

Kindergarten Mathematics

The purpose of this document is to clarify what students should know and be able to do each grading period.

The **Competencies** listed in the table below are developed from the Texas Essential Knowledge and Skills (TEKS) for that grade level. The chart defines which quarter the Competency is reported (Q1 = Grading Period 1, Q2 = Grading Period 2, etc.)

Teachers will report on the competencies using the **Grading Progressions** which are comprised of three proficiency levels (developing (DV), progressing (PG), and proficient (PF)) and defines the knowledge and skills students will master on their pathway to proficiency. The Learning Progressions for each Competency are below the yearlong outline of the Competencies. Following the Learning Progression are the Competency Success Criteria, which define what a student knows and is able to do related to that competency at the end of a unit or quarter. To see what success on the competencies looks like in a particular unit, please see the **Public Overview** document for the course.

Students who receive a mark of “**Proficient**” meet the grade level expectation for that Competency.

Competencies	Q 1	Q 2	Q 3	Q 4
C1 — Problem Solving The student analyzes word problems by determining the important information, utilizing a strategy, creating multiple representations, communicating mathematical thinking (oral and written), and determining an answer.	X	X	X	X
C2— Numeration The student understands how to represent and compare numbers within real-world context.	X	X	X	
C3— Operations The student develops an understanding of addition and subtraction within real-world context in order to solve problems.			X	X
C4— Geometry The student analyzes attributes of two-dimensional shapes and three-dimensional solids within real-world context to develop generalizations about their properties.		X	X	
C5— Measurement The student compares measurable attributes within real-world context.				X
C6—Data Analysis The student collects and organizes data to make it useful for interpreting information within real-world context.		X		X

Learning Progression for Competency 1: Problem Solving

The student analyzes word problems by determining the important information, utilizing a strategy, creating multiple representations, communicating mathematical thinking (may be oral), and determining an answer. **1.1B, 1.1E, 1.1G**

Developing	Progressing	Proficient
<p>Identifies mathematical information in the problem</p> <p>Represents the values in the problem</p>	<p>Identifies information needed to solve the problem</p> <p>Represents the actions of the problem using tools</p> <p>Solves the word problem</p>	<p>Creates and use multiple representations to organize, record, and communicate mathematical thinking</p> <p>Justifies the answer by explaining the process used to solve the word problem</p>
<p>Success Criteria for Proficient in Problem Solving: The student can...</p> <ul style="list-style-type: none"> • use a strategy (tool and/or representation) to solve a problem such as; <ul style="list-style-type: none"> ○ count objects ○ count pictures of objects ○ counting on ○ shapes and tally marks ○ number paths ○ ten frames ○ part-part whole map (strip diagrams) ○ graphs ○ one-to-one correspondence for comparisons • write a number sentence (oral or written, e.g. 4 and 3 is 7) • justify the answer by explaining the process used to solve the word problem (may be a list of steps the student used to solve the word problem) • justify the answer by comparing the actual answer and the predicted answer 		

Learning Progression for Competency 2: Numeration

The student understands how to represent and compare numbers within real-world context.

Q1: numbers 0-10 Q2: numbers to at least 20 (unless composing and decomposing)

Developing	Progressing	Proficient
<p>Counts forward and backward with and without objects</p> <p>Recognizes instantly the quantity of a small group of objects</p> <p>Recognizes and name numbers</p>	<p>Writes and represents numbers with and without objects</p> <p>Generates a number that is one more than or one less than another number</p> <p>Generates a set using concrete and pictorial models that represent a number that is more than, less than, and equal to a given number</p>	<p>Composes and decomposes numbers with objects and pictures</p> <p>Uses comparative language to describe two sets of objects and two sets of numbers</p>
<p>Success Criteria for Proficient in Numeration:</p> <p>The student can...</p> <ul style="list-style-type: none"> • compose numbers up to 10 using <ul style="list-style-type: none"> ○ objects ○ pictures • decompose numbers up to 10 using <ul style="list-style-type: none"> ○ objects ○ pictures • explain the process of decomposing and composing numbers in context of a real-world situation • use comparative language (more than, less than, same as) to compare numbers in a real-world context using <ul style="list-style-type: none"> ○ sets of objects ○ pictorial representations ○ numerals 		

Learning Progression for Competency 3: Operations

The student develops an understanding of addition and subtraction within real-world context in order to solve problems.

Developing	Progressing	Proficient
Composes and decomposes numbers up to 10 with objects and pictures	Models the act of addition Models the act of subtraction Identifies the context of the problem as joining or separating	Solves word problems involving sums Solves word problems involving differences Explains strategies used to solve problems
<p>Success Criteria for Proficient in Operations: The student can...</p> <ul style="list-style-type: none"> • solve addition word problems with sums up to 10 using <ul style="list-style-type: none"> ○ objects ○ pictures • solve subtraction word problems with differences within 10 using <ul style="list-style-type: none"> ○ objects ○ pictures • explain the strategy used to solve problems 		

Learning Progression for Competency 4: Geometry

The student analyzes attributes of two-dimensional shapes and three-dimensional solids within real-world context to develop generalizations about their properties.

Developing	Progressing	Proficient
<p>Identifies regular and irregular two-dimensional shapes</p> <p>Creates two-dimensional shapes using a variety of materials and drawings</p> <p>Identifies attributes of two-dimensional shapes using geometric language</p>	<p>Classifies and sorts a variety of regular and irregular real-world two-dimensional shapes regardless of orientation or size</p> <p>Identifies three-dimensional solids in the real world</p> <p>Identifies two-dimensional components of three-dimensional objects</p>	<p>Classifies and sorts a variety of regular and irregular real-world three-dimensional figures regardless of orientation or size</p> <p>Describes classifications using geometric language in real-world context</p>

Success Criteria for Proficient in Geometry:

The student can...

- classify and sort three-dimensional shapes such as;
 - cylinder (e.g. can of soup)
 - cone (e.g. birthday hat)
 - sphere (e.g. ball)
 - cube (e.g. tissue box)
- describe the classifications of three-dimensional figures using geometric language
 - flat
 - curved
 - surface
 - edges
 - faces
 - vertices
 - circles
 - triangles
 - rectangles
 - squares (special rectangle)

Learning Progression for Competency 5: Measurement

The student compares measurable attributes within real-world context.

Developing	Progressing	Proficient
Identifies a way an object can be measured <ul style="list-style-type: none"> • Length • Capacity • Weight 	Identifies different ways objects can be measured <ul style="list-style-type: none"> • Length • Capacity • Weight 	Compares two objects with a common measurable attribute to see which object has more of/less of the attribute and describe the difference <ul style="list-style-type: none"> • Length • Capacity • Weight
<p>Success Criteria for Proficient in Measurement: The student can...</p> <ul style="list-style-type: none"> • compare two objects that can both have their length measured to see which object is longer, shorter, or the same • compare two objects that can both have their capacity measured to see which object holds more, hold less, or holds the same • compare two objects that can both have their weight measured to see which object is heavier, lighter, or equal to 		

Learning Progression for Competency 6: Data Analysis

The student collects and organizes data to make it useful for interpreting information within real-world context.

Developing	Progressing	Proficient
Demonstrates an understanding of sorting objects	Sorts data (when given data) into two or three categories Describes information represented in a real-object graph or picture graph	Collects, sorts, and organizes data into two or three categories Uses data to create real-object graphs or picture graphs Draws conclusions from real-object graph or picture graph

Success Criteria for Proficient in Measurement:

The student can...

- collect, sort, and organize data into two categories
 - determine a label for each category
 - describe similarities and differences to justify groupings
- collect, sort, and organize data into three categories
 - determine a label for each category
 - describe similarities and differences to justify groupings
- draw conclusions from real-object graph or picture graph
 - use comparative language to describe different sets of data within the same graph
 - summarize the data to draw a conclusion from data within the graph