦ Curved surface three-dimensional figures
		  • Cone
		  ◦ 1 flat surface shaped like a circle
		  ◦ 1 curved surface
		  ◦ 1 vertex

Kindergarten	Grade 1	Grade 2

		• Cylinder
		  ◦ 2 equal, opposite, flat surfaces shaped like circles
		  ◦ 1 curved surface
		• Sphere
		  ◦ 1 curved surface with all points on the surface equal distance from the center
		◦ Prisms
		• Triangular prism
		  ◦ 5 faces (2 triangular faces, 3 rectangular faces)
		  ◦ 9 edges
		  ◦ 6 vertices
		• Rectangular prism
		  ◦ 6 rectangular faces
		  ◦ 12 edges
		  ◦ 8 vertices
		• Cube (special rectangular prism)
		  ◦ 6 square faces
		  ◦ 12 edges
		  ◦ 8 vertices
		• Concrete models (e.g., wood or plastic figures, etc.), real-world objects (e.g., a cereal box, can of beans, etc.), and pictorial models (e.g., drawings, images, etc.)
		• Collection of three-dimensional figures
		◦ Sort and justify
		• Rule used for sorting expressed
		• Attributes and properties of geometric figures expressed
		  ◦ Existence (have) and absence (do not have) of attributes and properties expressed (e.g., figures that have “a common attribute” and figures that do not have “a common attribute”)

Kindergarten	Grade 1	Grade 2
		Note(s): • Grade Level(s): ◦ Grade 1 classified and sorted regular and irregular two-dimensional shapes based on attributes using informal geometric language. ◦ Grade 3 will 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. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Applying knowledge of two-dimensional shapes and three-dimensional solids, including exploration of early fraction concepts • TxCCRS: ◦ III.A. Geometric Reasoning – Figures and their properties ◦ IX. Communication and Representation
Composing and Decomposing Two-Dimensional and Three-Dimensional Figures		
K.6 ***Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:***	***1.6*** ***Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:***	***2.8*** ***Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:***
K.6F	**1.6F**	**2.8D**

Kindergarten	Grade 1	Grade 2

Create two-dimensional shapes using a variety of materials and drawings.
 	
Create
 	
TWO-DIMENSIONAL SHAPES USING A VARIETY OF MATERIALS AND DRAWINGS
 	
Including, but not limited to:
 	
• Variety of materials and drawings
  ◦ Computer programs
  ◦ Art materials
• Two-dimensional figure – a flat figure
• Spatial visualization – creation and manipulation of mental representations of shapes
• Attributes of two-dimensional figures
  ◦ Side – a straight outer boundary between two vertices (line segment) of a two-dimensional figure
  • Number of sides
  • Length of sides
  ◦ Vertex (vertices) in a two-dimensional figure – a corner where two outer edges (sides) of a two-dimensional figure meet
  • Number of vertices
	Compose two-dimensional shapes by joining two, three, or four figures to produce a target shape in more than one way if possible.
	
	Compose
	
	TWO-DIMENSIONAL SHAPES BY JOINING TWO, THREE, OR FOUR FIGURES TO PRODUCE A TARGET SHAPE IN MORE THAN ONE WAY IF POSSIBLE
	
	Including, but not limited to:
	
	• Two-dimensional figure – a flat figure
	• Spatial visualization – creation and manipulation of mental representations of shapes
	• Compose figures – to combine smaller geometric figures to form a larger geometric figure
	• Compose two-dimensional shapes using a variety of concrete models.
	• Compose regular and irregular figures to produce a target shape.
	  ◦ Multiple compositions if possible
	
	Note(s):
		Compose two-dimensional shapes and three-dimensional solids with given properties or attributes.
		
		Compose
		
		TWO-DIMENSIONAL SHAPES WITH GIVEN PROPERTIES OR ATTRIBUTES
		
		Including, but not limited to:
		
		• Two-dimensional figure – a figure with two basic units of measure, usually length and width
		• Spatial visualization – creation and manipulation of mental representations of shapes
		• Compose figures – to combine smaller geometric figures to form a larger geometric figure
		• Attributes of two-dimensional figures – characteristics that define a geometric figure (e.g., sides, vertices, etc.)
		• Properties of two-dimensional figures – relationship of attributes within a geometric figure (e.g., a square has 4 sides equal in length and 4 square corners, etc.) and between a group of geometric figures (e.g., a

Kindergarten	Grade 1	Grade 2
◦ Types of corners • Square corners ◦ Square corners can be determined using the corner of a known square or rectangle (e.g., sticky note, sheet of paper, etc.). • Not square corners • Attributes that do not identify a two-dimensional figure ◦ Orientation ◦ Size ◦ Color ◦ Texture • Create two-dimensional figures based on attributes ◦ Circle • A round, flat figure • No straight outer edges (sides) • No corners (vertices) ◦ Triangle • 3 straight outer edges (sides) • 3 corners (vertices) • Regular triangle – a triangle with outer edge (side) lengths and corners that appear to be the same or equal • Irregular triangle – a triangle with outer edge (side) lengths and/or corners that appear to be different or unequal ◦ Rectangle • 4 straight outer edges (sides) • 4 square corners (vertices) • Opposite outer edge (side) lengths that appear to be the same or equal ◦ Square (special rectangle) • 4 straight outer edges (sides) • 4 square corners (vertices)	• Grade Level(s): • Kindergarten created two-dimensional shapes using a variety of materials and drawings. • Grade 2 will compose two-dimensional shapes and three-dimensional solids with given properties or attributes. • Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: • Analyzing attributes of two-dimensional shapes and three-dimensional solids • TxCCRS: • III.A. Geometric Reasoning – Figures and their properties • IX. Communication and Representation	square and a rectangle both have 4 sides and 4 square corners; however, a square has 4 sides equal in length but a rectangle has only opposite sides equal in length; etc.) • Regular figure – a polygon with all side lengths and corners equal • Irregular figure – a polygon with side lengths and/or corners that are not all equal • Attributes of two-dimensional figures ◦ Side – a straight outer boundary between two vertices (line segment) of a two-dimensional figure • Number of sides • Length of sides ◦ Vertex (vertices) in a two-dimensional figure – the point (corner) where two sides of a two-dimensional figure meet • Number of vertices ◦ Types of corners • Square corners ◦ Square corners can be determined using the corner of a known square or rectangle (e.g., sticky note, sheet of paper, etc.). • May have a box in corner to represent square corner • Not square corners • Opposite corners • Attributes that do not identify a two-dimensional figure ◦ Orientation ◦ Size ◦ Color ◦ Texture • Compose two-dimensional figures using a variety of concrete models.

Kindergarten	Grade 1	Grade 2

• All outer edge (side) lengths that appear to be the same or equal
• Opposite outer edge (side) lengths that appear to be the same or equal
 	
Note(s):
 	
• Grade Level(s):
  ◦ Grade 1 will create two-dimensional figures, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons.
  ◦ Grade 1 will compose two-dimensional shapes by joining two, three, or four figures to produce a target shape in more than one way if possible.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Identifying and using attributes of two-dimensional shapes and three-dimensional solids
• TxCCRS:
  ◦ IX. Communication and Representation
  • X. Connections
		• Compose regular and irregular figures based on attributes.
		
		Compose
		
		THREE-DIMENSIONAL SOLIDS WITH GIVEN PROPERTIES OR ATTRIBUTES
		
		Including, but not limited to:
		
		• Three-dimensional figure – a figure that has measurements including length, width (depth), and height
		• Spatial visualization – creation and manipulation of mental representations of shapes
		• Compose figures – to combine smaller geometric figures to form a larger geometric figure
		• Attributes of three-dimensional figures – characteristics that define a geometric figure (e.g., faces, curved surfaces, edges, vertices, etc.)
		• Properties of three-dimensional figures – relationship of attributes within a geometric figure (e.g., a rectangular prism has 6 faces and each pair of opposite faces are the same size and shape, etc.) and between a group of geometric figures (e.g., a cube and a rectangular prism both have 6 faces with opposite faces equal in size and shape; however, a cube has only square faces but a rectangular prism can have square or rectangular faces; etc.)
		• Attributes of three-dimensional figures
		  ◦ Surfaces
		  • Curved surface

Kindergarten	Grade 1	Grade 2
		• Flat surface ○ Face of a prism – a polygon that forms a surface of a prism • Number of faces • Shape of faces ○ Edge – where the sides of two faces meet on a three-dimensional figure • Number of edges ○ Vertex (vertices) in a three-dimensional figure – the point (corner) where three or more edges of a three-dimensional figure meet • Number of vertices • Attributes that do not identify a three-dimensional figure ○ Orientation ○ Size ○ Color ○ Texture • Compose three-dimensional figures using a variety of concrete models. • Compose three-dimensional figures based on attributes. Note(s): • Grade Level(s): ○ Grade 1 composed two-dimensional shapes by joining two, three, or four figures to produce a target shape in more than one way if possible. ○ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ○ Applying knowledge of two-dimensional shapes and three-dimensional solids,

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		including exploration of early fraction concepts
		• TxCCRS:
		  ◦ III.A. Geometric Reasoning – Figures and their properties
		  ◦ IX. Communication and Representation

		2.8E
		
		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.
		
		Decompose
		
		TWO-DIMENSIONAL SHAPES
		
		Including, but not limited to:
		
		• Two-dimensional figure – a figure with two basic units of measure, usually length and width
		• Spatial visualization – creation and manipulation of mental representations of shapes
		• Decompose figures – to break a geometric figure into two or more smaller geometric figures
		• Decompose two-dimensional figures by cutting, dividing, or partitioning.
		  ◦ Such as cutting a square from a rectangle
		  ◦ Such as dividing a shape in half
		  ◦ Such as partitioning a rectangle into identical triangles
		• Resulting shapes equal or not equal
		• Decompose two-dimensional shapes using a

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		variety of concrete models and materials.
		
		Identify
		
		THE RESULTING GEOMETRIC PARTS OF A DECOMPOSED TWO-DIMENSIONAL SHAPE
		
		Including, but not limited to:
		
		• Two-dimensional figure – a figure with two basic units of measure, usually length and width
		• Name resulting geometric figures (e.g., a rectangle partitioned into smaller rectangles that may or may not be equal in size or shape; a rectangle partitioned into triangles that may or may not be equal in size or shape; etc.)
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Applying knowledge of two-dimensional shapes and three-dimensional solids, including exploration of early fraction concepts
		• TxCCRS:
		  ◦ III.A. Geometric Reasoning – Figures and their properties
		  ◦ IX. Communication and Representation

Measuring Attributes of Two-Dimensional and Three-Dimensional Objects		

Kindergarten	Grade 1	Grade 2
K.7 ***Geometry and measurement. The student applies mathematical process standards to directly compare measurable attributes. The student is expected to:***	*1.7* ***Geometry and measurement. The student applies mathematical process standards to select and use units to describe length and time. The student is expected to:***	*2.9* ***Geometry and measurement. The student applies mathematical process standards to select and use units to describe length, area, and time. The student is expected to:***

K.7A
 	
Give an example of a measurable attribute of a given object, including length, capacity, and weight.
 	
Give
 	
AN EXAMPLE OF A MEASURABLE ATTRIBUTE OF A GIVEN OBJECT, INCLUDING LENGTH, CAPACITY, AND WEIGHT
 	
Including, but not limited to:
 	
• Measurable attribute – a characteristic of an object that can be measured (length, capacity, weight)
  ◦ Length – the measurement attribute that describes how long something is from end to end
  • Height – how tall something is, such as a person, building, or tree
  • Distance – how far it is from one point to another
  ◦ Capacity – the measurement attribute that describes the maximum amount a container will hold
  ◦ Weight – the measurement attribute that describes how heavy something is
• Identify measurable attributes in a variety of objects
  ◦ Single measurable attributes of an object		

Kindergarten	Grade 1	Grade 2
◦ Multiple measurable attributes of an object Note(s): • Grade Level(s): ◦ Grade 1 will use measuring tools to measure the length of objects to reinforce the continuous nature of linear measurement. ◦ Grade 3 will determine liquid volume (capacity) or weight using appropriate units and tools. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Identifying and using attributes of two-dimensional shapes and three-dimensional solids • TxCCRS: ◦ IV.A. Measurement Reasoning – Measurement involving physical and natural attributes ◦ IX. Communication and Representation • X. Connections		
K.7B **Compare two objects with a common measurable attribute to see which object has more of/less of the attribute and describe the difference.** Compare TWO OBJECTS WITH A COMMON MEASURABLE ATTRIBUTE TO SEE WHICH OBJECT HAS MORE OF/LESS OF THE ATTRIBUTE		

Kindergarten	Grade 1	Grade 2

Including, but not limited to:
• Measurable attribute – a characteristic of an object that can be measured (length, capacity, weight)
  ◦ Length – the measurement attribute that describes how long something is from end to end
  • Height – how tall something is, such as a person, building, or tree
  • Distance – how far it is from one point to another
  ◦ Capacity – the measurement attribute that describes the maximum amount a container will hold
  ◦ Weight – the measurement attribute that describes how heavy something is
• Compare measurable attributes – to consider a measurable attribute of two objects to determine which object has more or less of the measurable attribute or if the objects have an equal amount of the measurable attribute
• Direct comparison – a comparison using the actual objects being compared, rather than comparing using a measuring tool
• Directly compare the length of two objects.
  ◦ Estimation prior to direct comparison
  ◦ Identification of the start point and endpoint of each object
  ◦ Common base to begin the direct comparison
  • Both objects lined up with an even start point
  ◦ Direct comparison of the endpoints of both objects
  ◦ Conservation of length – the length of an		

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object remains the same regardless of orientation
• Directly compare the capacity of two objects.
  ◦ Estimation prior to direct comparison
  ◦ Direct comparison of the capacity of each object
  • Fill one container with a pourable material, and then transfer the pourable material to the other container to compare their capacities.
  If the second container is not yet full, it has a larger capacity than the first container.
  If the second container overflows, it has a smaller capacity than the first container.
  ◦ Conservation of capacity – the capacity of an object remains the same regardless of orientation or the material used to fill it
• Directly compare the weight of two objects.
  ◦ Estimation prior to direct comparison
  ◦ Direct comparison of the weight of each object using a variety of tools
  • Heft – holding one object in each of your hands to predict and compare which object is heavier or lighter
  • Balance scale
  ◦ Place one item in each pan of a balance scale.
  The pan that moves lower indicates the heavier object.
  The pan that rises higher indicates the lighter object.
  If the pans remain balanced, the objects have equal weight.
  • Spring scale
  ◦ Place objects one at a time in the pan		

Kindergarten	Grade 1	Grade 2

of a spring scale.
The object that pulls the pan down the farthest indicates the heavier object.
• Conservation of weight – the weight of an object remains the same regardless of orientation or the rearrangement of the material
 	
Describe
 	
THE DIFFERENCE IN A COMMON MEASURABLE ATTRIBUTE OF TWO OBJECTS
 	
Including, but not limited to:
 	
• Measurable attribute – a characteristic of an object that can be measured (length, capacity, weight)
  ◦ Length – the measurement attribute that describes how long something is from end to end
  • Height – how tall something is, such as a person, building, or tree
  • Distance – how far it is from one point to another
  ◦ Capacity – the measurement attribute that describes the maximum amount a container will hold
  ◦ Weight – the measurement attribute that describes how heavy something is
• Appropriate language to describe comparison of measurable attributes in two objects
  ◦ Comparative language for length
  • Longer than, longest
  • Taller than, tallest
  • Farther than, farthest
  • Shorter than, shortest		

Kindergarten	Grade 1	Grade 2
• Same length as • Same height as • Same distance as • Equal in length • Equal in height • Equal in distance ○ Comparative language for capacity • Holds more than • Holds less than • Holds the same as • Holds an equal amount • Equal capacity as ○ Comparative language for weight • Heavier than • Lighter than • The same weight as • Equal weight as Note(s): • Grade Level(s): ○ Kindergarten introduces comparing measurable attributes of two objects. ○ Grade 1 will use measuring tools to measure the length of objects to reinforce the continuous nature of linear measurement. ○ Grade 3 will determine liquid volume (capacity) or weight using appropriate units and tools. ○ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ○ Identifying and using attributes of two-dimensional shapes and three-dimensional solids		

Kindergarten	Grade 1	Grade 2

• TxCCRS:
  ◦ IV.A. Measurement Reasoning – Measurement involving physical and natural attributes
  ◦ IX. Communication and Representation
  • X. Connections		

Measuring Length of Two-Dimensional and Three-Dimensional Objects		

K.7A
 	
Give an example of a measurable attribute of a given object, including length, capacity, and weight.
 	
Give
 	
AN EXAMPLE OF A MEASURABLE ATTRIBUTE OF A GIVEN OBJECT, INCLUDING LENGTH, CAPACITY, AND WEIGHT
 	
Including, but not limited to:
 	
• Measurable attribute – a characteristic of an object that can be measured (length, capacity, weight)
  ◦ Length – the measurement attribute that describes how long something is from end to end
  • Height – how tall something is, such as a person, building, or tree
  • Distance – how far it is from one point to another
  ◦ Capacity – the measurement attribute that describes the maximum amount a container will hold
  ◦ Weight – the measurement attribute that
	1.7A
	
	Use measuring tools to measure the length of objects to reinforce the continuous nature of linear measurement.
	
	Use
	
	MEASURING TOOLS TO MEASURE THE LENGTH OF OBJECTS TO REINFORCE THE CONTINUOUS NATURE OF LINEAR MEASUREMENT
	
	Including, but not limited to:
	
	• Length – the measurement attribute that describes a continuous distance from end to end
	• Linear measurement – the measurement of length along a continuous line or curve
	  ◦ Starting point and ending point defined
	  ◦ Continuous line may bend or curve, but not break
	  ◦ Non-standard measuring tools to reinforce the continuous nature of linear measurement
	  • Ribbon, yarn, string, adding machine tape, etc.
		2.9D
		
		Determine the length of an object to the nearest marked unit using rulers, yardsticks, meter sticks, or measuring tapes.
		
		Determine
		
		THE LENGTH OF AN OBJECT TO THE NEAREST MARKED UNIT USING RULERS, YARDSTICKS, METER STICKS, OR MEASURING TAPES
		
		Including, but not limited to:
		
		• Length – the measurement attribute that describes a continuous distance from end to end
		• Unit of length – the object or unit used to measure length
		• Linear measurement – the measurement of length along a continuous line or curve
		• Standard linear measurement tools
		  ◦ Typically used customary linear measurement tools
		  • Ruler with inches, yardstick, measuring tape
		  ◦ Typically used metric linear measurement

Kindergarten	Grade 1	Grade 2

describes how heavy something is
• Identify measurable attributes in a variety of objects
  ◦ Single measurable attributes of an object
  ◦ Multiple measurable attributes of an object
 	
Note(s):
 	
• Grade Level(s):
  ◦ Grade 1 will use measuring tools to measure the length of objects to reinforce the continuous nature of linear measurement.
  ◦ Grade 3 will determine liquid volume (capacity) or weight using appropriate units and tools.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Identifying and using attributes of two-dimensional shapes and three-dimensional solids
• TxCCRS:
  ◦ IV.A. Measurement Reasoning – Measurement involving physical and natural attributes
  ◦ IX. Communication and Representation
  • X. Connections
	Note(s):
	
	• Grade Level(s):
	  ◦ Kindergarten gave an example of a measurable attribute of a given object, including length, capacity, and weight.
	  ◦ Grade 2 will determine the length of an object to the nearest marked unit using rulers, yardsticks, meter sticks, or measuring tapes.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Developing the understanding of length
	• TxCCRS:
	  ◦ IV.A. Measurement Reasoning – Measurement involving physical and natural attributes
	  ◦ IX. Communication and Representation
		tools
		  • Ruler with centimeters, meter stick, measuring tape
		• Standard units of length
		  ◦ Typically used customary units of length
		  • Inches, feet, yards
		  ◦ Typically used metric units of length
		  • Centimeters, meters
		• Relationship between finding the length of objects using concrete models for standard units of length to whole unit measurements on a customary ruler, yardstick, or measuring tape
		• Relationship between whole numbers as distances from zero on a number line to whole unit measurements as distances from zero on a customary ruler, yardstick, or measuring tape
		• Determine length to the nearest whole unit.
		  ◦ Starting point and ending point defined
		  ◦ Edge of measuring tool placed along the distance being measured, aligned with the start point of the distance being measured
		  ◦ Equal sized units of length counted to the nearest whole unit
		  • Last unit is not counted if the end point falls less than half-way along the unit.
		  • Last unit is counted if the end point falls half-way, or more than half-way, along the unit.
		  ◦ Measuring a specific length using a starting point other than zero on a ruler, yardstick, or measuring tape
		  • Distance from zero to first marked increment not counted
		  • Length determined by number of whole

Kindergarten	Grade 1	Grade 2

		units between starting point and ending point
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 1 used non-standard measuring tools to measure the length of objects to reinforce the continuous nature of linear measurement.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Measuring length
		• TxCCRS:
		  ◦ IV.A Measurement Reasoning – Measurement involving physical and natural attributes
		  ◦ IX. Communication and Representation

	1.7B **Illustrate that the length of an object is the number of same-size units of length that, when laid end-to-end with no gaps or overlaps, reach from one end of the object to the other.** Illustrate THAT THE LENGTH OF AN OBJECT IS THE NUMBER OF SAME-SIZE UNITS OF LENGTH THAT, WHEN LAID END-TO-END WITH NO GAPS OR OVERLAPS, REACH FROM ONE END OF THE OBJECT TO THE OTHER	**2.9A** **Find the length of objects using concrete models for standard units of length.** Find THE LENGTH OF OBJECTS USING CONCRETE MODELS FOR STANDARD UNITS OF LENGTH Including, but not limited to: • Length – the measurement attribute that describes a continuous distance from end to end

Kindergarten	Grade 1	Grade 2

	Including, but not limited to:
	• Length – the measurement attribute that describes a continuous distance from end to end
	• Unit of length – the object or unit used to measure length
	  ◦ Non-standard units of length
	  • Color tiles, linking cubes, paper clips, measuring rods, toothpicks, craft sticks, etc.
	• Linear measurement – the measurement of length along a continuous line or curve
	  ◦ Starting point and ending point defined
	  ◦ Equal sized units of length placed end to end along the distance being measured
	  ◦ Equal sized units of length iterated (repeated) with no gaps or overlays
	  ◦ Length measured using one-dimensional units of length (e.g., if measuring with a color tile, measure with the edge, not the area of the color tile; if measuring with a paper clip, measure with either the length or width of the paper clip, not a combination of lengths and widths; etc.)
	  ◦ Equal sized units of length counted to the nearest whole unit
	  • Last unit is not counted if the end point falls less than half-way along the unit.
	  • Last unit is counted if the end point falls half-way, or more than half-way, along the unit.
	• Unit of length selected for efficiency
	  ◦ Smaller unit of length to measure shorter objects or distances
	  ◦ Larger unit of length to measure longer
		• Unit of length – the object or unit used to measure length
		• Concrete models that represent standard units of length
		  ◦ Typically used customary units of length
		  • Inch represented by a color tile, etc.
		  • Foot represented by a 12 inch ruler as a single unit, etc.
		  • Yard represented by a yardstick as a single unit, etc.
		  ◦ Typically used metric units of length
		  • Centimeter represented by a base-10 unit cube, etc.
		  • Decimeter represented by a base-10 long, orange Cuisenaire rod, etc.
		  • Meter represented by a meter stick as a single unit, etc.
		• Length described to the nearest whole unit using a number and a unit
		• Linear measurement – the measurement of length along a continuous line or curve
		  ◦ Starting point and ending point defined
		  ◦ Equal sized units of length placed end to end along the distance being measured
		  ◦ Equal sized units of length iterated (repeated) with no gaps or overlays
		  ◦ Length measured using one-dimensional units of length (e.g., if measuring with a color tile, measure with the edge, not the area of the color tile; if measuring with a color tile, measure with the same dimension of the color tile; etc.)
		  ◦ Equal sized units of length counted to the nearest whole unit
		  • Last unit is not counted if the end point falls less than half-way along the unit.

Kindergarten	Grade 1	Grade 2

	objects or distances
	• Unit of length selected for precision
	  ◦ Smaller unit of length results in a more precise measurement when measuring to the whole unit.
	  ◦ Larger unit of length results in a less precise measurement when measuring to the whole unit.
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Grade 1 introduces illustrating that the length of an object is the number of same-size units of length that, when laid end-to-end with no gaps or overlaps, reach from one end of the object to the other.
	  ◦ Grade 2 will find the length of objects using concrete models for standard units of length.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Developing the understanding of length
	• TxCCRS:
	  ◦ IV.A. Measurement Reasoning – Measurement involving physical and natural attributes
	  ◦ IX. Communication and Representation
		• Last unit is counted if the end point falls half-way, or more than half-way, along the unit.
		• Unit of length selected for efficiency
		  ◦ Smaller unit of length to measure shorter objects or distances
		  ◦ Larger unit of length to measure longer objects or distances
		• Unit of length selected for precision
		  ◦ Smaller unit of length results in a more precise measurement when measuring to the whole unit
		  ◦ Larger unit of length results in a less precise measurement when measuring to the whole unit
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 1 illustrated that the length of an object is the number of same-size units of length that, when laid end-to-end with no gaps or overlaps, reach from one end of the object to the other.
		  ◦ Grade 1 described a length to the nearest whole unit using a number and a unit.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Measuring length
		• TxCCRS:
		  ◦ IV.A Measurement Reasoning – Measurement involving physical and natural attributes
		  ◦ IX. Communication and Representation

	1.7D **Describe a length to the nearest whole unit using a number and a unit.**	

Kindergarten	Grade 1	Grade 2

	Describe
	
	A LENGTH TO THE NEAREST WHOLE UNIT USING A NUMBER AND A UNIT
	
	Including, but not limited to:
	
	• Length – the measurement attribute that describes a continuous distance from end to end
	• Unit of length – the object or unit used to measure length
	  ◦ Non-standard units of length
	  • Color tiles, linking cubes, paper clips, measuring rods, toothpicks, craft sticks, etc.
	• Measurement named using a number and a unit
	  ◦ Equal sized units of length counted to the nearest whole unit
	  • Last unit is not counted if the end point falls less than half-way along the unit.
	  • Last unit is counted if the end point falls half-way, or more than half-way, along the unit.
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Grade 2 will find the length of objects using concrete models for standard units of length.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Developing the understanding of length
	• TxCCRS:	

Kindergarten	Grade 1	Grade 2
	◦ IV.A. Measurement Reasoning – Measurement involving physical and natural attributes ◦ IX. Communication and Representation	
	1.7C **Measure the same object/distance with units of two different lengths and describe how and why the measurements differ.** Measure THE SAME OBJECT/DISTANCE WITH UNITS OF TWO DIFFERENT LENGTHS Including, but not limited to: • Length – the measurement attribute that describes a continuous distance from end to end • Unit of length – the object or unit used to measure length ◦ Non-standard units of length • Color tiles, linking cubes, paper clips, measuring rods, toothpicks, craft sticks, etc. ◦ Equal sized units of length counted to the nearest whole unit • Last unit is not counted if the end point falls less than half-way along the unit. • Last unit is counted if the end point falls half-way, or more than half-way, along the unit. • Linear measurement – the measurement of length along a continuous line or curve ◦ Starting point and ending point defined	**2.9B** **Describe the inverse relationship between the size of the unit and the number of units needed to equal the length of an object.** Describe THE INVERSE RELATIONSHIP BETWEEN THE SIZE OF THE UNIT AND THE NUMBER OF UNITS NEEDED TO EQUAL THE LENGTH OF AN OBJECT Including, but not limited to: • Length – the measurement attribute that describes a continuous distance from end to end • Unit of length – the object or unit used to measure length • Concrete models that represent standard units of length ◦ Typically used customary units of length • Inch represented by a color tile, etc. • Foot represented by a 12 inch ruler as a single unit, etc. • Yard represented by a yardstick as a single unit, etc. ◦ Typically used metric units of length • Centimeter represented by a base-10 unit cube, etc. • Decimeter represented by a base-10 long, orange Cuisenaire rod, etc.

Kindergarten	Grade 1	Grade 2
	◦ Equal sized units of length placed end to end along the distance being measured ◦ Equal sized units of length iterated (repeated) with no gaps or overlays ◦ Length measured using one-dimensional units of length (e.g., if measuring with a color tile, measure with the edge, not the area of the color tile; if measuring with a paper clip, measure with either the length or width of the paper clip, not a combination of lengths and widths; etc.) ◦ Equal sized units of length counted to the nearest whole unit • Last unit is not counted if the end point falls less than half-way along the unit. • Last unit is counted if the end point falls half-way, or more than half-way, along the unit. • Measure the same object with different sized units of length. Describe HOW AND WHY THE MEASUREMENTS OF THE SAME OBJECT/DISTANCE MEASURED WITH UNITS OF TWO DIFFERENT LENGTHS DIFFER Including, but not limited to: • Length – the measurement attribute that describes a continuous distance from end to end • Unit of length – the object or unit used to measure length ◦ Non-standard units of length • Color tiles, linking cubes, paper clips, measuring rods, toothpicks, craft sticks,	• Meter represented by a meter stick as a single unit, etc. • Inverse relationship between the size of the unit and the number of units needed ◦ Measure the same object with different sized units of length. • The shorter the unit of length, the more units needed • The longer the unit of length, the fewer units needed Note(s): • Grade Level(s): ◦ Grade 1 measured the same object/distance with units of two different lengths and described how and why the measurements differ. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Measuring length • TxCCRS: ◦ IV.A Measurement Reasoning – Measurement involving physical and natural attributes ◦ IX. Communication and Representation

Kindergarten	Grade 1	Grade 2

	etc.
	• Compare the measurements of the same object with different sized units of length.
	  ◦ Description of how the measurements differ
	  • Measurements described using a number and unit label
	  ◦ Description of why the measurements differ
	  • The shorter the unit of length, the more units counted
	  • The longer the unit of length, the fewer units counted
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Grade 1 introduces measuring the same object/distance with units of two different lengths and describing how and why the measurements differ.
	  ◦ Grade 2 will describe the inverse relationship between the size of the unit and the number of units needed to equal the length of an object.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Developing the understanding of length
	• TxCCRS:
	  ◦ IV.A. Measurement Reasoning – Measurement involving physical and natural attributes
	  ◦ IX. Communication and Representation	

		2.9E

Kindergarten	Grade 1	Grade 2

		Determine a solution to a problem involving length, including estimating lengths.
		
		Determine
		
		A SOLUTION TO A PROBLEM INVOLVING LENGTH, INCLUDING ESTIMATING LENGTHS
		
		Including, but not limited to:
		
		• Length – the measurement attribute that describes a continuous distance from end to end
		• Mathematical and real-world problem situations
		  ◦ Recognition of attributes of length embedded in mathematical and real-world problem situations (e.g., distance traveled from one place to another, length of an object, perimeter, etc.)
		  ◦ One-step or multi-step problems
		  • Measurement of one or more distances/lengths
		  ◦ Multiple operations
		  • Addition and/or subtraction of whole unit measurements
		  ◦ Solutions recorded to the nearest whole unit with a number and a unit label
		• Estimation – reasoning to determine an approximate value
		  ◦ Estimation prior to solving problem
		  ◦ Estimation compared to actual measurement
		  ◦ Benchmarks for units of length
		  • Finger joint (thumb works best) = approximately 1 inch
		  • Tip of your finger = approximately 1

Kindergarten	Grade 1	Grade 2
		centimeter • Span of your palm = approximately 1 decimeter • Elbow to wrist = approximately 1 foot • Nose to fingertip of extended arm = approximately 1 yard • Nose to fingertip of extended arm with head turned away = approximately 1 meter ◦ Language related to estimation • About, a little less than, a little more than, almost, nearly, approximately, etc. Note(s): • Grade Level(s): ◦ Grade 3 will determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Measuring length • TxCCRS: ◦ IV.A Measurement Reasoning – Measurement involving physical and natural attributes ◦ VIII. Problem Solving and Reasoning ◦ IX. Communication and Representation

Kindergarten	Grade 1	Grade 2
	Measuring Time	
	1.7 ***Geometry and measurement. The student applies mathematical process standards to select and use units to describe length and time. The student is expected to:***	***2.9*** ***Geometry and measurement. The student applies mathematical process standards to select and use units to describe length, area, and time. The student is expected to:***

	1.7E
	
	Tell time to the hour and half hour using analog and digital clocks.
	
	Tell
	
	TIME TO THE HOUR AND HALF HOUR USING ANALOG AND DIGITAL CLOCKS
	
	Including, but not limited to:
	
	• Clocks used to describe the measurement attribute of time
	• Analog clock
	  ◦ A circular number line representing 12 one-hour increments, labeled 1 – 12
	  • Numbers increase in a clockwise direction (from left to right when starting at the top) around the circle.
	  • Each one-hour increment also represents 5 one-minute increments that are not labeled with numbers.
	  ◦ One full rotation of the face of the clock
	  • One full rotation of the hour hand represents 12 hours.
	  • One full rotation of the minute hand
		2.9G
		
		Read and write time to the nearest one-minute increment using analog and digital clocks and distinguish between a.m. and p.m.
		
		Read, Write
		
		TIME TO THE NEAREST ONE-MINUTE INCREMENT USING ANALOG AND DIGITAL CLOCKS
		
		Including, but not limited to:
		
		• Clocks used to describe the measurement attribute of time
		• Analog clock
		  ◦ A circular number line representing 12 one-hour increments, labeled 1 – 12
		  • Numbers increase in a clockwise direction (from left to right when starting at the top) around the circle.
		  • Each one-hour increment also represents 5 one-minute increments that are not labeled with numbers.
		  ◦ One full rotation of the face of the clock
		  • One full rotation of the hour hand

Kindergarten	Grade 1	Grade 2

	represents 60 minutes.
	    - Skip counting by 5 from the 12 all the way around to the 12 equals 60 minutes.
	  - Hour hand
	    - Shorter than the minute hand
	    - Moves slower than the minute hand
	      - One full rotation of the minute hand moves the hour hand to the next labeled hour.
	    - Hour is read as the labeled number when hour hand falls on a marked increment.
	    - Hour is read as the labeled number just passed when hour hand falls between marked increments, regardless of which increment it is closest to.
	  - Minute hand
	    - Longer than the hour hand
	    - Moves faster than the hour hand
	      - One full rotation of the minute hand moves the hour hand to the next labeled hour.
	  - Time to the hour
	    - Minute hand on the 12
	    - Hour hand names the hour
	    - Read, written, and stated in words as o'clock
	    - Read and written numerically as :00
	  - Time to the half-hour
	    - Minute hand on the 6
	    - Hour hand names the hour
	    - Relationship between half of a circle and half of an hour on an analog clock
	      - Skip counting by 5 from the 12 to the 6 equals 30 minutes and from the 6 to the 12 equals 30 minutes.
		represents 12 hours.
		    - One full rotation of the minute hand represents 60 minutes.
		      - Skip counting by 5 from the 12 all the way around to the 12 equals 60 minutes.
		    - One full rotation of the second hand represents 60 seconds.
		  - Hour hand
		    - Shorter than the minute hand and second hand
		    - Moves slower than the minute hand and second hand
		      - One full rotation of the minute hand moves the hour hand to the next labeled hour.
		  - Minute hand
		    - Longer than the hour hand and usually about the same length as, but thicker than, the second hand
		    - Moves faster than the hour hand but slower than the second hand
		      - One full rotation of the minute hand moves the hour hand to the next labeled hour.
		  - Second hand
		    - Longer than the hour hand and usually about the same length as, but thinner than, the minute hand
		    - Moves faster than the hour hand and the minute hand
		      - One full rotation of the second hand moves the minute hand to the next minute increment.
		    - Not all analog clocks include a second hand

Kindergarten	Grade 1	Grade 2

	• Time to the half-hour approximated by the location of the minute hand
	  ◦ Minute hand between the 12 and 3, time is read as closer to a full hour or o'clock.
	  ◦ Minute hand between the 3 and 9, time is read as closer to a half-hour or 30 minutes.
	  ◦ Minute hand between the 9 and 12, time is read as closer to the next full hour or o'clock.
	• Digital clock
	  ◦ Colon used to separate the hour from the minutes
	  ◦ Hour (1 – 12) displayed to the left of the colon
	  • Hour increases by 1 for every 60 minutes
	  ◦ Minutes (00 – 59) displayed to the right of the colon
	  • One minute after 59 displayed as :00
	  ◦ Time to the hour
	  • 00 minutes displayed
	  • Hour displayed names the hour
	  • Read, written, and stated in words as o'clock
	  • Read and written numerically as :00
	  ◦ Time to the half-hour
	  • 30 minutes displayed
	  • Hour displayed names the hour
	  • Relationship between half of 60 in a number line and half of an hour on an digital clock
	• Relationship between time on an analog clock and the same time on a digital clock
	
	Note(s):
		◦ Read and write time to the minute
		  • Hour determined by the location of the hour hand
		  ◦ Hour determined by the labeled number when hour hand falls on a marked increment
		  ◦ Hour determined by the labeled number just passed when hour hand falls between marked increments, regardless of which increment it is closest to
		  • Minute determined by the location of the minute hand
		  ◦ Skip count by 5 for each numbered increment, and then count on by 1 for each unmarked minute increment.
		• Digital clock
		  ◦ Colon used to separate the hour from the minutes
		  ◦ Hour (1 – 12) displayed to the left of the colon
		  • Hour increases by 1 for every 60 minutes
		  ◦ Minutes (00 – 59) displayed to the right of the colon
		  • Minute increases by 1 for every 60 seconds
		  • One minute after 59 is displayed as :00
		  ◦ Read and write time to the minute as displayed.
		• Parts of hours represented with fraction names
		  ◦ 15 minutes read and written as "a quarter past" or "a quarter after"
		  30 minutes read and written as "half past"
		  45 minutes read and written as "a quarter 'til" or "a quarter to"

Kindergarten	Grade 1	Grade 2

	• Grade Level(s):
	  ◦ Grade 1 introduces telling time to the hour and half hour using analog and digital clocks.
	  ◦ Grade 1 introduces partitioning two-dimensional figures into two equal parts and identifying examples and non-examples of halves.
	  ◦ Grade 2 will read and write time to the nearest one-minute increment using analog and digital clocks and distinguish between a.m. and p.m.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Grade Level Connections (reinforces previous learning and/or provides development for future learning)
	• TxCCRS:
	  ◦ IV.A. Measurement Reasoning – Measurement involving physical and natural attributes
	  ◦ IX. Communication and Representation
	  ◦ X. Connections
		• Match time on an analog clock and a digital clock.
		
		Distinguish
		
		BETWEEN a.m. AND p.m.
		
		Including, but not limited to:
		
		• One day equals 24 hours.
		• One 24 hour day is divided into two 12 hour time periods.
		  ◦ a.m. – the abbreviation for ante meridiem or ante meridian, meaning before noon or mid-day
		  • Begins at midnight (12:00 a.m.), ends one minute before noon (11:59 a.m.)
		  • Possible abbreviations: a.m.; am; A.M.; AM
		  ◦ p.m. – the abbreviation for post meridiem or post meridian, meaning after noon or mid-day
		  • Begins at noon (12:00 p.m.), ends one minute before midnight (11:59 p.m.)
		  • Possible abbreviations: p.m.; pm; P.M.; PM
		• One full rotation of hours on the clock equals 12 hours.
		  ◦ One full rotation for a.m. and one full rotation for p.m.
		• Language related to 12:00
		  ◦ 12:00 p.m. is noon or mid-day and occurs in the daylight.
		  ◦ 12:00 a.m. is midnight and occurs in the dark.
		• Language related to a.m.
		  ◦ Morning, sunrise, dawn, daybreak, etc.

Kindergarten	Grade 1	Grade 2

		• Language related to p.m.
		  ◦ Afternoon, evening, dusk, sunset, etc.
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 1 told time to the hour and half hour using analog and digital clocks.
		  ◦ Grade 3 will 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.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Grade Level Connections (reinforces previous learning and/or provides development for future learning)
		• TxCCRS:
		  ◦ IX. Communication and Representation
		  ◦ X. Connections

	Measuring Area and Volume	
	1.6 ***Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:***	***2.9*** ***Geometry and measurement. The student applies mathematical process standards to select and use units to describe length, area, and time. The student is expected to:***
		2.9F **Use concrete models of square units to find the area of**

Kindergarten	Grade 1	Grade 2

		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.
		
		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
		
		Including, but not limited to:
		
		• Area – the measurement attribute that describes the number of square units a figure or region covers
		• Square unit – an object or unit, shaped like a square, used to measure area
		• Concrete models of non-standard square units
		  ◦ Flat surface of color tiles, unit cubes, base-10 flats, square sticky notes, etc.
		• Area of a rectangle (including squares as special rectangles)
		  ◦ Boundary of rectangle defined
		  ◦ Equal sized square units iterated (repeated) in rows and columns inside the boundary of the rectangle being measured
		  ◦ Equal sized square units iterated (repeated) in rows and columns with no gaps or overlays
		  ◦ Area measured using two-dimensional square units (e.g., if measuring with a color tile, measure with the square surface of the

Kindergarten	Grade 1	Grade 2
		color tile, not the side of the color tile, etc.) ◦ Equal sized square units counted to the nearest whole unit • Last square unit in each row/column is not counted if the boundary of the rectangle falls less than half-way through the square unit(s). • Last square unit in each row/column is counted if the boundary of the rectangle falls more than half-way through the square unit(s). ◦ Measurement determined by counting the number of whole units within the defined boundary • Determined by counting each whole unit individually • Determined by counting length of one row and it's iteration (e.g., skip counting the number of units in each row to the last row such as 3 rows of 5 square units would be 5, 10, 15 or using repeated addition 5 + 5 + 5 = 15, etc.) ◦ Measurement described using a number and the label square unit(s) • Appropriate square unit selected ◦ Square unit selected for efficiency • Smaller square unit to measure smaller rectangles • Larger square unit to measure larger rectangles ◦ Square unit selected for precision • Smaller square unit results in a more precise measurement when measuring to the whole unit • Larger square unit results in a less precise measurement when measuring to

Kindergarten	Grade 1	Grade 2

		the whole unit
		• Inverse relationship between the size of the square unit and the number of square units needed
		  ◦ Measure a rectangle with a small square unit and then measure the same rectangle with a large square unit
		  • The smaller the square unit, the more square units needed
		  • The larger the square unit, the fewer square units needed
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 2 introduces using 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.
		  ◦ Grade 3 will determine the area of rectangles with whole number side lengths in problems using multiplication related to the number of rows times the number of unit squares in each row.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Grade Level Connections (reinforces previous learning and/or provides development for future learning)
		• TxCCRS:
		  ◦ IV.A Measurement Reasoning – Measurement involving physical and natural attributes

Kindergarten	Grade 1	Grade 2
		◦ IX. Communication and Representation
	1.6G **Partition two-dimensional figures into two and four fair shares or equal parts and describe the parts using words.** Partition TWO-DIMENSIONAL FIGURES INTO TWO AND FOUR FAIR SHARES OR EQUAL PARTS Including, but not limited to: • Two-dimensional figure – a flat figure • Spatial visualization – creation and manipulation of mental representations of shapes • Partition figures – to separate a geometric figure into two or more smaller geometric figures • Partition two-dimensional shapes using a variety of concrete models and materials. • Two-dimensional figures partitioned into two and four fair shares or equal parts ◦ Resulting parts equal in size and shape Describe THE FAIR SHARES OR EQUAL PARTS OF TWO-DIMENSIONAL FIGURES USING WORDS Including, but not limited to: • Appropriate oral and written mathematical	

Kindergarten	Grade 1	Grade 2

	language
	• Two equal parts or fair shares
	  ◦ Halves
	  ◦ Half of
	  ◦ One out of two equal parts
	• Four equal parts or fair shares
	  ◦ Fourths
	  ◦ Fourth of
	  ◦ Quarters
	  ◦ Quarter of
	  ◦ One out of four equal parts
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Grade 1 introduces partitioning two-dimensional figures into two and four fair shares or equal parts and describing the parts using words.
	  ◦ Grade 2 will partition objects into equal parts and name the parts, including halves, fourths, and eighths, using words.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Analyzing attributes of two-dimensional shapes and three-dimensional solids
	• TxCCRS:
	  ◦ III.A. Geometric Reasoning – Figures and their properties
	  ◦ IX. Communication and Representation	

	1.6H **Identify examples and non-examples of halves and**	

Kindergarten	Grade 1	Grade 2

	fourths.
	
	Identify
	
	EXAMPLES AND NON-EXAMPLES OF HALVES AND FOURTHS
	
	Including, but not limited to:
	
	• Halves – two equal parts of a partitioned figure
	  ◦ Examples and non-examples of halves
	• Fourths – four equal parts of a partitioned figure
	  ◦ Examples and non-examples of fourths
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Grade 1 introduces identifying examples and non-examples of halves and fourths.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Grade Level Connections (reinforces previous learning and/or provides development for future learning)
	• TxCCRS:
	  ◦ III.A. Geometric Reasoning – Figures and their properties
	  ◦ IX. Communication and Representation	

Kindergarten	Grade 1	Grade 2
		Measuring Distance on a Number Line
		2.9 ***Geometry and measurement. The student applies mathematical process standards to select and use units to describe length, area, and time. The student is expected to:***

		2.9C
		
		Represent whole numbers as distances from any given location on a number line.
		
		Represent
		
		WHOLE NUMBERS AS DISTANCES FROM ANY GIVEN LOCATION ON A NUMBER LINE
		
		Including, but not limited to:
		
		• Characteristics of a number line
		  ◦ A number line begins as a line with predetermined intervals (or tick marks) with positions/numbers labeled.
		  • A minimum of two positions/numbers should be labeled.
		  ◦ Numbers on a number line represent the distance from zero.
		  ◦ The distance between the tick marks is counted rather than the tick marks themselves.
		  ◦ The placement of the labeled positions/numbers on a number line determines the scale of the number line.

Kindergarten	Grade 1	Grade 2
		• Intervals between position/numbers are proportional. ○ When reasoning on a number line, the position of zero may or may not be placed. ○ When working with larger numbers, a number line without the constraint of distance from zero allows the ability to "zoom-in" on the relevant section of the number line. ○ Number lines extend infinitely in both directions (arrows indicate the number line continues infinitely). ○ Numbers increase from left to right on a horizontal number line and from bottom to top on a vertical number line. • Points to the left of a specified point on a horizontal number line are less than points to the right. • Points to the right of a specified point on a horizontal number line are greater than points to the left. • Points below a specified point on a vertical number line are less than points above. • Points above a specified point on a vertical number line are greater than points below. • Whole numbers represented as equally spaced lengths or distances from zero on a number line ○ Relationship between a whole number represented using a strip diagram to a whole number represented on a number line ○ Number lines beginning with a number other than zero • Distance from zero to first marked

Kindergarten	Grade 1	Grade 2

		increment is assumed even when not visible on the number line.
		• Relationship between whole numbers as distances from zero on a number line to whole unit measurements as distances from zero on a customary ruler, yardstick, or measuring tape
		  ◦ Measuring a specific length using a distance other than zero on a ruler, yardstick, or measuring tape
		  • Distance from zero to first marked increment not counted
		  • Length determined by number of whole units between starting point and ending point
		• Relationship between distances from zero on a number line, distances from zero on the scale of a bar graph, and heights of the bars within the graph
		  • Bar graph – a graphical representation to organize data that uses solid bars that do not touch each other to show the frequency (number of times) that each category occurs
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 3 will represent fractions of halves, fourths, and eighths as distances from zero on a number line.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Measuring length
		• TxCCRS:

Kindergarten	Grade 1	Grade 2
		◦ IV.A Measurement Reasoning – Measurement involving physical and natural attributes ◦ IX. Communication and Representation
Representing Data		
K.8 ***Data analysis. The student applies mathematical process standards to collect and organize data to make it useful for interpreting information. The student is expected to:***	***1.8*** ***Data analysis. The student applies mathematical process standards to organize data to make it useful for interpreting information and solving problems. The student is expected to:***	***2.10*** ***Data analysis. The student applies mathematical process standards to organize data to make it useful for interpreting information and solving problems. The student is expected to:***
K.8A **Collect, sort, and organize data into two or three categories.** Collect, Sort, Organize DATA INTO TWO OR THREE CATEGORIES Including, but not limited to: • Data – information that is collected about people, events, or objects ◦ Categorical data – data that represents the attributes of a group of people, events, or objects • Categorical data may represent numbers or ranges of numbers. • Data collected in the form of responses to a question ◦ Survey – to ask a group of people a question in order to collect information	**1.8A** **Collect, sort, and organize data in up to three categories using models/representations such as tally marks or T-charts.** Collect, Sort, Organize DATA IN UP TO THREE CATEGORIES USING MODELS/REPRESENTATIONS Including, but not limited to: • Data – information that is collected about people, events, or objects ◦ Categorical data – data that represents the attributes of a group of people, events, or objects • Categorical data may represent numbers or ranges of numbers. • Data collected in the form of responses to a question	

Kindergarten	Grade 1	Grade 2

about their opinions or answers
  - Common characteristics in a collection of objects
- Data sorted in two or three categories
  - Data counts limited to comparing 20 units per category
  - Data sorted in a variety of ways
- Data organized and represented in a variety of ways
  - Data organized using T-charts, sorting mats, etc.
  - Data represented by real-world objects, pictures, drawings, or tally marks
    - Each object, picture, drawing, or tally mark represents one unit of data
 	
Note(s):
 	
- Grade Level(s):
  - Grade 1 will collect, sort, and organize data in up to three categories using models/representations such as tally marks or T-charts.
  - Various mathematical process standards will be applied to this student expectation as appropriate.
- TxRCFP:
  - Grade Level Connections (reinforces previous learning and/or provides development for future learning)
- TxCCRS:
  - IX. Communication and Representation
  - X. Connections
	- Survey – to ask a group of people a question in order to collect information about their opinions or answers
	  - Common characteristics in a collection of objects
	- Data sorted in up to three categories
	  - Data sorted in a variety of ways
	- Data organized and represented in a variety of ways
	  - Data organized using T-charts, sorting mats, etc.
	  - Data represented by real-world objects, pictures, drawings, or tally marks
	    - Each object, picture, drawing, or tally mark represents one unit of data.
	
	Note(s):
	
	- Grade Level(s):
	  - Kindergarten collected, sorted, and organized data into two or three categories.
	  - Various mathematical process standards will be applied to this student expectation as appropriate.
	- TxRCFP:
	  - Developing an understanding of place value
	- TxCCRS:
	  - IX. Communication and Representation
	  - X. Connections	

		2.10A

Kindergarten	Grade 1	Grade 2

		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.
		
		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
		
		Including, but not limited to:
		
		• Graph – a visual representation of the relationships between data collected
		  ◦ Organization of data used to interpret data, draw conclusions, and make comparisons
		• Bar graph – a graphical representation to organize data that uses solid bars that do not touch each other to show the frequency (number of times) that each category occurs
		  ◦ Length of the bar in a bar graph represents the number of data points for a given category.
		  • Scale of the axis may be intervals of one or more, and scale intervals are proportionally displayed.
		  • Length of the bar represents the distance from zero on the scale of the axis.
		  ◦ The scale of the axis is a number line.
		  • Value of the data represented by the bar is determined by reading the number associated with its length (distance from zero) on the axis scale.
		• Pictograph – a graphical representation to organize data that uses a picture or symbol, where each picture or symbol may represent

Kindergarten	Grade 1	Grade 2
		one or more than one unit of data, to show the frequency (number of times) that each category occurs ◦ Number of pictures or symbols in a pictograph represents the number of data points for a given category. • A key is used to identify the value of each picture or symbol. • Value of each picture or symbol may be one or more. • Partial symbols represent the fractional value of the whole picture or whole symbol. • Value of the data in each category is determined by the total value of the pictures or symbols in that category. Note(s): • Grade Level(s): ◦ Grade 2 introduces bar graphs and pictographs. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing proficiency in the use of place value within the base-10 numeration system • TxCCRS: • IX. Communication and Representation
K.8B **Use data to create real-object and picture graphs.** Use	**1.8B** **Use data to create picture and bar-type graphs.** Use	**2.10B** **Organize a collection of data with up to four categories using pictographs and bar graphs with intervals of one or more.**

Kindergarten	Grade 1	Grade 2

DATA
 	
Including, but not limited to:
 	
• Data – information that is collected about people, events, or objects
  ◦ Data counts limited to 20 units per category
  ◦ Categorical data – data that represents the attributes of a group of people, events, or objects
  • Categorical data may represent numbers or ranges of numbers.
• Data collected in the form of responses to a question
  ◦ Survey – to ask a group of people a question in order to collect information about their opinions or answers
  ◦ Common characteristics in a collection of objects
 	
To Create
 	
REAL-OBJECT AND PICTURE GRAPHS
	DATA
	
	Including, but not limited to:
	
	• Data – information that is collected about people, events, or objects
	  ◦ Categorical data – data that represents the attributes of a group of people, events, or objects
	  • Categorical data may represent numbers or ranges of numbers.
	• Data collected in the form of responses to a question with up to three categories
	  ◦ Survey – to ask a group of people a question in order to collect information about their opinions or answers
	  ◦ Common characteristics in a collection of objects sorted into up to three categories
	
	To Create
	
	PICTURE AND BAR-TYPE GRAPHS
	
	Including, but not limited to:
		Organize
		
		A COLLECTION OF DATA WITH UP TO FOUR CATEGORIES USING PICTOGRAPHS AND BAR GRAPHS WITH INTERVALS OF ONE OR MORE
		
		Including, but not limited to:
		
		• Graph – a visual representation of the relationships between data collected
		  ◦ Organization of data used to interpret data, draw conclusions, and make comparisons
		• Data – information that is collected about people, events, or objects
		  ◦ Categorical data – data that represents the attributes of a group of people, events, or objects
		  • Categorical data may represent numbers or ranges of numbers.
		• Data organized into up to four categories
		• Pictograph – a graphical representation to organize data that uses a picture or symbol, where each picture or symbol may represent

Kindergarten	Grade 1	Grade 2

Including, but not limited to:
• Graph – a visual representation of the relationships between data collected
  ◦ Organization of data used to interpret data, draw conclusions, and make comparisons
• Real-object graph – a graphical representation to organize data that uses concrete or real objects evenly spaced or placed in individual cells, where each object represents one unit of data, to show the frequency (number of times) that each category occurs
• Picture graph – a graphical representation to organize data that uses pictures or symbols evenly spaced or placed in individual cells, where each picture or symbol represents one unit of data, to show the frequency (number of times) that each category occurs
• Characteristics of real-object and picture graphs
  • Objects or pictures are placed in a linear arrangement to represent data.
  • Horizontal or vertical linear arrangement
  • Objects or pictures spaced approximately equal distances apart or placed in individual cells
  • Placement of objects or pictures beginning at the bottom of vertical graph and progressing up
  • Placement of objects or pictures beginning at the left of horizontal graph and progressing to the right
  • Each category may use a different object or picture that represents the category.
  • Each object or picture represents one unit of data.
  • Value of the data in each category is
	• Graph – a visual representation of the relationships between data collected
	  ◦ Organization of data used to interpret data, draw conclusions, and make comparisons
	• Picture graphs and bar-type graphs with up to three categories
	• Picture graph – a graphical representation to organize data that uses pictures or symbols evenly spaced or placed in individual cells, where each picture or symbol represents one unit of data, to show the frequency (number of times) that each category occurs
	  ◦ Characteristics of a picture graph
	  • Pictures are placed in a linear arrangement to represent data.
	  ◦ Horizontal or vertical linear arrangement
	  ◦ Pictures spaced approximately equal distances apart
	  ◦ Placement of pictures beginning at the bottom of vertical graph and progressing up
	  ◦ Placement of pictures beginning at the left of horizontal graph and progressing to the right
	  • Each category may use a different picture that represents the category.
	  • Each picture represents one unit of data.
	  • Value of the data in each category is determined by the total number of pictures in that category.
	  • Each category may be represented with labels.
	  • Graph is represented with a title.
	• Bar-type graph – a graphical representation to organize data that uses bars divided into individual cells to demonstrate one-to-one
		one or more than one unit of data, to show the frequency (number of times) that each category occurs
		  ◦ Characteristics of a pictograph
		  • Title clarifies the meaning of the data represented.
		  • Categorical data is represented with labels.
		  • Horizontal or vertical linear arrangement
		  • One picture or symbol is used to represent all categories.
		  • A key is used to identify the value of each picture or symbol.
		  • Number of pictures and partial-pictures or symbols represents the number of data points for a given category.
		  • Value of the data in each category is determined by the total value of the pictures or symbols in that category.
		• Bar graph – a graphical representation to organize data that uses solid bars that do not touch each other to show the frequency (number of times) that each category occurs
		  ◦ Characteristics of a bar graph
		  • Title clarifies the meaning of the data represented.
		  • Subtitles clarify the meaning of the data represented on each axis.
		  • Categorical data is represented with labels.
		  • Horizontal or vertical linear arrangement
		  • Bars are solid.
		  • Bars do not touch.
		  • Scale of the axis may be intervals of one or more, and scale intervals are proportionally displayed.

Kindergarten	Grade 1	Grade 2

• Value of the data in each category is determined by the total number of objects or pictures in that category.
• Each category may be represented with labels.
• Graph may be represented with a title.
• Real-object and picture graphs with two or three categories
• Connection between real-object graphs and picture graphs
  ◦ Transformation of a real-object graph into a picture graph
 	
Note(s):
 	
• Grade Level(s):
  ◦ Grade 1 will use data to create picture and bar-type graphs.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Grade Level Connections (reinforces previous learning and/or provides development for future learning)
• TxCCRS:
  ◦ IX. Communication and Representation
  • X. Connections
	individual cells to demonstrate one-to-one correspondence and to show the frequency (number of times) that each category occurs
	  ◦ Characteristics of bar-type graphs
	  • Bars are placed in a linear arrangement to represent data.
	  ◦ Horizontal or vertical linear arrangement
	  ◦ Bars divided into equal-sized cells with no gaps between cells
	  ◦ Placement of bars beginning at the bottom of vertical graph and progressing up
	  ◦ Placement of bars beginning at the left of horizontal graph and progressing to the right
	  • Each category may use a different color that represents the category.
	  • Each shaded cell represents one unit of data.
	  • Value of the data in each category is determined by the total number of shaded cells in that category.
	  • Each category is represented with labels.
	  • Graph is represented with a title.
	• Same data represented using a picture graph and a bar-type graph
	• Connection between picture graphs and bar-type graphs
	  ◦ Replace each picture on a picture graph with a shaded cell to create a bar-type graph.
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Kindergarten used data to create real-object and picture graphs.
		◦ The scale of the axis is a number line.
		  • Length of the bar represents the number of data points for a given category.
		  ◦ Length the bar represents the distance from zero on the scale of the axis.
		  • Value of the data represented by the bar is determined by reading the number associated with its length (distance from zero) on the axis scale.
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 1 used data to create picture and bar-type graphs.
		  ◦ Graph 3 will summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Developing proficiency in the use of place value within the base-10 numeration system
		• TxCCRS:
		  • IX. Communication and Representation

Kindergarten	Grade 1	Grade 2
	◦ Grade 2 will organize a collection of data with up to four categories using pictographs and bar graphs with intervals of one or more. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Developing an understanding of place value • TxCCRS: ◦ IX. Communication and Representation ◦ X. Connections	
Drawing Conclusions and Solving Problems Using Representations of Data		
K.8 ***Data analysis. The student applies mathematical process standards to collect and organize data to make it useful for interpreting information. The student is expected to:***	***1.8*** ***Data analysis. The student applies mathematical process standards to organize data to make it useful for interpreting information and solving problems. The student is expected to:***	***2.10*** ***Data analysis. The student applies mathematical process standards to organize data to make it useful for interpreting information and solving problems. The student is expected to:***
K.8C **Draw conclusions from real-object and picture graphs.** Draw CONCLUSIONS FROM REAL-OBJECT AND PICTURE GRAPHS Including, but not limited to: • Graph – a visual representation of the relationships between data collected ◦ Organization of data used to interpret data,	**1.8C** **Draw conclusions and generate and answer questions using information from picture and bar-type graphs.** Draw CONCLUSIONS USING INFORMATION FROM PICTURE AND BAR-TYPE GRAPHS Including, but not limited to: • Graph – a visual representation of the relationships between data collected	**2.10D** **Draw conclusions and make predictions from information in a graph.** Draw CONCLUSIONS FROM INFORMATION IN A GRAPH Including, but not limited to: • Graph – a visual representation of the relationships between data collected ◦ Organization of data used to interpret data,

Kindergarten	Grade 1	Grade 2

draw conclusions, and make comparisons
• Real-object graph – a graphical representation to organize data that uses concrete or real objects evenly spaced or placed in individual cells, where each object represents one unit of data, to show the frequency (number of times) that each category occurs
• Picture graph – a graphical representation to organize data that uses pictures or symbols evenly spaced or placed in individual cells, where each picture or symbol represents one unit of data, to show the frequency (number of times) that each category occurs
• Description of data represented
  ◦ Identification of title and category labels
  ◦ Explanation of what the graph represents
• Conclusions related to the question that led to the data collection
  • Numerical conclusions in the data
  • Quantities represented by the data
  • Number in each categroy represented
  • Number represented in a category(s) may be zero.
  • Comparisons of data represented
  ◦ Data counts limited to comparing 20 units per category
  ◦ Comparative language used without numbers (e.g., more than, less than, fewer than, the most, the least, the same as, equal to, etc.)
  ◦ Comparative language used with numbers (e.g., 1 more than, 2 greater than, 2 less than, 1 fewer than, etc.)
• Changes in orientation do not affect the data
 	
Note(s):
	◦ Organization of data used to interpret data, draw conclusions, and make comparisons
	• Picture graph – a graphical representation to organize data that uses pictures or symbols evenly spaced or placed in individual cells, where each picture or symbol represents one unit of data, to show the frequency (number of times) that each category occurs
	• Bar-type graph – a graphical representation to organize data that uses bars divided into individual cells to demonstrate one-to-one correspondence and to show the frequency (number of times) that each category occurs
	• Data – information that is collected about people, events, or objects
	  ◦ Categorical data – data that represents the attributes of a group of people, events, or objects
	• Picture graphs
	  ◦ Up to three categories
	  ◦ Each picture or symbol represents one unit of data
	• Bar-type graphs
	  ◦ Up to three categories
	  ◦ Each cell of the bars represents intervals of one
	• Description of data represented
	  ◦ Identification of title and category labels
	  ◦ Explanation of what the graph represents
	• Conclusions related to the question that led to the data collection
	  ◦ Numerical conclusions in the data
	  ◦ Data counts limited to addition or subtraction of categories within 20
	  ◦ Quantities represented by the data
	  • Number in each category represented
		draw conclusions, and make comparisons
		• Data – information that is collected about people, events, or objects
		  ◦ Categorical data – data that represents the attributes of a group of people, events, or objects
		  ◦ Factual data – actual quantities represented in a graph used to interpret data, draw conclusions, and make comparisons
		• Pictograph – a graphical representation to organize data that uses a picture or symbol, where each picture or symbol may represent one or more than one unit of data, to show the frequency (number of times) that each category occurs
		  ◦ Up to four categories
		  ◦ Each picture or symbol represents one or more units of data.
		• Bar graph – a graphical representation to organize data that uses solid bars that do not touch each other to show the frequency (number of times) that each category occurs
		  ◦ Up to four categories
		  ◦ Scale of the axis in intervals of one or more
		• Description of data represented
		  ◦ Identification of title and category labels
		  ◦ Explanation of what the graph represents
		• Conclusions related to the question that led to the data collection
		  ◦ Numerical conclusions in the data
		  ◦ Quantities represented by the data
		  ◦ Number in each category represented
		  • Number represented in a category(s) may be zero.
		  ◦ Combined total represented

Kindergarten	Grade 1	Grade 2

• Grade Level(s):
  ◦ Grade 1 will draw conclusions and generate and answer questions using information from picture and bar-type graphs.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Grade Level Connections (reinforces previous learning and/or provides development for future learning)
• TxCCRS:
  ◦ IX. Communication and Representation
  • X. Connections
	◦ Number represented in a category(s) may be zero.
	  • Combined total represented
	• Comparisons of data represented
	  • Comparative language used without numbers
	  • Comparative language used with numbers
	• Changes in orientation do not affect the data.
	
	Generate, Answer
	
	QUESTIONS USING INFORMATION FROM PICTURE AND BAR-TYPE GRAPHS
	
	Including, but not limited to:
	
	• Graph – a visual representation of the relationships between data collected
	  ◦ Organization of data used to interpret data, draw conclusions, and make comparisons
	• Picture graph – graphical representation to organize data that uses pictures or symbols evenly spaced or placed in individual cells, where each picture or symbol represents one unit of data, to show the frequency (number of times) that each category occurs
	• Bar-type graph – a graphical representation to organize data that uses bars divided into individual cells to demonstrate one-to-one correspondence and to show the frequency (number of times) that each category occurs
	• Data – information that is collected about people, events, or objects
	  ◦ Categorical data – data that represents the attributes of a group of people, events, or objects
		◦ Comparisons of data represented
		  ◦ Comparative language used with numbers
		  ◦ Comparative language used without numbers
		• Changes in orientation do not affect the data.
		
		Make
		
		PREDICTIONS FROM INFORMATION IN A GRAPH
		
		Including, but not limited to:
		
		• Graph – a visual representation of the relationships between data collected
		  ◦ Organization of data used to interpret data, draw conclusions, and make comparisons
		• Data – information that is collected about people, events, or objects
		  ◦ Categorical data – data that represents the attributes of a group of people, events, or objects
		  ◦ Inferential data – existing data used to make predictions about future data
		• Pictograph – a graphical representation to organize data that uses a picture or symbol, where each picture or symbol may represent one or more than one unit of data, to show the frequency (number of times) that each category occurs
		  ◦ Up to four categories
		  ◦ Each picture or symbol represents one or more units of data.
		• Bar graph – a graphical representation to organize data that uses solid bars that do not touch each other to show the frequency (number of times) that each category occurs
		  ◦ Up to four categories

Kindergarten	Grade 1	Grade 2

	• Generate questions using data in graphs.
	  ◦ Picture graphs
	  • Up to three categories
	  • Each picture or symbol represents one unit of data
	  ◦ Bar-type graphs
	  • Up to three categories
	  • Each cell of the bars represents intervals of one
	  ◦ Mathematical and real-world problem situations
	  • One-step problems
	  ◦ Addition or subtraction of categories within 20
	  • Comparison of data represented
	  • Numerical conclusions from the data represented
	• Answer questions using data in graphs
	  ◦ Picture graphs
	  • Up to three categories
	  • Each picture or symbol represents one unit of data
	  ◦ Bar-type graphs
	  • Up to three categories
	  • Each cell of the bars represents intervals of one
	  ◦ Mathematical and real-world problem situations
	  • One-step problems
	  ◦ Addition or subtraction of categories within 20
	  • Comparison of data represented
	  • Numerical conclusions from the data represented
	
	Note(s):
		◦ Scale of the axis in intervals of one or more
		• Make predictions based on patterns in the data collected.
		• Make predictions based on comparisons of quantities in the data collected.
		• Make predictions about future actions based on the purpose of the data collection.
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 1 drew conclusions and generated and answered questions using information from picture and bar-type graphs.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000
		• TxCCRS:
		  • IX. Communication and Representation

Kindergarten	Grade 1	Grade 2

	• Grade Level(s):
	  ◦ Kindergarten drew conclusions from real-object and picture graphs.
	  ◦ Grade 2 will draw conclusions and make predictions from information in a graph.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Developing an understanding of place value
	• TxCCRS:
	  ◦ IX. Communication and Representation
	  ◦ X. Connections	

		2.10C
		
		Write and solve one-step word problems involving addition or subtraction using data represented within pictographs and bar graphs with intervals of one.
		
		Write, Solve
		
		ONE-STEP WORD PROBLEMS INVOLVING ADDITION OR SUBTRACTION USING DATA REPRESENTED WITHIN PICTOGRAPHS AND BAR GRAPHS WITH INTERVALS OF ONE
		
		Including, but not limited to:
		
		• Graph – a visual representation of the relationships between data collected
		  ◦ Organization of data used to interpret data, draw conclusions, and make comparisons
		• Data – information that is collected about people, events, or objects
		  ◦ Categorical data – data that represents the attributes of a group of people, events, or

Kindergarten	Grade 1	Grade 2
		objects • Categorical data may represent numbers or ranges of numbers. • Write and solve mathematical and real-world problems using data represented within pictographs and bar graphs. ◦ Pictograph – a graphical representation to organize data that uses a picture or symbol, where each picture or symbol may represent one or more than one unit of data, to show the frequency (number of times) that each category occurs • Up to four categories • Each picture or symbol limited to representing one unit of data ◦ Bar graph – a graphical representation to organize data that uses solid bars that do not touch each other to show the frequency (number of times) that each category occurs • Up to four categories • Scale of the axis limited to intervals of one ◦ One-step problems • Addition or subtraction Note(s): • Grade Level(s): ◦ Grade 3 will solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals. ◦ Various mathematical process standards will be applied to this student expectation

Kindergarten	Grade 1	Grade 2

		as appropriate.
		• TxRCFP:
		  ◦ Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000
		• TxCCRS:
		  ◦ VIII. Problem Solving and Reasoning
		  ◦ IX. Communication and Representation
		  ◦ X. Connections

Considering Income and Careers		
K.9 ***Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:***	***1.9*** ***Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:***	***2.11*** ***Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:***
K.9A **Identify ways to earn income.** Identify WAYS TO EARN INCOME	**1.9A** **Define money earned as income.** Define MONEY EARNED AS INCOME	

Kindergarten	Grade 1	Grade 2

Including, but not limited to:
• Income – money earned
• Ways to earn income
  ◦ Job – work performed to complete a task, usually for money
  • Jobs are available in the home, school, and community.
  ◦ Jobs for adults
  ◦ Jobs for children
  ◦ Sale of goods or property (sale of items)
 	
Note(s):
• Grade Level(s):
  ◦ Grade 1 will define money earned as income.
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Financial Literacy
• TxCCRS:
  ◦ IX. Communication and Representation
  • X. Connections
	Including, but not limited to:
	• Income – money earned
	• Ways to earn income
	  ◦ Job – work performed to complete a task, usually for money
	  ◦ Jobs are available in the home, school, and community.
	  • Jobs for adults
	  • Jobs for children
	  ◦ Sale of goods or property
	
	Note(s):
	• Grade Level(s):
	  ◦ Kindergarten identified ways to earn income.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Financial Literacy
	• TxCCRS:
	  ◦ IX. Communication and Representation
	  ◦ X. Connections	

K.9D **Distinguish between wants and needs and identify income as a source to meet one's wants and needs.** Distinguish BETWEEN WANTS AND NEEDS Including, but not limited to: • Distinguish between real-world wants and	**1.9B** **Identify income as a means of obtaining goods and services, oftentimes making choices between wants and needs.** Identify INCOME AS A MEANS OF OBTAINING GOODS AND SERVICES, OFTENTIMES MAKING CHOICES BETWEEN WANTS AND NEEDS	

Kindergarten	Grade 1	Grade 2

needs.
  - Wants – things you wish for but are not necessary for life
  - Needs – things that are necessary for life
- Distinguish between needs that could be considered wants.
 	
Identify
 	
INCOME AS A SOURCE TO MEET ONE'S WANTS AND NEEDS
 	
Including, but not limited to:
 	
- Income – money earned
- Income is necessary to purchase both wants and needs.
  - Items have a cost regardless of whether they are a want or a need.
  - Services have a cost regardless of whether they are a want or a need.
 	
Note(s):
 	
- Grade Level(s):
  - Grade 1 will identify income as a means of obtaining goods and services, oftentimes making choices between wants and needs.
  - Various mathematical process standards will be applied to this student expectation as appropriate.
- TxRCFP:
  - Financial Literacy
- TxCCRS:
  - IX. Communication and Representation
  - X. Connections
	Including, but not limited to:
	
	- Income – money earned
	- Income may be used to obtain goods and services.
	  - Purchasing – to acquire goods or services through the payment of money
	  - Goods – physical products that can be touched and felt
	  - Services – tasks or work provided by people for other people
	- Amount of income earned may require making choices between purchasing wants and needs.
	  - Wants – things you wish for but are not necessary for life
	  - Needs – things that are necessary for life
	  - Choices are required when the costs of wants and needs are greater than income.
	  - Purchases of needs should be met first.
	  - Purchases of wants should be based on remaining extra income.
	  - Purchases of wants may need to wait until more income is earned.
	
	Note(s):
	
	- Grade Level(s):
	  - Kindergarten distinguished between wants and needs and identified income as a source to meet one's wants and needs.
	  - Various mathematical process standards will be applied to this student expectation as appropriate.
	
	- TxRCFP:
	  - Financial Literacy	

Kindergarten	Grade 1	Grade 2

	• TxCCRS:
	  • IX. Communication and Representation
	  • X. Connections	

		2.11F
		
		Differentiate between producers and consumers and calculate the cost to produce a simple item.
		
		Differentiate
		
		BETWEEN PRODUCERS AND CONSUMERS
		
		Including, but not limited to:
		
		• Producers – people who make goods or provide services
		• Consumers – people who buy goods and services
		• Differentiate between producers and consumers.
		  ◦ People can be both producers and consumers.
		
		Calculate
		
		THE COST TO PRODUCE A SIMPLE ITEM
		
		Including, but not limited to:
		
		• Produce – to manufacture or create goods or provide services
		• Costs of production
		  ◦ Materials
		  ◦ Labor
		• Calculate the cost to produce a simple item.
		  ◦ Add all costs of production.

Kindergarten	Grade 1	Grade 2
		Note(s): • Grade Level(s): ◦ Grade 2 introduces differentiating between producers and consumers and calculating the cost to produce a simple item. ◦ Grade 3 will describe the relationship between the availability or scarcity of resources and how that impacts cost. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Financial Literacy • TxCCRS: ◦ IX. Communication and Representation ◦ X. Connections
K.9B **Differentiate between money received as income and money received as gifts.** Differentiate BETWEEN MONEY RECEIVED AS INCOME AND MONEY RECEIVED AS GIFTS Including, but not limited to: • Money – coins (pennies, nickels, dimes, and quarters) and paper bills (dollars) • Money received as income ◦ Money received for work done ◦ Money received for selling of items, such as clothes that are too small, old toys, cookies, lemonade, etc.		

Kindergarten	Grade 1	Grade 2
◦ Money received for household chores, babysitting, mowing the lawn, washing the car, taking care of pets, etc. • Money received as gifts ◦ Money that does not have to be paid back ◦ Money received but not earned Note(s): • Grade Level(s): ◦ Kindergarten introduces money by identifying U.S. coins by name. ◦ Grade 1 will define money earned as income. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Financial Literacy • TxCCRS: ◦ IX. Communication and Representation • X. Connections		
K.9C **List simple skills required for jobs.** List SIMPLE SKILLS REQUIRED FOR JOBS Including, but not limited to: • Job – work performed to complete a task, usually for money • Jobs are available in the home, school, and community.		

Kindergarten	Grade 1	Grade 2

• Skills required for jobs
  ◦ Education, knowledge
  ◦ Physical requirements
 	
Note(s):
 	
• Grade Level(s):
  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
• TxRCFP:
  ◦ Financial Literacy
• TxCCRS:
  ◦ IX. Communication and Representation
  • X. Connections		

	Considering Saving and Investing	
	1.9 ***Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:***	***2.11*** ***Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:***
	1.9C **Distinguish between spending and saving.** Distinguish BETWEEN SPENDING AND SAVING Including, but not limited to: • Money earned may be spent or saved. ◦ Spending – purchasing goods and services to satisfy wants and needs	**2.11A** **Calculate how money saved can accumulate into a larger amount over time.** Calculate HOW MONEY SAVED CAN ACCUMULATE INTO A LARGER AMOUNT OVER TIME Including, but not limited to: • Saving – setting aside money earned or

Kindergarten	Grade 1	Grade 2
	• Spending results in a decrease in the amount of money you have. ○ Saving – setting aside money earned or received for future use • Saving results in no decrease in the amount of money you have. • Saving may result in an increase in the amount of money you have. • Money may be saved in a bank account, piggy bank, etc. • Distinguish between spending and saving in real-world problem situations. Note(s): • Grade Level(s): ○ Grade 1 introduces distinguishing between spending and saving. ○ Grade 2 will calculate how money saved can accumulate into a larger amount over time. ○ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ○ Financial Literacy • TxCCRS: ○ IX. Communication and Representation ○ X. Connections	received for future use • Saving can result in an increase of money over time. ○ Money may be saved in a bank account, piggy bank, etc. ○ Money saved in a bank account may earn interest. • Interest earned – money received for saving money in a bank account • Calculate savings over time. ○ Relationship between saving money and addition • Saving money is equivalent to adding money to a bank account, piggy bank, etc. ○ Adding money to a bank account or piggy bank will result in a larger amount of money. ○ Adding interest to a bank account will result in a larger amount of money. Note(s): • Grade Level(s): ○ Grade 1 distinguished between spending and saving. ○ Grade 3 will list reasons to save and explain the benefit of a savings plan, including for college. ○ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ○ Financial Literacy • TxCCRS: ○ I. Numeric Reasoning ○ VIII. Problem Solving and Reasoning

Kindergarten	Grade 1	Grade 2
		◦ IX. Communication and Representation ◦ X. Connections
		2.11B **Explain that saving is an alternative to spending.** Explain THAT SAVING IS AN ALTERNATIVE TO SPENDING Including, but not limited to: • Money earned may be spent or saved. ◦ Spending – purchasing goods and services to satisfy wants and needs • Spending results in a decrease in the amount of money you have. ◦ Saving – setting aside money earned or received for future use • Saving results in no decrease in the amount of money you have. • Saving may result in an increase in the amount of money you have. • Money may be saved in a bank account, piggy bank, etc. • Reasons for spending money earned ◦ Meet current wants or needs ◦ Charitable giving • Reasons for saving ◦ Meet future wants or needs ◦ Earn additional money through interest ◦ Possibility of future income decreasing Note(s): • Grade Level(s):

Kindergarten	Grade 1	Grade 2
		◦ Grade 1 distinguished between spending and saving. ◦ Grade 3 will identify the costs and benefits of planned and unplanned spending decisions. ◦ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ◦ Financial Literacy • TxCCRS: ◦ IX. Communication and Representation ◦ X. Connections
		Considering Credit and Debt
		2.11D
		Identify examples of borrowing and distinguish between responsible and irresponsible borrowing.
		Identify
		EXAMPLES OF BORROWING
		Including, but not limited to:
		• Borrowing – receiving money or goods now that will be returned or paid for in the future • Examples of borrowing in mathematical and real-world problem situations (e.g., borrowing money, borrowing property or goods, etc.)
		Distinguish
		BETWEEN RESPONSIBLE AND IRRESPONSIBLE

Kindergarten	Grade 1	Grade 2

		BORROWING
		
		Including, but not limited to:
		
		• Borrowing – receiving money or goods now that will be returned or paid for in the future
		• Responsible borrowing
		  ◦ Borrowing only the amount of money you will be able to repay in a given time period
		  ◦ Maintaining the care of borrowed goods until they are returned
		• Irresponsible borrowing
		  ◦ Borrowing more than you can pay back in a given time period
		  ◦ Not maintaining the care of borrowed goods until they are returned
		• Distinguish between responsible and irresponsible borrowing in mathematical and real-world problem situations.
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 3 will explain that credit is used when wants or needs exceed the ability to pay and that it is the borrower's responsibility to pay it back to the lender, usually with interest.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:
		  ◦ Financial Literacy
		• TxCCRS:
		  ◦ IX. Communication and Representation
		  ◦ X. Connections

Kindergarten	Grade 1	Grade 2

		2.11E
		
		Identify examples of lending and use concepts of benefits and costs to evaluate lending decisions.
		
		Identify
		
		EXAMPLES OF LENDING
		
		Including, but not limited to:
		
		• Lending – providing others with money or goods now that will be returned or paid back in the future
		• Examples of lending in mathematical and real-world problem situations (e.g., lending money, lending property or goods, etc.)
		
		Use
		
		CONCEPTS OF BENEFITS AND COSTS TO EVALUATE LENDING DECISIONS
		
		Including, but not limited to:
		
		• Lending – providing others with money or goods now that will be returned or paid back in the future
		• Benefits of lending
		  ◦ Helping others
		  ◦ Developing a new relationship
		  ◦ Possible interest earned
		• Costs or risks of lending
		  ◦ Borrower not paying the money back
		  ◦ Borrower damaging or losing goods loaned
		  ◦ Ruining a relationship
		  ◦ Not having enough money for your own future needs
		• Considerations prior to lending money or

Kindergarten	Grade 1	Grade 2
		goods ○ Benefits vs. costs or risks • Evaluate real-world lending decisions. Note(s): • Grade Level(s): ○ Grade 2 introduces identifying examples of lending and using concepts of benefits and costs to evaluate lending decisions. ○ Various mathematical process standards will be applied to this student expectation as appropriate. • TxRCFP: ○ Financial Literacy • TxCCRS: ○ IX. Communication and Representation ○ X. Connections
	Considering Planning and Money Management	
	1.9 ***Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:***	***2.11*** ***Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:***
	1.9D **Consider charitable giving.** Consider CHARITABLE GIVING Including, but not limited to:	

Kindergarten	Grade 1	Grade 2

	• Money earned may be donated to charity.
	  ◦ Charity – an organization that collects money, goods, or services for groups in need
	  ◦ Charitable giving – donating to an organization that collects money, goods, or services to groups in need
	  ◦ Donating – giving money, goods, or services to a charitable organization
	  • Donating money earned to charity
	  • Donating goods or property to charity without receiving money in exchange
	  • Donating services or volunteering time to charity without receiving income in exchange
	• Reasons for charitable giving
	  ◦ Helping others who are not able to meet their needs
	  ◦ Feeling good about oneself
	
	Note(s):
	
	• Grade Level(s):
	  ◦ Grade 1 introduces considering charitable giving.
	  ◦ Grade 3 will identify decisions involving income, spending, saving, credit, and charitable giving.
	  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
	• TxRCFP:
	  ◦ Financial Literacy
	• TxCCRS:
	  ◦ IX. Communication and Representation
	  ◦ X. Connections	

Kindergarten	Grade 1	Grade 2

		2.11C
		
		Distinguish between a deposit and a withdrawal.
		
		Distinguish
		
		BETWEEN A DEPOSIT AND A WITHDRAWAL
		
		Including, but not limited to:
		
		• Money may be stored in a bank account.
		  ◦ Checking account usually used for frequent transactions
		  ◦ Savings account usually used for less frequent transactions or for earning interest
		• Terminology for bank transactions
		  ◦ Deposit – money put into an account
		  • Add to previous balance
		  ◦ Withdrawal – money taken out of an account
		  • Subtract from previous balance
		  ◦ Balance – the amount of money that is in a bank account after a deposit or withdrawal
		  • New total after adding or subtracting
		• Distinguish between a deposit and a withdrawal in mathematical and real-world problem situations.
		
		Note(s):
		
		• Grade Level(s):
		  ◦ Grade 2 introduces distinguishing between a deposit and a withdrawal.
		  ◦ Various mathematical process standards will be applied to this student expectation as appropriate.
		• TxRCFP:

Kindergarten	Grade 1	Grade 2
		◦ Financial Literacy • TxCCRS: ◦ IX. Communication and Representation ◦ X. Connections

Bold black text in italics: Knowledge and Skills Statement (TEKS)

Bold black text: Student Expectation (TEKS)

Bold red text in italics: Student Expectation identified by TEA as a ***Readiness Standard for STAAR***

Bold green text in italics: Student Expectation identified by TEA as a Supporting Standard for STAAR

Blue text: Supporting information / Clarifications from TCMPC (Specificity)

Black text: Texas Education Agency (TEA); Texas College and Career Readiness Standards (TxCCRS)