Mathematics TEKS
SUPPORTING INFORMATION

GRADE 1

Texas Education Agency

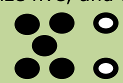
TEKS	Supporting Information
(a) Introduction. (1) The desire to achieve educational excellence is the driving force behind the Texas essential knowledge and skills for mathematics, guided by the college and career readiness standards. By embedding statistics, probability, and finance, while focusing 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 definition of a well-balanced mathematics curriculum has expanded to include the Texas College and Career Readiness Standards (CCRS). A focus on mathematical fluency and solid understanding allows for rich exploration of the primary focal points.
(a) Introduction. (2) 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 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.	This paragraph occurs second in the TEKS to highlight the continued emphasis on process skills that are now included from kindergarten through high school mathematics. This introductory paragraph includes generalization and abstraction with the text from (1)(C). This introductory paragraph includes computer programs with the text from 1(D). This introductory paragraph states, “Students will use mathematical relationships to generate solutions and make connections and predictions” instead of incorporating the text from (1)(E).
(a) Introduction. (3) 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.	The TEKS include the use of the words “automaticity,” “fluency”/”fluently,” and “proficiency” with references to standard algorithms. Attention is being given to these descriptors to indicate benchmark levels of skill to inform intervention efforts at each grade level. These benchmark levels are aligned to national recommendations for the development of algebra readiness for enrollment in Algebra I. Automaticity refers to the rapid recall of facts and vocabulary. For example, we would expect a third-grade student to recall rapidly the sum of 5 and 3 or to identify rapidly a closed figure with 3 sides and 3 angles. To be mathematically proficient, students must develop conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and productive disposition (National Research Council, 2001, p. 116). “Procedural fluency refers to knowledge of procedures, knowledge of when and how to use them appropriately, and skill in performing them flexibly, accurately, and efficiently” (National Research Council, 2001, p. 121). “Students need to see that procedures can be developed that will solve entire classes of problems, not just individual problems” (National Research Council, 2001, p. 121). Procedural fluency and conceptual understanding weave together to develop mathematical proficiency.

(a) Introduction. (4) 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-dimensional solids. (A) Students use relationships within the numeration system to understand the sequential order of the counting numbers and their relative magnitude. (B) 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. (C) 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.	This paragraph highlights more specifics about grade 1 mathematics content and follows paragraphs about the mathematical process standards and mathematical fluency. This supports the notion that the TEKS should be learned in a way that integrates the mathematical process standards in an effort to develop fluency. This paragraph has been updated to align to the grade 1 mathematics TEKS. This paragraph highlights focal areas or topics that receive emphasis in this grade level. These are different from focal points which are part of the *Texas Response to Curriculum Focal Points [TXRCFP]*. "[A] curriculum focal point is not a single TEKS statement; a curriculum focal point is a mathematical idea or theme that is developed through appropriate arrangements of TEKS statements at that grade level that lead into a connected grouping of TEKS at the next grade level" (TEA, 2010, p. 5). The focal areas are found within the focal points. The focal points may represent a subset of a focal area, or a focal area may represent a subset of a focal point. The focal points within the *TXRCFP* list related grade-level TEKS.
(a) Introduction. (5) 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.	The State Board of Education approved the retention of some "such as" statements within the TEKS where needed for clarification of content. The phrases "including" and "such as" should not be considered as limiting factors for the student expectations (SEs) in which they reside.

Additional Resources are available online including

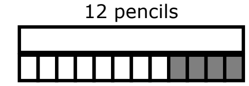
- Interactive Mathematics Glossary
- Vertical Alignment Charts
- Texas Response to the Curriculum Focal Points, Revised 2013
- Texas Mathematics Resource Page

TEKS: Mathematical Process Standards.	Supporting Information
1(1)(A) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to apply mathematics to problems arising in everyday life, society, and the workplace.**	This SE emphasizes application. The opportunities for application have been consolidated into three areas: everyday life, society, and the workplace. This SE, when paired with a content SE, allows for increased rigor through connections outside the discipline.
1(1)(B) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to 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.**	This SE describes the traditional problem-solving process used in mathematics and science. Students are expected to use this process in a grade appropriate manner when solving problems that can be considered difficult relative to mathematical maturity.
1(1)(C) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.**	The phrase "as appropriate" is included in the TEKS. This implies that students are assessing which tool(s) to apply rather than trying only one or all accessible tools. "Paper and pencil" is included in the list of tools that still includes real objects, manipulatives, and technology.
1(1)(D) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.**	Communication includes reasoning and the implications of mathematical ideas and reasoning. The list of representations is summarized with "multiple representations" with specificity added for "symbols," "graphs," and "diagrams."
1(1)(E) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to create and use representations to organize, record, and communicate mathematical ideas.**	The use of representations includes organizing and recording mathematical ideas in addition to communicating ideas. As students use and create representations, it is implied that they will evaluate the effectiveness of their representations to ensure that they are communicating mathematical ideas clearly. Students are expected to use appropriate mathematical vocabulary and phrasing when communicating mathematical ideas.
1(1)(F) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to analyze mathematical relationships to connect and communicate mathematical ideas.**	The TEKS allow for additional means to analyze relationships and to form connections with mathematical ideas past forming conjectures about generalizations and sets of examples and non-examples. Students are expected to form conjectures based on patterns or sets of examples and non-examples.
1(1)(G) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.**	Students are expected to validate their conclusions with displays, explanations, and justifications. The conclusions should focus on mathematical ideas and arguments. Displays could include diagrams, visual aids, written work, etc. The intention is to make one's work visible to others so that explanations and justifications may be shared in written or oral form. Precise mathematical language is expected. For example, students would use "vertex" instead of "corner" when referring to the point at which two edges intersect on a polygon.

TEKS: Number and Operations.	Supporting Information
1(2)(A) **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 recognize instantly the quantity of structured arrangements.**	This SE extends K(2)(C), where students are asked to recognize small quantities in organized and random arrangements. The number of items should be ten or less. When paired with 1(1)(G), a student may be asked to explain the thinking he or she used to subitize the number. Structured arrangements include ten frames and the arrangements of dots on random number generators. For example, when shown an arrangement with two "parts," a student might justify his or her thinking by saying, "I recognize five, and then I added two more."  This use of structured arrangements builds students' conceptual understandings of the part-whole relationship of numbers (5 and 2 compose to 7) and basic facts (5 + 2 or 2 + 5).
1(2)(B) **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 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.**	These concrete and pictorial models are used to compose and decompose numbers in more than one way as a means to describe the value of whole numbers. "So many hundreds, so many tens, and so many ones" may include using models to decompose 67 into 5 tens and 17 ones. It may also include models to decompose 67 into the sum of 50, 10, and 7.
1(2)(C) **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 use objects, pictures, and expanded and standard forms to represent numbers up to 120.**	This SE allows students to incorporate 1(1)(D) through the use of multiple representations of a number by using concrete models, pictorial models, standard form (119), and expanded form (119 = 100 + 10 + 9).
1(2)(D) **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 generate a number that is greater than or less than a given whole number up to 120.**	This SE extends K(2)(F), where students are expected to generate a number that is one more or one less than another number up to 20.
1(2)(E) **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 use place value to compare whole numbers up to 120 using comparative language.**	Students may be expected to use comparative language such as greater than, less than, or equal to in order to compare numbers using place value. The comparison may occur in ones, tens, or hundreds. For example, given the numbers 87 and 64, a student would describe 64 as having the lesser value because the value of the 6 in the tens place is 60, while having an 8 in the tens place is 80, and 60 is less than 80. In comparing numbers up to 120, one may use the hundreds, tens, and ones places with a set of whole numbers like 118, 108, 98, and 89.
1(2)(F) **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 order whole numbers up to 120 using place value and open number lines.**	Students may be expected to use place value to order numbers based on the value of the digits and use an open number line, which builds to 2(2)(E), where students locate whole numbers on an open number line. The use of an open number line supports student understanding related to the magnitude of number and the place-value relationship among numbers when locating a given number.
1(2)(G) **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 represent the comparison of two numbers to 100 using the symbols >, <, or =.**	Students are expected to extend their understanding of comparing numbers using comparative language in 1(2)(E). In this SE, student are expected to compare two numbers using the symbols >, <, or =. This SE complements 1(2)(D), 1(2)(E), and 1(2)(F).

TEKS: Number and Operations.	Supporting Information
1(3)(A) **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 use concrete and pictorial models to determine the sum of a multiple of 10 and a one-digit number in problems up to 99.**	Students may use concrete and pictorial models to add whole numbers with sums up to 99. For example, to determine the sum of 60 + 7, a student would use a model to represent 6 tens and 7 ones. This SE supports student understanding of place value and expanded form.
1(3)(B) **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 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.**	This SE extends K(3)(A), where students solve joining and separating problems with the result unknown. It also provides a context for 1(5)(F). This SE extends students' problem solving to address joining and separating actions with start, change, and result unknown. An example of a change unknown problem could be 3 + [ ] = 7. There were 3 birds in a tree. Some more birds came to join them. Now, there are 7 birds in the tree. How many birds came to join the birds that were there at the start? Students would then be asked to use objects or pictures to solve the problem.
1(3)(C) **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 compose 10 with two or more addends with and without concrete objects.**	The focus is on flexible thinking with composing 10 with two or more addends to support basic fact strategies such as "making 10." For example, a student may compose 10 without objects using addends such a 4 + 6 = 10 or 4 + 1 + 5 = 10.
1(3)(D) **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 apply basic fact strategies to add and subtract within 20, including making 10 and decomposing a number leading to a 10.**	This SE supports 1(3)(C) by asking students to apply their understanding of composing 10 to solving problems based upon the basic facts of addition. For example, given the fact 7 + 8, a student may decompose 8 into 3 and 5 so that the 3 may be added to the 7 to make 10, then add the 10 and 5 to equal 15. When paired with 1(1)(A), students may be asked to apply these basic facts to solve real-world word problems. This SE builds to 2(4)(A), where students are expected to have automaticity of basic math facts. Students in first-grade are not expected to have automaticity of basic facts. Basic facts of addition include all possible pairs of addends chosen from 1 to 10 including 10 + 10.
1(3)(E) **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 explain strategies used to solve addition and subtraction problems up to 20 using spoken words, objects, pictorial models, and number sentences.**	When the SE is paired with the 1(1)(E) and 1(1)(G), students are expected to explain and record observations, which may include strategies. This SE extends K(3)(C). Word problem structures may include joining and separating (start, change, or result unknown) actions, additive comparisons, and part-part-whole relationships. Students are not expected to know this terminology.
1(3)(F) **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 generate and solve problem situations when given a number sentence involving addition or subtraction of numbers within 20.**	Students must be provided with a mathematical number sentence (equation) in order to generate and then solve a problem situation. To build upon SEs 1(3)(B) and 1(5)(F), the unknown may be in any one of the terms in the problem. Problem situation structures may also include additive comparisons and part-part-whole relationships. Students are not expected to know this terminology.

TEKS: Number and Operations.	Supporting Information
1(4)(A) **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 identify U.S. coins, including pennies, nickels, dimes, and quarters, by value and describe the relationships among them.**	This SE extends K(4) by asking students to describe the relationship among the coins. For example, a quarter may be thought of as having the same value as 5 nickels or 25 pennies. Students should be familiar with the basic attributes of each coin regardless of if the coin has traditional or other images.
1(4)(B) **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 write a number with the cent symbol to describe the value of a coin.**	The SE expects students to label the value of a coin with the cent symbol, such as a dime has a value of 10¢.
1(4)(C) **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 use relationships to count by twos, fives, and tens to determine the value of a collection of pennies, nickels, and/or dimes.**	To use the relationships among the coins with connections to skip count, one may count nickels by fives and dimes by tens. One may count two pennies together to count by twos. In this way, this SE may support 1(5)(B). A collection of coins used for skip counting should not include quarters in grade 1. With a collection of pennies, nickels, and dimes, a student may begin counting by tens to determine the value of the dimes, continue from that amount counting by fives to determine the value of the dimes and the nickels, and count by ones or twos to include the pennies in the value of the collection. The maximum value of the collection is 120 cents.

TEKS: Algebraic Reasoning.	Supporting Information
1(5)(A) **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 recite numbers forward and backward from any given number between 1 and 120.**	This SE extends K(5), where students are expected to recite numbers up to at least 100 by ones and tens beginning with any given number. When reciting by tens, kindergarten students counted only multiples of 10: 60, 70, 80 . . .
1(5)(B) **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 skip count by twos, fives, and tens to determine the total number of objects up to 120 in a set.**	The focus of counting is to determine the total number of objects in a set. This SE supports 1(4)(C), where students skip count to find the value of a collection of coins. This technique of counting may lead to the concept of multiplication in grade 3 [3(4)(E)].
1(5)(C) **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 use relationships to determine the number that is 10 more and 10 less than a given number up to 120.**	The relationship that students use should focus on place value. For example, 99 = 90 + 9. If a student wants a number that is 10 more than 99, the student can think (90 + 10) + 9 or 100 + 9 or 109. This SE supports 1(2)(D) and builds to 2(7)(B), where students determine numbers that are either 10 or 100 more or less than a given up to 1,200.
1(5)(D) **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 represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and number sentences.**	For this SE, the student is not asked to solve the word problem. The student is asked to represent the context of the word problem using objects, pictures, and number sentences (equations). Based upon 1(3)(B), these word problems may include the unknown as any one of the terms. For example, Phoung has 12 pencils. She has some red pencils and 8 yellow pencils. How many red pencils does Phoung have? 12 = 8 + ?  Word problem structures may include joining and separating (start, change, or result unknown) actions, additive comparisons, and part-part-whole relationships. Students are not expected to know this terminology.
1(5)(E) **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 understand that the equal sign represents a relationship where expressions on each side of the equal sign represent the same value(s).**	This SE requires students to understand that the equal sign does not necessarily mean "find the answer." For example, in the problem 4 + 2 + 3 = [ ], the relationship may be 4 + 2 + 3 = 9 or 4 + 2 + 3 = 6 + 3. In both of these number sentences, the expressions on each side of the equal sign have a value of 9. The understanding of this SE helps support 1(5)(F) as students are asked to determine the unknown equation (number sentence). When paired with 1(1)(G), students may be expected to explain that 4 + 2 + 2 = 4 + 4 because the sum on each side of the equal sign is 8.
1(5)(F) **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 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.**	This SE allows students to apply their understanding of 1(5)(E). Examples of equations with three terms and one unknown include 6 + [ ] = 14, 14 – [ ] = 6, or 14 – 6 = [ ]. Examples of equations with four terms include 6 + [ ] = 4 + 8.

TEKS: Algebraic Reasoning.

1(5)(G) **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 apply properties of operations to add and subtract two or three numbers.

Supporting Information

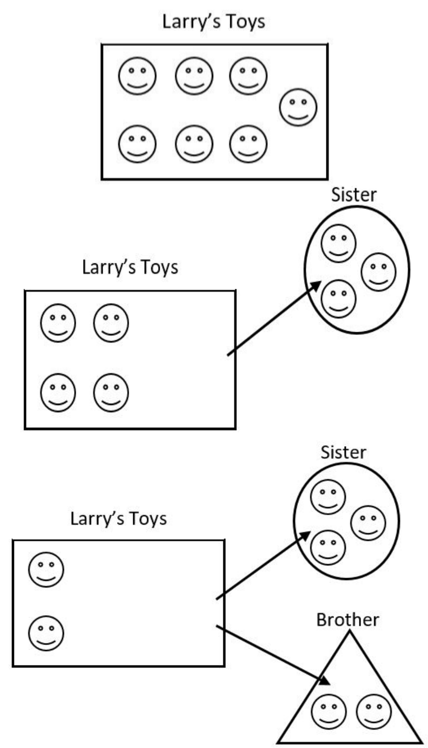
This SE may require students to apply the understanding of properties of operations to problem situations when incorporating 1(1)(A) and 1(1)(C). For example, there are 2 books on Ms. Smith's desk. After lunch, she placed 9 more books on her desk. How many books are on Ms. Smith's desk now?

A student may solve this problem using the commutative property of addition. The problem may be solved as 2 + 9 = 11, or a student may understand that 9 + 2 = 11 and could use this to solve the problem. A student may also use a place-value strategy such as "make 10." For example, 2 + 9 = 2 + (8 + 1) = (2 + 8) + 1 = 10 + 1 = 11

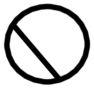
The SE also includes the addition and subtraction of three numbers. For example, students may be expected to add 3 + 8 + 6 using the associative property as
3 + (7 + 1) + 6 = (3 + 7) + 1 + 6 = 10 + (1 + 6) = 10 + 7 = 17.

The application of the properties of operations allow for the grouping and regrouping of numbers to develop a strong sense of place value and for creating groups of tens and ones.

Larry has 7 toys. He gives 3 to his sister. He gives 2 to his brother. How many does he have left?



Maria has 9 cards. She gets two more, then gives away 1. How many cards does Maria have?
9 + 2 - 1 = 10

TEKS: Geometry and Measurement.	Supporting Information
1(6)(A) **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 classify and sort regular and irregular two-dimensional shapes based on attributes using informal geometric language.**	Students are expected to classify and sort two-dimensional shapes, including rectangles, squares as special rectangles, rhombuses, regular and irregular hexagons, and regular and irregular triangles. Shapes may include figures with curved edges and hexagons other than regular hexagons. The language of the SE does not exclude these figures. Students may use informal language such as corners, sides, curved, straight, etc., as they classify and sort figures. This SE extends K(6)(E), where students are expected to classify and sort two- and three-dimensional figures.
1(6)(B) **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 distinguish between attributes that define a two-dimensional or three-dimensional figure and attributes that do not define the shape.**	When paired with 1(6)(D), the expectation is that students distinguish between attributes in order to identify two-dimensional shapes verbally or by demonstrating with drawings. For example, a closed figure with three sides is a triangle. A triangle is not defined by its orientation or color. When paired with 1(6)(E), the expectation is that students may use the solids to distinguish between attributes in order to identify three-dimensional shapes. For example, a solid with exactly six rectangular faces is a rectangular prism. A prism is not defined by its orientation or color.
1(6)(C) **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 create two-dimensional figures, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons.**	Students may create two-dimensional figures by using materials, sketching figures, cutting figures out of paper, etc. This SE provides a foundation for 2(8)(A), in which students create two-dimensional figures based on given attributes. This SE extends K(6)(F), where students are expected to create two-dimensional shapes.
1(6)(D) **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 identify two-dimensional shapes, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons and describe their attributes using formal geometric language.**	The SE adds rhombuses and hexagons to the list of two-dimensional geometric shapes found in K(6)(A). Students are expected to use formal geometric language such as "vertex" and "side."
1(6)(E) **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 identify three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes), and triangular prisms, and describe their attributes using formal geometric language.**	Students are expected to identify and describe attributes of specified three-dimensional geometric figures. The SE adds triangular prisms to the list of three-dimensional geometric solids found in K(2)(B). Students are expected to use formal geometric language such as "vertex," "edge," and "face."
1(6)(F) **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 compose two-dimensional shapes by joining two, three, or four figures to produce a target shape in more than one way if possible.**	This SE provides a foundation for 2(8)(D), where students are asked to compose a shape with given properties or attributes. For example, a student may be asked to produce a rectangle as the target shape. A student may join two square tiles to make a rectangle or may join four square tiles to make a rectangle.
1(6)(G) **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 partition two-dimensional figures into two and four fair shares or equal parts and describe the parts using words.**	For this SE, two–dimensional figures include circles and rectangles. The student may be expected to partition the figures into two or four equal parts as opposed to being given a shape that is already partitioned and being asked to describe the fraction. Student may be expected to describe the parts using words such as "halves," "fourths," or "quarters" and phrases such as "half of."
1(6)(H) **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 identify examples and non-examples of halves and fourths.**	The focus of this SE is on the fair sharing or equal parts of the two-dimensional figure. A non-example of a half would be a two-dimensional figure that has been partitioned into two unequal parts. 

TEKS: Geometry and Measurement.	Supporting Information
1(7)(A) **Geometry and measurement.** The student applies mathematical process standards to select and use units to describe length and time. **The student is expected to use measuring tools to measure the length of objects to reinforce the continuous nature of linear measurement.**	This SE includes non-standard measuring tools that illustrate the continuous nature of length, but this does not preclude the use of standard measuring tools. Examples of tools may include real-world objects such as adding machine tape, ribbon, or string.
1(7)(B) **Geometry and measurement.** The student applies mathematical process standards to select and use units to describe length and time. **The student is expected to 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.**	Units of length may include manipulatives such as proportional rods and objects such as paperclips and craft sticks. Students also may use inch or centimeter cubes.
1(7)(C) **Geometry and measurement.** The student applies mathematical process standards to select and use units to describe length and time. **The student is expected to measure the same object/distance with units of two different lengths and describe how and why the measurements differ.**	In describing how and why the measurements differ, students are expected to describe the relationship between the size of the unit and the number of units needed to measure the length of an object. For example, a student may say, "I measured the distance with the white rods and the yellow rods. It took more white rods to measure the distance than yellow rods. The white rods are shorter, so I had to use more to measure the length." This SE provides support for 2(9)(E), where students are asked to describe the inverse relationship between the size of the unit and the number of units needed to equal the length of an object.
1(7)(D) **Geometry and measurement.** The student applies mathematical process standards to select and use units to describe length and time. **The student is expected to describe a length to the nearest whole unit using a number and a unit.**	When students measure length using manipulatives or objects that are linear in nature, they should use a number and a label to identify the length, such as 5 yellow rods or 5 craft sticks.
1(7)(E) **Geometry and measurement.** The student applies mathematical process standards to select and use units to describe length and time. **The student is expected to tell time to the hour and half hour using analog and digital clocks.**	The phrase "half hour" also indicates that students would recognize that 1:27 is closer to 1:30 than 1:00, so the time would be estimated as 1:30. When looking at an analog clock, students may compare the location of the minute hand between 12 and 6 to determine if a time is closer to an hour, such as 1:00, or closer to a half hour, such as 1:30. Because students begin work with fraction concepts such as halves in grade 1, it is appropriate to focus on 30 minutes as an indicator of a half hour.

TEKS: Data Analysis.	Supporting Information
1(8)(A) **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 collect, sort, and organize data in up to three categories using models/representations such as tally marks or T-charts.**	Students are expected to collect data, sort, and organize the data using models and representation such as T-charts and tally marks. The data collection takes place in response to a question. Pairing with 1(8)(B), the student will use the organized data to create a picture or bar-type graph.
1(8)(B) **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 use data to create picture and bar-type graphs.**	A picture graph is a graph that uses one picture to represent each piece of data. A bar-type graph may be partitioned into sections so that first graders may use one-to-one correspondence to count the spaces as opposed to use the length as the bar as required in 2(10)(A). The limitations of three categories found in 1(8)(A) applies to this SE. Students extend to 4 categories in grade 2. Data values should align to the Number and Operations standards for grade 1.
1(8)(C) **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 draw conclusions and generate and answer questions using information from picture and bar-type graphs.**	Answers to questions should align to the student expectations of the Number and Operations standards for grade 1, namely knowledge and skill statements 1(2), 1(3), and 1(4).

TEKS: Personal Financial Literacy.	Supporting Information
1(9)(A) **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 define money earned as income.**	Emphasis for this SE should be on the idea that income is "earned." This may include work or chores. This SE builds on K(9)(A), where students identify ways to earn income and supports 1(9)(B).
1(9)(B) **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 identify income as a means of obtaining goods and services, oftentimes making choices between wants and needs.**	This SE builds on K(9)(D), where students distinguish between wants and needs to identify income as a source to meet one's wants and needs as well as 1(9)(A).
1(9)(C) **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 distinguish between spending and saving.**	This SE builds 2(11)(A), where students calculate how money saved can accumulate into a larger amount over time, and 3(9)(E), where students list reasons to save and explain the benefits of a savings plan. Saving may include the use of a financial bank, piggy bank, etc., but are not limited to these options.
1(9)(D) **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 consider charitable giving.**	This SE build to 3(9)(F), where students identify decision involving income, spending, saving, credit, and charitable giving.