



2027 Pre-K Guidelines Review Committee: Recommendations for Math, Science, and Technology Domains

LEGEND:

Additions are shown in green font with underlines.

Deletions are shown in ~~red font with strike throughs~~.

Text moved from its current location to a new location are shown ~~purple font with strike throughs~~ in the current location and shown in the new location in purple font with underlines. Text that has been moved should identify the new location and justification for the why the information was moved in the Committee Comments & Explanations column.

V. Mathematics Domain	Committee Comments & Explanations
<u>Developmental Knowledge and Considerations</u> Prekindergarten children’s mathematical understandings are built on informal experiences acquired at a very early age. For example, young children know immediately if someone gets more cookies than they do simply by looking at the amount of cookies given. Teachers can build upon these informal foundational mathematical experiences by: 1.) planning a rich environment where math concepts can be practiced, 2.) offering sequential learning experiences that give children the opportunity to learn math concepts and skills, and 3.) taking advantage of the opportunities in the classroom where mathematical reasoning is meaningful for the child. The classroom environment can effectively support mathematical competencies. Those competencies require the use of informal representation of math concepts. Abstract symbols, no matter how carefully designed or simplified, cannot involve the child’s senses the way real materials can. Real materials can be maneuvered to demonstrate the math concept concretely and can be experienced visually by the child. Concrete representation such as counters, tally marks, fingers, or other objects help children create connection to math concepts. In addition, concrete objects allow multilingual learners the opportunity to demonstrate their mathematical knowledge even if they do not have the language to express it yet. As children gain comfort with concrete representation, they will begin to use pictorial representations which prepare them for abstract representations. • Concrete representation: the child counts to five to join a set of two objects and a set of three objects. • Pictorial representation: the child uses a sketch to represent the joining of a set of two objects and a set of three objects. • Abstract representation: the child uses math symbols to represent the joining of two sets (e.g., $2 + 3 = 5$).	Recommend including a resource in the appendix that addresses the developmental progression of math skills.

Although math concepts and skills can be learned through one’s experiences, teacher-directed instruction that focuses on the progression of skills/concepts is an effective way to introduce and/or expand each child’s mathematical sense. All math concepts should be taught from the progression of easy-to-understand to the more difficult. <u>Geometry and spatial sense are used in combination with numeracy and operations for all other areas of mathematical development. All outcomes are intentionally ordered in the typical developmental progression of skills.</u> Teachers should be especially sensitive to what is known about each individual learner’s developmental skills to meet their needs most effectively. Early math instruction is not limited to a specific period or time of the day in the prekindergarten classroom. Instead, it is a natural part of any quality prekindergarten learning environment and can be incorporated throughout the day. For example, as children build with blocks, their teacher can introduce concepts such as higher, lower, in front of, beside, larger, and smaller. Children require repeated opportunities to hear, discuss, and practice math skills and concepts. These informal teachable moments should be used to reinforce and extend each student’s foundational math vocabulary. <u>Special Population Considerations</u> <u>The vocabulary included throughout the outcomes is intended to support instruction by providing children with repeated opportunities to hear, use, and build academic language through engaging, developmentally appropriate, and hands-on experiences. These activities make learning accessible for all children including emergent bilingual students and students receiving special education services. The activities should be embedded throughout daily instruction, and educators should provide multiple ways for children to demonstrate their understanding through concrete, pictorial, and abstract representations which may differ from their academic language knowledge. In addition, concrete objects allow multilingual learners the opportunity to demonstrate their mathematical knowledge even if they do not have the language to express it yet.</u> <u>Listed Domain Skills</u> The Math domain of the <i>Texas Prekindergarten Guidelines</i> is divided into the following skills: numbers <u>and operations sense, joining and separating</u>, geometry and spatial sense, measurement, and classification and patterns.	
<u>A. Numbers Sense and Operations</u> Numbers <u>and operations sense</u> is a broad term that refers to a set of prerequisite skills that are needed to perform basic math operations; it is the deep understanding of how numbers work. <u>The Numbers and Operations skills set</u> sense includes counting, <u>subitizing</u>, number recognition, understanding quantities, composing, and decomposing numbers, and making number comparisons, and <u>joining and separating</u> quantities. It is one of the strongest indicators of overall mathematics achievement. <u>These skills provide the foundation for flexible problem solving and are among the strongest indicators of later mathematic achievement.</u>	Committee Comments & Explanations Updated the name of this skill to include operations. This aligns with the K TEKS.

Prekindergarten children learn numeracy ~~number-sense~~ through play and continuous exploration in their natural environment. Prekindergarten teachers can organize experiences for children by intentionally setting up the environment to promote these learning opportunities ~~experiences~~. The prekindergarten child has innately learned much about counting and numbers from the environment they live in. They sing songs and listen to rhymes that contain numbers and can hold up the right number of fingers to show how old they are. Counting is foundational to later math concept development. To strengthen their ability to count with an understanding of quantity, the classroom should be filled with opportunities to practice the counting sequence. ~~Counting is foundational to later math concept development~~. To develop a strong understanding of quantity and, eventually, how to manipulate quantities (like joining and separating ~~adding and subtracting~~), children need an abundance of counting experiences. Prekindergarten children also begin to learn about quantities. They will understand that quantities, whether tangible or theoretical, are countable. They will also learn that numerals are used to represent the quantities. In addition to developing an initial understanding of a quantity of small groups of objects, children can compare small groups to tell if the groups are the same, if one is smaller (has less or fewer), or which group has more. An understanding of these comparisons provides an important foundation which helps the child fully grasp the relationship and correlation between one number and another at the concrete level. It is especially important that young children be given numerous opportunities during the school day to manipulate objects to internalize this mathematical concept.

A strong foundation in numeracy ~~number-sense~~ teaches children to be flexible in their problem solving. Children learn that numbers are meaningful and despite manipulation, their outcomes are constant and sensible.

2022 Texas PK3 Outcomes	2027 PK3 Outcome Recommendation	2022 Texas PK4 Outcomes	2027 PK4 Outcome Recommendation	Committee Comments & Explanations
PK3.V.A.1 Child rote counts from 1 to 10.	PK3.V.A.1 Child rote counts from 1 to 10.	PK4.V.A.1 Child rote counts from 1 to 30.	PK4.V.A.1 Child rote counts from 1 to 30.	
PK3.V.A.4 Child instantly recognizes the quantity of up to 3 objects without counting (subitizes).	PK3.V.A.42 Child instantly recognizes the quantity of up to 3 objects without counting (subitizes) <u>in organized and random arrangements</u> .	PK4.V.A.4 Child instantly recognizes the quantity of up to 6 objects without counting (subitizes).	PK4.V.A.42 Child instantly recognizes the quantity of up to 6 objects without counting (subitizes) <u>in organized and random arrangements</u> .	To align with the K TEKS and when given objects to subitize it does not always have to be in a linear order. Renumbered the outcome to align with the developmental progression of math skills.

PK3.V.A.2 Child counts up to 5 objects with one-to-one correspondence.	PK3.V.A. 2 <u>3</u> Child counts up to 5 objects with one-to-one correspondence.	PK4.V.A.2 Child counts up to 10 objects with one-to-one correspondence.	PK4.V.A. 2 <u>3</u> Child counts up to 10 objects with one-to-one correspondence.	Renumbered the outcome to align with the developmental progression of math skills.
PK3.V.A.3 Child counts up to 5 items and demonstrates cardinality by communicating that the last number indicates how many items are in the set.	PK3.V.A. 3 <u>4</u> Child counts up to 5 items and demonstrates cardinality by communicating that the last number indicates how many items are in the set.	PK4.V.A.3 Child counts up to 10 items and demonstrates cardinality by communicating that the last number indicates how many items are in the set.	PK4.V.A. 3 <u>4</u> Child counts up to 10 items and demonstrates cardinality by communicating that the last number indicates how many items are in the set.	Renumbered the outcome to align with the developmental progression of math skills.
PK3.V.A.5 Child recognizes numerals 0-5.	PK3.V.A.5 Child recognizes numerals 0-5.	PK4.V.A.5 Child recognizes numerals 0-10.	PK4.V.A.5 Child recognizes <u>names</u> numerals 0-10.	More explicit and clearer progression from PK3 to PK4.
PK3.V.A.6 Child represents quantities up to 5.	PK3.V.A.6 Child represents quantities up to 5 <u>by creating or showing sets using objects, fingers, or drawings.</u>	PK4.V.A.6 Child represents quantities up to 10.	PK4.V.A.6 Child represents quantities up to 10 <u>by creating or showing sets using objects, fingers, or drawings.</u>	Updated to define “represents” so that the outcome is clearer and explicit.
PK3.V.A.7 *There is not enough research to support the inclusion of a PK3 outcome*	<u>PK3.V.A.7 Child explores composing and decomposing sets of objects up to 5 with support.</u>	PK4.V.A.7 Child begins to understand that numbers 0-10 can be composed and decomposed in various ways to represent a quantity.	PK4.V.A.7 Child begins to understand that numbers <u>Child uses objects to represent how sets 0 up to 10 can be composed and decomposed in at least two different compositions. various ways to represent a quantity.</u>	Added a PK3 outcome to expose students to this foundational skill. For PK4, updated to be specific, clear, and documentable.
PK3.V.A.8 Child compares sets of objects up to 5 using comparative language (e.g., more than, less than, same number of).	PK3.V.A.8 Child compares <u>two sets of up to 5</u> up to 5 <u>in each set</u> using comparative language (e.g., more than, less than, same number of).	PK4.V.A.8 Child compares sets of objects up to 10 using comparative language (e.g., greater/more than,	PK4.V.A.8 Child compares <u>two sets of up to 10</u> up to 10 <u>in each set</u> using comparative language (e.g., greater/more than,	Improve specificity and clarity.

		less/fewer than, equal to/same number of).	less/fewer than, equal to/same number of).	
PK3.V.B.1 Child uses objects to demonstrate that adding one or more objects to a set will increase the number of objects in the set.	PK3.V.A.9B.1 Child uses objects <u>or pictorial models</u> to <u>demonstrate represent real world addition problems up to 5 with support</u> that adding one or more objects to a set will increase the number of objects in the set.	PK4.V.B.1 Child uses objects, pictorial models, and/or a verbal word problem to represent adding up to 5 objects.	PK4.V.A.9B.1 Child uses objects, <u>or pictorial models</u> , and/or a verbal word problem to represent <u>real-world addition problems</u> adding up to 5 objects.	PK3- improved clarity, specificity, and alignment. PK4- improved clarity and specificity.
PK3.V.B.2 Child uses objects to demonstrate that taking away one or more objects from a set will decrease the number of objects in the set.	PK3.V.A.10B.2 Child uses objects <u>or pictorial models</u> to <u>demonstrate represent real world subtraction problems up to 5 with support</u> that taking away one or more objects from a set will decrease the number of objects in the set.	PK4.V.B.2 Child uses objects, pictorial models, and/or a verbal word problem to represent subtracting objects from a set of 5.	PK4.V.A.10B.2 Child uses objects, <u>or pictorial models</u> , and/or a verbal word problem to represent <u>real-world subtraction problems</u> subtracting objects from a set of 5.	PK3- Improved clarity, specificity, and alignment. PK4- improved clarity and specificity.
B. Joining and Separating				Committee Comments & Explanations
This math skill develops the concept of more, less, and the same. Children make comparisons — an understanding of these comparisons provides an important foundation which helps the child fully grasp the relationship and correlation between one number and another at the concrete level. It is especially important that young children be given numerous opportunities during the school day to manipulate objects to internalize this mathematical concept.				Removing this skill and combining it with the Number Sense skill which is now “Number and Operations” Moved part of this skill statement to the number and operations statement.
2022 Texas PK3 Outcomes	PK3 Outcome Recommendation	Texas PK4 Outcomes	2027 PK4 Outcome Recommendation	Committee Comments & Explanations
PK3.V.B.1 Child uses objects to demonstrate that adding one or more objects to a		PK4.V.B.1 Child uses objects, pictorial models, and/or a verbal word		Moved this outcome to what has been renamed to

set will increase the number of objects in the set.		problem to represent adding up to 5 objects.		"Number and Operations" to align with K TEKS.
PK3.V.B.2 Child uses objects to demonstrate that taking away one or more objects from a set will decrease the number of objects in the set.		PK4.V.B.2 Child uses objects, pictorial models, and/or a verbal word problem to represent subtracting objects from a set of 5.		Moved this outcome to what has been renamed to "Number and Operations" to align with K TEKS.
<u>CB</u>. Geometry and Spatial Sense				Committee Comments & Explanations
The basis of geometry and spatial sense skills begins with a child who explores, <u>recognizes, compares, and</u> describes, and organizes objects according to their attributes and position/location <u>regardless of their size and orientation</u> . Through intentional classroom activities guided by teachers, children notice and describe small details in the materials they see in the <u>their</u> environment, using terms that categorize their shape and describe their relative position in space. They then progress to investigating what happens when two shapes are put together, and they can apply their ideas about location to the object's direction and distance.				
2022 Texas PK3 Outcomes	2027 PK3 Outcome Recommendation	2022 Texas PK4 Outcomes	2027 PK4 Outcome Recommendation	Committee Comments & Explanations
PK3.V.C.1 Child names and describes common 2D shapes.	PK3.V.<u>CB</u>.1 Child <u>recognizes names and describes two-dimensional</u> shapes <u>including circles, squares, rectangles, and triangles regardless of size and orientation</u> common 2D.	PK4.V.C.1 Child names and describes common 2D shapes and names at least 1 solid 3D shape.	PK4.V.<u>C</u>.1 Child names and describes common 2D <u>two-dimensional</u> shapes <u>including circles, squares, rectangles, triangles, ovals, and rhombi regardless of size and orientation</u> and names at least 1 solid 3D shape.	Changed language to align with K TEKS- "two-dimensional" Improved alignment from PK3-Kinder for a clearer progression of skills. Combined PK3.V.C.4 and PK4.V.C.4 to these outcomes.
	<u>PK3.V.B.2 Child explores three-dimensional shapes including spheres, cubes, cylinders, and cones through hands-on experiences with real objects.</u>		<u>PK4.V.B.2 Child recognizes three-dimensional shapes including spheres, cubes, cylinders, and cones.</u>	Added this outcome to align with K TEKS and to keep V.C.1 focused on 2D shapes. PK4- points, matches, sort, compare, reading books

				that include 3D shapes. Include examples that involve real objects as well as through books or pictures.
PK3.V.C.2 Child attempts to create shapes using materials and/or manipulatives.	PK3.V. CB.23 Child attempts to create <u>creates shapes including circles, squares, rectangles, and triangles using materials and/or manipulatives with support.</u>	PK4.V.C.2 Child creates shapes using materials and/or manipulatives.	PK4.V. CB.23 Child creates shapes <u>including circles, squares, rectangles, triangles, ovals, and rhombi using materials and/or manipulatives.</u>	Improved specificity and clarity.
PK3.V.C.3 Child begins to use language to describe position of objects.	PK3.V. CB.34 Child begins to uses language <u>positional words including in, on, and under to describe position of objects with support.</u>	PK4.V.C.3 Child demonstrates use of position words.	PK4.V. CB.34 Child <u>uses positional words including first, last, above, below, front, behind, next to, and between</u> demonstrates use of position words.	Improved for specificity and clarity. Based on research, ordinal words were added since the ordinal outcome was removed in 2022. Bower et. al. 2020
PK3.V.C.4 Child recognizes common shapes, regardless of size.	PK3.V.C.4 Child recognizes common shapes, regardless of size.	PK4.V.C.4 Child recognizes common shapes, regardless of orientation and size.	PK4.V.C.4 Child recognizes common shapes, regardless of orientation and size.	Integrated this in the V.C.1 outcome.
<u>DC</u>. Measurement				Committee Comments & Explanations
<u>Measurement skills develop as children explore, recognize, compare, and describe attributes of people, objects or time.</u> Young children can recognize differences in the measurable aspects of objects by saying things like “Her cup is less full than mine” or “My dog is heavier than your dog because he is bigger”. Classroom activities that include explorations of weight, length, and capacity, <u>and time</u> should involve children in hands-on learning using measurement tools. Teachers can introduce and reinforce terms associated with measurement, such as longer, shorter, heavier, and lighter. Early measurement skills begin with comparisons before progressing to using a unit to measure.				
2022 Texas PK3 Outcomes	2027 PK3 Outcome Recommendation	2022 Texas PK4 Outcomes	2027 PK4 Outcome Recommendation	Committee Comments & Explanations
PK3.V.D.1 Child understands that lengths	PK3.V. DC.1 Child understands that <u>explores the heights or lengths of</u>	PK4.V.D.1 Child recognizes and compares heights or	PK4.V. DC.1 Child recognizes and compares <u>the attributes of heights or</u>	Improved for clarity and specificity.

of objects can vary and be compared.	<u>people or objects and uses language including bigger, smaller, longer, shorter, or taller with support</u> can vary and be compared.	lengths of people or objects.	lengths of people or objects <u>using language including longer, shorter, taller, higher, lower or same.</u>	
PK3.V.D.2 Child begins to recognize capacity based on how much space exists within an object.	PK3.V. DC .2 Child begins to recognize <u>explores the capacity of containers through hands-on experiences with liquids and other materials and uses language including full or empty with support</u> based on how much space exists within an object.	PK4.V.D.2 Child recognizes and compares capacity based on how much space exists within an object.	PK4.V. DC .2 Child recognizes and compares <u>the capacity of containers through hands-on experiences with liquids and other materials and uses language including full, empty, more, less, or same amount</u> based on how much space exists within an object.	Improved for clarity and specificity.
PK3.V.D.3 Child understands that weights of objects can vary and be compared.	PK3.V. DC .3 Child <u>explores</u> understands that the <u>weights of objects through hands-on experiences using language including heavy or light with support</u> can vary and be compared.	PK4.V.D.3 Child recognizes and compares weights of objects.	PK4.V. DC .3 Child recognizes and compares <u>the weights of objects through hands-on experiences using language including heavy, light, more, or less.</u>	Improved for clarity and specificity.
PK3.V.D.4 Child shows awareness of the passage of time within a day.	PK3.V. DC .4 Child <u>recognizes</u> shows <u>awareness of the passage of time within a day</u> <u>using language including now, next, or later with support.</u>	PK4.V.D.4 Child uses language to describe concepts associated with the passing of time within a day.	PK4.V. DC .4 Child uses <u>language to describes</u> <u>concepts associated with the passing of time within a day</u> <u>using language including now, next, later, before, after, morning, or afternoon.</u>	Improved for clarity and specificity.
<u>ED</u>. Classification & Patterns				Committee Comments & Explanations
<u>Classification and pattern skills develop as children recognize similarities and differences, identify attributes, and begin to notice, create, and extend patterns through play and daily routines. These experiences lay the foundation for logical reasoning, problem solving, and later mathematical concepts.</u> Children can sort and classify objects according to one or more of their characteristics. With guidance, they learn how to arrange a pattern so that an attribute repeats itself over				

~~and over~~ in a predictable manner. ~~In their interaction with adults and peers, children use foundational math vocabulary, picking up words used for comparison, position, and sequencing.~~ As children progress, they extend their comparing skills by creating visual representations of objects in the form of graphs.

2022 Texas PK3 Outcomes	2027 PK3 Outcome Recommendation	2022 Texas PK4 Outcomes	2027 PK4 Outcome Recommendation	Committee Comments & Explanations
PK3.V.E.1 Child sorts objects that are the same and different.	PK3.V. ED .1 Child sorts objects <u>based on one attribute such as color, shape, or size</u> that are the same and different.	PK4.V.E.1 Child sorts objects that are the same and different into groups and uses language to describe how the groups are similar and different.	PK4.V. ED .1 Child sorts objects <u>into groups based on shared attributes such as color, shape, or size</u> that are the same and different into groups and uses language to <u>and describes</u> how the groups are similar and different.	Improved for clarity and specificity. PK4- the reason there are two verbs within this outcome is to show a clear progression from PK3 to PK4.
PK3.V.E.3 Child recognizes and duplicates patterns.	PK3.V. ED . 32 Child recognizes and duplicates <u>simple repeating AB patterns using objects, actions, or sounds.</u>	PK4.V.E.3 Child recognizes, duplicates, extends, and creates patterns.	PK4.V. ED . 32 Child recognizes, duplicates, extends, and creates <u>simple repeating AB AAB, and ABB patterns using objects, actions, or sounds.</u>	
	<u>PK3.V.D.3 *There is not enough research to support the inclusion of a PK3 outcome*</u>		<u>PK4.V.D.3 Child extends and creates simple repeating AB, AAB, or ABB patterns using objects, actions, or sounds with support.</u>	Created a separate outcome from PK4.V.E.3 since this is a more rigorous and different skill.
PK3.V.E.2 Child participates in group activities of collecting data and organizing it into graphic representations.	PK3.V. ED . 24 Child participates in group activities of collecting data and <u>contributing to creating a simple graph or chart with adult support</u> organizing it into graphic representations.	PK4.V.E.2 Child collects data and organizes it in a graphic representation.	PK4.V. ED . 24 Child <u>participates in group activities of collecting data, contributing to creating a simple graph or chart, and describing the results with adult support</u> collects data	Improved specificity and clarity.

			and organizes it in a graphic representation.	
VI. Science Domain				Committee Comments & Explanations
<u>Developmental Knowledge and Considerations</u> Young children often think that events simply happen without a specific cause or effect. To mature past this developmental stage, prekindergarten children need exposure to inquiry-based science, which gives them the opportunity to explore and to make sense of their world with adult guidance. This allows children to be curious about the environment in which they live, ask a lot of questions, make observations, describe what they experience using their five senses, and make tentative explanations that can be shared with others. Children’s curiosity creates a natural desire to watch, explore, question, and understand the world around them. Science concepts for prekindergarten children should be developmentally appropriate, interesting, and engaging, and able to be studied from multiple perspectives, in depth, and over time. When children have many and varied opportunities to explore a concept, they come to the final stage of scientific inquiry with a rich set of experiences to which they base their reflections and their developing theories. Although children can easily learn science as they observe and interact daily, it is the teacher’s role to provide a learning environment that offers discovery and exploration through hands-on opportunities. These opportunities are particularly helpful for multilingual learners who may not be able to explain what they know or have learned in a second language. Children should be encouraged to be curious, ask questions, work collaboratively, plan investigations, record their observations, and discuss their findings. In addition, science provides a unique context for developing vocabulary, literacy, and math skills and concepts. <u>Special Population Considerations</u> These Hands-on opportunities are particularly helpful for multilingual learners who may not be able to explain what they know or have learned in a second language. Teachers should intentionally model and reinforce science vocabulary while using visuals, gestures, real objects, investigations, and interactive conversations to make learning accessible for all children. Teachers should consider that a child’s ability to communicate scientific understanding may differ from their ability to express that understanding using academic language. <u>Listed Domain Skills</u> The Science domain of the Texas Prekindergarten Guidelines is divided into the following skills: <u>scientific inquiry</u>, physical science, life science, and earth and space science, <u>and engineering</u>.				
<u>A. Scientific Inquiry</u>				
<u>Scientific inquiry develops as children explore the world around them through curiosity, observation, and hands-on investigations. Children use their senses and a variety of age-appropriate scientific tools to explore, ask questions, make observations, compare results, and make predictions. As children progress, they move from exploring and observing to</u>				Added this skill to align with kindergarten TEKS.

identifying patterns, making predictions, and solving simple problems. Scientific inquiry builds the foundation for scientific thinking.				
2022 Texas PK3 Outcomes	2027 PK3 Outcome Recommendation	2022 Texas PK4 Outcomes	2027 PK4 Outcome Recommendation	Committee Comments & Explanations
	<u>PK3.VI.A.1 Child explores simple scientific tools to learn about objects.</u>		<u>PK4.VI.A.1 Child uses simple scientific tools to learn about objects.</u>	Moved this outcome from skill A.
	<u>PK3.VI.A.2 Child displays curiosity by asking questions.</u>		<u>PK4.VI.A.2 Child asks questions based on observations.</u>	
	<u>PK3.VI.A.3 Child participates in simple investigations with adult support.</u>		<u>PK4.VI.A.3 Child makes predictions and conducts simple investigations with support.</u>	
AB. Physical Science				Committee Comments & Explanations
Physical science skills develop as Prekindergarten children begin to explore properties of materials, positions, and motion of objects through investigations. These explorations using the senses continue as children <u>use their senses</u> use attributes to classify and sort objects, make observations and predictions, problem solve, question, and compare. Children learn about sources of energy by investigating and discussing light, heat, electricity, and magnetism. <u>Children observe, compare, and describe the observable properties of common materials, investigate how objects move and interact, and explore the effects of light in everyday life.</u> This builds an early understanding of life science, physical science, earth science and chemistry. Processes such as observing and recording data, posing questions, predicting, investigating, and drawing conclusions can provide experiences to support literacy, math, and the sciences.				
2022 Texas PK3 Outcomes	2027 PK3 Outcome Recommendation	2022 Texas PK4 Outcomes	2027 PK4 Outcome Recommendation	Committee Comments & Explanations
No PK3 outcomes for this domain of learning.	<u>PK3.VI.B.1 Child explores observable properties of objects and materials using senses.</u>	PK4.VI.A.1 Child observes, investigates, describes, and discusses characteristics of common objects.	<u>PK4.VI.AB.1 Child identifies and compares</u> observes, investigates, and describes, <u>and discusses observable properties characteristics of common objects such as color, shape, texture, and size.</u>	Removed “common” to align with other outcomes. Improved clarity and specificity. Aligned language to K TEKS.

No PK3 outcomes for this domain of learning.	<u>PK3.VI.B.2 Child explores the movement of objects.</u>	PK4.VI.A.2 Child observes, investigates, describes, and discusses position and motion of objects.	PK4.VI.AB.2 Child observes, investigates cause and effect of push/pull/collision that makes objects start, stop, and change direction and position describes, and discusses position and motion of objects.	Removed “discusses” due to redundancy. Greater alignment and progression with kindergarten.
No PK3 outcomes for this domain of learning.		PK4.VI.A.3 Child uses simple scientific tools to learn about objects.	PK4.VI.A.3 Child uses simple scientific tools to learn about objects.	Moved this outcome to the new skill “Scientific Inquiry” and created an outcome for PK3.
No PK3 outcomes for this domain of learning.	<u>PK3.VI.B.3 Child explores light and shadows through play.</u>	PK4.VI.A.4 Child observes, investigates, describes, and discusses sources of energy including light, heat, and electricity.	PK4.VI.AB.43 Child observes, investigates, describes, and discusses sources of energy including how the position of a light source or object affects shadows, heat, and electricity.	Added a PK3 outcome to provide exposure and foundational skills. Research supports exploration for PK3. Greater alignment and progression with kindergarten. K TEKS focuses on light sources.
BC. Life Science				Committee Comments & Explanations
<u>Life science skills develop when children have opportunities to explore, observe, and investigate various living organisms through hands-on experiences. Through these experiences, children are encouraged to use newly acquired vocabulary to describe and discuss their observations. Children develop an understanding of observable characteristics, life cycles, habitats, and the relationships between living things and their environment. Young children have a keen interest in studying living things, including the unique features of plants and animals, the environments in which they live, and what each living thing needs to thrive. Effective teachers provide opportunities for children to explore, observe, and investigate various organisms through hands-on experiences. Through these experiences, children are encouraged to use newly acquired vocabulary to describe and discuss their observations.</u>				

2022 Texas PK3 Outcomes	2027 PK3 Outcome Recommendation	2022 Texas PK4 Outcomes	2027 PK4 Outcome Recommendation	Committee Comments & Explanations
No PK3 outcomes for this domain of learning.	<u>PK3.VI.C.1 Child explores the characteristics of living organisms.</u>	PK4.VI.B.1 Child observes, investigates, describes, and discusses the characteristics of organisms.	PK4.VI.BC.1 Child observes, investigates, describes, and discusses the characteristics of <u>living organisms.</u>	Added a PK3 outcome to provide exposure and foundational skills. Research supports exploration for PK3. Removed “discusses” due to redundancy. Greater alignment and progression with kindergarten.
No PK3 outcomes for this domain of learning.	<u>PK3.VI.C.2 Child explores how living organisms change and grow.</u>	PK4.VI.B.2 Child observes, describes, and discusses the life cycles of organisms.	PK4.VI.BC.2 Child observes, describes, and discusses <u>recognizes the changes life cycles of living organisms over their lifespan.</u>	Added a PK3 outcome to provide exposure and foundational skills. Research supports exploration for PK3. Greater alignment and progression with kindergarten.
No PK3 outcomes for this domain of learning.	<u>PK3.VI.C.3 Child explores caring for plants or animals with adult support.</u>	PK4.VI.B.3 Child observes, investigates, describes, and discusses the relationship of organisms in their environments.	PK4.VI.BC.3 Child recognizes <u>observes, investigates, describes, and discusses the relationship of organisms in their environments how living organisms need water, food, air, and/or shelter to live and grow.</u>	Added a PK3 outcome to provide exposure and foundational skills. Research supports exploration for PK3. Greater alignment and progression with kindergarten.
<u>ED</u>. Earth & Space Science				Committee Comments & Explanations

Earth and space science skills develop as children ~~Young children are innately curious about~~ explore through play, outdoor investigations, and daily routines. This includes children investigating earth materials such as rocks, soil, sand, and water, observing weather patterns and changes, identifying common objects in the sky, including the Sun, Moon, clouds, and stars. ~~nature and the outdoors. When given the opportunity, they love to play with earth's materials — sand, dirt, water, and rocks. They are aware of weather conditions and wonder why the weather changes from day to day. They notice the clouds in the sky, and they observe that the sun moves across the sky each day and the moon changes shape. These concepts are all a part of earth and space science.~~ Studying earth and space science expands young children's vocabulary and guides them to discover their place in the world by understanding how they can impact their environment with positive actions.

2022 Texas PK3 Outcomes	2027 PK3 Outcome Recommendation	2022 Texas PK4 Outcomes	2027 PK4 Outcome Recommendation	Committee Comments & Explanations
No PK3 outcomes for this domain of learning.	<u>PK3.VI.D.1 Child explores earth materials such as rocks, soil, sand, and water through their senses.</u>	PK4.VI.C.1 Child observes, investigates, describes, and discusses earth materials, and their properties and uses.	PK4.VI.CD.1 Child observes, investigates, describes, and discusses earth materials, and their properties of <u>PK4.VI.CD.1 Child recognizes earth materials such as rocks, soil, sand, and water and their uses.</u>	Added a PK3 outcome to provide exposure and foundational skills. Research supports exploration for PK3. Greater alignment and progression with kindergarten.
No PK3 outcomes for this domain of learning.	<u>PK3.VI.D.2 Child explores common objects in the sky such as Sun, Moon, clouds, and stars.</u>	PK4.VI.C.2 Child identifies, observes, describes, and discusses objects in the sky.	PK4.VI.CD.2 Child identifies, observes, describes, and discusses <u>PK4.VI.CD.2 Child identifies common objects in the sky such as Sun, Moon, clouds, and stars.</u> Identifies and describes common objects in the sky	Added a PK3 outcome to provide exposure and foundational skills. Research supports exploration for PK3. Greater alignment and progression with kindergarten.
No PK3 outcomes for this domain of learning.	<u>PK3.VI.D.3 Child observes changes in weather, day and night, and seasons with support.</u>	PK4.VI.C.3 Child observes and describes what happens during changes in the earth and sky.	PK4.VI.CD.3 Child observes and describes <u>PK4.VI.CD.3 Child recognizes patterns and changes in weather, day and night, and seasons.</u> what happens	Added a PK3 outcome to provide exposure and foundational skills. Research supports observation for PK3.

			during changes in the earth and sky.	Greater alignment and progression with kindergarten.
No PK3 outcomes for this domain of learning.	<u>PK3.VI.D.4 Child explores ways to care for the environment with support.</u>	PK4.VI.C.4 Child demonstrates an understanding of the importance of caring for our environment and our planet.	PK4.VI.CD.4 Child demonstrates an understanding of the importance of participating in caring for our the environment and our planet.	Added a PK3 outcome to provide exposure and foundational skills. Research supports exploration for PK3.
E. Engineering				
<u>Engineering skills develop in natural play settings through exploration with a variety of materials and tools. Children use creativity, curiosity, and problem-solving skills to design simple structures. Over time, children may purposefully build, test, and improve solutions to simple problems. Engineering is an integrated area of learning that allows children to apply both their science and mathematical concepts such as their knowledge of materials, measurement, motion, and spatial relationships to make decisions, evaluate results, and improve their designs.</u>				Added the engineering skill to the science domain to align with the K TEKS.
	<u>PK3.VI.E.1 Child explores a variety of materials to build or create.</u>		<u>PK4.VI.E.1 Child selects and uses appropriate tools and materials to build or create.</u>	
	<u>PK3.VI.E.2 Child recognizes problems and explores various solutions.</u>		<u>PK4.VI.E.2 Child plans, constructs, and tests simple structures to solve a problem.</u>	
X. Technology Applications Domain				Committee Comments & Explanations
<u>Developmental Knowledge and Considerations</u> <u>Technology is an integrated area of learning that supports children's creativity, communication, and problem-solving when used intentionally and in developmentally appropriate ways. Young children learn best through hands-on, play-based experiences; therefore, technology should complement—not replace—active exploration, social interaction, and meaningful engagement with materials, peers, and adults. Children participate in teacher-guided technology experiences to gather information, document learning, communicate ideas, and solve simple problems. Educators should intentionally</u>				

<u>model responsible, safe, and purposeful technology use while providing opportunities for children to collaborate and apply digital tools across learning domains.</u> <u>Consistent with recommendations from the American Academy of Pediatrics, screen time in prekindergarten should be purposeful, teacher-directed, and developmentally appropriate, supporting active engagement, creativity, and collaboration rather than passive or prolonged screen use. Technology should enhance hands-on learning experiences and should never replace meaningful interactions with teachers, peers, and the physical environment.</u> Technology can greatly enhance learning experiences for prekindergarten children, but it is critical that young children learn about the appropriate use of technology and interactive media. It can enhance active, hands-on, creative, and authentic engagement with others and with the world, but it must be used with intentionality. Technology should not replace face-to-face instruction. Regular access and exposure to computers and related technology including challenging learning applications, programs, and websites, can provide opportunities for children to expand their ability to acquire information, solve problems, and communicate. These technologies serve as important learning tools and are integrated throughout the instructional program to enrich learning of curriculum content and concepts. Providing access to a variety of technologies is critical in the development of skills that young children need to learn and grow in the 21st century. <u>Special Population Considerations</u> <u>Technology can support access to learning for all children, including emergent bilingual learners and students receiving special education services. Teachers should intentionally use visuals, audio supports, translation tools, adaptive features, and alternative methods of communication to increase participation, reduce barriers, and provide multiple ways for children to engage with and demonstrate their learning. Technology should enhance accessibility while remaining teacher-directed, purposeful, and developmentally appropriate.</u> <u>Listed Domain Skills</u> The Technology Applications Domain of the <i>Texas Prekindergarten Guidelines</i> includes only one skill: technology <u>use</u>. and devices.	
A. Technology <u>Use</u> and Devices	Committee Comments & Explanations
<u>Technology use in prekindergarten focuses on helping children develop an understanding of how technology supports learning and everyday life through purposeful, teacher-guided experiences. Children explore how digital and non-digital technologies help people gather information, communicate, and solve problems. Technology should be used intentionally to support classroom learning and enrich hands-on experiences rather than replace teacher-led instruction, active exploration, purposeful play, or meaningful interactions with teachers and peers.</u>	Updated the name of this skill to “technology use” to better reflect the outcomes.

Prekindergarten children learn how technology can enhance our lives. Surrounded by technology, children can benefit from becoming aware of and interacting with digital media and a variety of other available technology. They develop techniques for handling and controlling various devices, becoming increasingly confident and independent users of developmentally appropriate interactive media.				
2022 Texas PK3 Outcomes	2027 PK3 Outcome Recommendation	2022 Texas PK4 Outcomes	2027 PK4 Outcome Recommendation	Committee Comments & Explanations
No PK3 outcomes for this domain of learning.		PK4.X.A.1 Child opens and navigates through digital learning applications and programs, when appropriate.	PK4.X.A.1 Child opens and navigates through digital learning applications and programs, when appropriate.	Moving away from child-led technology due to current research and toward teacher-led technology use, therefore, this outcome is not necessary.
No PK3 outcomes for this domain of learning.		PK4.X.A.2 Child uses and names a variety of digital tools that support and enhance learning.	PK4.X.A.2 ¹ Child <u>explores how digital and non-digital technology helps people learn and solve problems with adult support</u> uses and names a variety of digital tools that support and enhance learning.	
No PK3 outcomes for this domain of learning.		X.A.3 Child uses digital learning applications to contribute to class-made digital products that express own ideas, as appropriate.	X.A.3 Child uses digital learning applications to contribute to class-made digital products that express own ideas, as appropriate.	Moving away from child-led technology due to current research and toward teacher-led technology use, therefore, this outcome is not necessary.
No PK3 outcomes for this domain of learning.		PK4.X.A.4 Child uses technology to access appropriate information, with adult assistance.	PK4.X.A.4 ² Child <u>participates in shared</u> uses technology <u>experiences to</u> access appropriate information, with adult support <u>assistance.</u>	
No PK3 outcomes for this domain of learning.		PK4.X.A.5 Child practices safe behavior while using digital tools and resources.	PK4.X.A.5 Child practices safe behavior while using digital tools and resources.	Moving away from child-led technology due to current research and toward teacher-led technology use,

				therefore, this outcome is not necessary.
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