

TEXES
Texas Examinations of Educator Standards

Field 101: Generalist EC–4
Test Framework

Domain	Range of Competencies
I. English Language Arts and Reading	001–011
II. Mathematics	012–015
III. Social Studies	016–019
IV. Science	020–023
V. Fine Arts, Health, and Physical Education	024–027

TEST FRAMEWORK FOR FIELD 101: GENERALIST EC–4

Domain I English Language Arts and Reading (approximately 40% of the test)

Standards Assessed:

English Language Arts and Reading (EC–4) Standards I–X:

Oral Language: Teachers of young children understand the importance of oral language, know the developmental processes of oral language, and provide a variety of instructional opportunities for young children to develop listening and speaking skills.

Phonological and Phonemic Awareness: Teachers of young children understand the components of phonological and phonemic awareness and utilize a variety of approaches to help young children develop this awareness and its relationship to written language.

Alphabetic Principle: Teachers of young children understand the importance of the alphabetic principle to reading English, know the elements of the alphabetic principle, and provide instruction that helps children understand that printed words consist of graphic representations that relate to the sounds of spoken language in conventional and intentional ways.

Literacy Development and Practice: Teachers of young children understand that literacy develops over time and progresses from emergent to proficient stages. Teachers use a variety of contexts to support the development of young children's literacy.

Word Analysis and Decoding: Teachers understand the importance of word analysis and decoding to reading and provide many opportunities for children to improve their word analysis and decoding abilities.

Reading Fluency: Teachers understand the importance of fluency to reading comprehension and provide many opportunities for children to improve their reading fluency.

Reading Comprehension: Teachers understand the importance of reading for understanding, know the components of comprehension, and teach young children strategies for improving their comprehension.

Development of Written Communication: Teachers understand that writing to communicate is a developmental process and provide instruction that helps young children develop competence in written communication.

Writing Conventions: Teachers understand how young children use writing conventions and how to help children develop those conventions.

Assessment and Instruction of Developing Literacy: Teachers understand the basic principles of assessment and use a variety of literacy assessment practices to plan and implement literacy instruction for young children.

Domain II Mathematics (approximately 15% of the test)

Standards Assessed:

Mathematics Standards I–VIII:

Number Concepts: The mathematics teacher understands and uses numbers, number systems and their structure, operations and algorithms, quantitative reasoning, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in order to prepare students to use mathematics.

Patterns and Algebra: The mathematics teacher understands and uses patterns, relations, functions, algebraic reasoning, analysis, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in order to prepare students to use mathematics.

Geometry and Measurement: The mathematics teacher understands and uses geometry, spatial reasoning, measurement concepts and principles, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in order to prepare students to use mathematics.

Probability and Statistics: The mathematics teacher understands and uses probability and statistics, their applications, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in order to prepare students to use mathematics.

Mathematical Processes: The mathematics teacher understands and uses mathematical processes to reason mathematically, to solve mathematical problems, to make mathematical connections within and outside of mathematics, and to communicate mathematically.

Mathematical Perspectives: The mathematics teacher understands the historical development of mathematical ideas, the interrelationship between society and mathematics, the structure of mathematics, and the evolving nature of mathematics and mathematical knowledge.

Mathematical Learning and Instruction: The mathematics teacher understands how children learn and develop mathematical skills, procedures, and concepts, knows typical errors students make, and uses this knowledge to plan, organize, and implement instruction; to meet curriculum goals; and to teach all students to understand and use mathematics.

Mathematical Assessment: The mathematics teacher understands assessment and uses a variety of formal and informal assessment techniques appropriate to the learner on an ongoing basis to monitor and guide instruction and to evaluate and report student progress.

Domain III Social Studies (approximately 15% of the test)

Standards Assessed:

Social Studies Standards I–X:

The social studies teacher has a comprehensive knowledge of the social sciences and recognizes the value of the social sciences.

The social studies teacher effectively integrates the various social science disciplines.

The social studies teacher uses knowledge and skills of social studies, as defined by the Texas Essential Knowledge and Skills (TEKS), to plan and implement effective curriculum, instruction, assessment, and evaluation.

History: The social studies teacher applies knowledge of significant historical events and developments, as well as of multiple historical interpretations and ideas, in order to facilitate student understanding of relationships between the past, the present, and the future.

Geography: The social studies teacher applies knowledge of people, places, and environments to facilitate students' understanding of geographic relationships in Texas, the United States, and the world.

Economics: The social studies teacher knows how people organize economic systems to produce, distribute, and consume goods and services, and uses this knowledge to enable students to understand economic systems and make informed economic decisions.

Government: The social studies teacher knows how governments and structures of power function, provide order, and allocate resources, and uses this knowledge to facilitate student understanding of how individuals and groups achieve their goals through political systems.

Citizenship: The social studies teacher understands citizenship in the United States and other societies, and uses this knowledge to prepare students to participate in our society through an understanding of democratic principles and citizenship practices.

Culture: The social studies teacher understands cultures and how they develop and adapt, and uses this knowledge to enable students to appreciate and respect cultural diversity in Texas, the United States, and the world.

Science, Technology, and Society: The social studies teacher understands developments in science and technology, and uses this knowledge to facilitate student understanding of the social and environmental consequences of scientific discovery and technological innovation.

Domain IV Science (approximately 15% of the test)

Standards Assessed:

Science Standards I–XI:

The science teacher manages classroom, field, and laboratory activities to ensure the safety of all students and the ethical care and treatment of organisms and specimens.

The science teacher understands the correct use of tools, materials, equipment, and technologies.

The science teacher understands the process of scientific inquiry and its role in science instruction.

The science teacher has theoretical and practical knowledge about teaching science and about how students learn science.

The science teacher knows the varied and appropriate assessments and assessment practices to monitor science learning.

The science teacher understands the history and nature of science.

The science teacher understands how science affects the daily lives of students and how science interacts with and influences personal and societal decisions.

The science teacher knows and understands the science content appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in physical science.

The science teacher knows and understands the science content appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in life science.

The science teacher knows and understands the science content appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in Earth and space science.

The science teacher knows unifying concepts and processes that are common to all sciences.

Domain V Fine Arts, Health, and Physical Education (approximately 15% of the test)

Standards Assessed:

Art Standards I–V:

The art teacher understands how ideas for creating art are developed and organized from the perception of self, others, and natural and human-made environments.

The art teacher understands the skills and techniques needed for personal and creative expression through the creation of original works of art in a wide variety of media and helps students develop those skills and techniques.

The art teacher understands and promotes students' appreciation of art histories and diverse cultures.

The art teacher understands and conveys the skills necessary for analyzing, interpreting, and evaluating works of art and is able to help students make informed judgments about personal artworks and those of others.

The art teacher understands how children develop cognitively and artistically and knows how to implement effective, age-appropriate art instruction and assessment.

Music Standards I, III, V, VI, VII, and IX:

The music teacher has a comprehensive visual and aural knowledge of musical perception and performance.

The music teacher has a comprehensive knowledge of music notation.

The music teacher has a comprehensive knowledge of music history and the relationship of music to history, society, and culture.

The music teacher applies a comprehensive knowledge of music to evaluate musical compositions, performances, and experiences.

The music teacher understands how to plan and implement effective music instruction and provides students with learning experiences that enhance their musical knowledge, skills, and appreciation.

The music teacher understands student assessment and uses assessment results to design instruction and promote student progress.

Health Standards I and III:

The health teacher applies knowledge of both the relationship between health and behavior and the factors influencing health and health behavior.

The health teacher plans and implements effective school health instruction and integrates health instruction with other content areas.

Physical Education Standards I–VI:

The physical education teacher demonstrates competency in a variety of movement skills and helps students develop these skills.

The physical education teacher understands principles and benefits of a healthy, physically active lifestyle and motivates students to participate in activities that promote this lifestyle.

The physical education teacher uses knowledge of individual and group motivation and behavior to create and manage a safe, productive learning environment and promotes students' self-management, self-motivation, and social skills through participation in physical activities.

The physical education teacher uses knowledge of how students learn and develop to provide opportunities that support students' physical, cognitive, social, and emotional development.

The physical education teacher provides equitable and appropriate instruction for all students in a diverse society.

The physical education teacher uses effective, developmentally appropriate instructional strategies and communication techniques to prepare physically educated individuals.

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DOMAIN I—ENGLISH LANGUAGE ARTS AND READING

Competency 001 (Oral Language)

The teacher understands the importance of oral language, knows the developmental processes of oral language, and provides children with varied opportunities to develop listening and speaking skills.

The beginning teacher:

- Knows basic linguistic concepts (e.g., phonemes, semantics, syntax, pragmatics).
- Knows developmental stages in acquiring oral language, including stages in phonology, semantics, syntax, and pragmatics, and recognizes that individual variations occur within and across languages.
- Plans and implements systematic oral language instruction based on informal and formal assessment of children's oral language development and addresses individual children's strengths, needs, and interests.
- Recognizes when speech or language delays or differences warrant in-depth evaluations and additional help or interventions.
- Designs a variety of one-on-one and group activities (e.g., meaningful and purposeful conversations, dramatic play, language play, stories, songs, rhymes, games, discussions, questioning, sharing information) to build on children's current oral language skills.
- Selects and uses instructional materials and strategies that promote children's oral language development; reflect cultural diversity; and respond to the strengths, needs, and interests of individual children, including English Language Learners.
- Selects and uses instructional strategies to build on children's cultural, linguistic, and home backgrounds to enhance their oral language development, including using the home language to develop English.
- Understands relationships between oral language and literacy development and provides instruction that interrelates oral and written language to promote children's reading proficiency (e.g., preview-review, discussion, questioning).

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- Selects and uses instructional materials, strategies, and activities to strengthen children's oral vocabulary and narrative skills in spoken language and to help children connect spoken and printed language (e.g., planned "read alouds").
- Provides instruction and opportunities for children to develop skills for adapting spoken language for various audiences, purposes, and occasions.
- Understands listening skills for various purposes (e.g., critical listening to evaluate a speaker's message, listening to enjoy and appreciate spoken language) and provides children with opportunities to engage in active, purposeful listening in a variety of contexts.
- Provides instruction and opportunities for children to evaluate the content and effectiveness of their own spoken messages and those of others.
- Selects and uses appropriate technologies to develop children's oral communication skills.
- Understands how to foster collaboration with families and with other professionals to promote all children's oral language development.

Competency 002 (Phonological and Phonemic Awareness)

The teacher understands phonological and phonemic awareness and employs a variety of approaches to help children develop phonological and phonemic awareness.

The beginning teacher:

- Understands the significance of phonological and phonemic awareness for reading, is familiar with typical patterns in the development of phonological and phonemic awareness, and recognizes that individual variations occur.
- Understands differences in children's development of phonological and phonemic awareness and adjusts instruction to meet the needs of individual children, including English Language Learners.
- Plans, implements, and adjusts instruction based on the continuous use of formal and informal assessments of individual children's phonological development.
- Uses a variety of instructional approaches and materials (e.g., language games, informal interactions, direct instruction) to promote children's phonological and phonemic awareness.
- Understands how to foster collaboration with families and with other professionals to promote all children's phonological and phonemic awareness both at school and at home.

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Competency 003 (Alphabetic Principle)

The teacher understands the importance of the alphabetic principle for reading English and provides instruction that helps children understand the relationship between printed words and spoken language.

The beginning teacher:

- Understands the elements of the alphabetic principle, including letter names, graphophonemic knowledge, and the relationship of the letters in printed words to spoken language.
- Understands expected patterns of children's alphabetic skills development and knows that individual variations may occur.
- Understands that many alphabetic languages are more phonetically regular than English, that not all written languages are alphabetic, and that English Language Learners' use of the alphabetic principle may vary based on language background.
- Selects and uses instructional strategies and materials to provide focused instruction on the letters of the alphabet and the relationships between sounds and letters.
- Uses a variety of instructional materials and strategies, including multisensory techniques, to promote children's understanding of the elements of the alphabetic principle.
- Uses formal and informal assessments to analyze individual children's alphabetic skills, monitor learning, and plan instruction.
- Understands how to foster collaboration with parents and with other professionals to promote all children's development of alphabetic knowledge.

Competency 004 (Literacy Development)

The teacher understands that literacy develops over time, progressing from emergent to proficient stages, and uses a variety of approaches to support the development of children's literacy.

The beginning teacher:

- Understands that literacy acquisition develops in an often predictable pattern from prereading (sometimes referred to as *emergent literacy*) to conventional literacy and that individual variations occur in literacy acquisition.
- Understands that the developing reader has a growing awareness of print in the environment, the sounds in spoken words, and the uses of print.
- Selects and uses instructional strategies, materials, and activities to assist young children in distinguishing letter forms from number forms and text from pictures.

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- Understands that literacy development occurs in multiple contexts through reading, writing, and the use of oral language.
- Selects and uses instructional strategies, materials, and activities that focus on functions of print and concepts about print, including concepts involving book handling, parts of a book, orientation, directionality, and the relationships between written and spoken words.
- Demonstrates familiarity with children's literature and provides multiple opportunities for children to listen and respond to a wide variety of children's literature, both fiction and nonfiction, and to interact with others about literature.
- Teaches children about authors and their purposes for writing.
- Selects and uses appropriate technology to help children gain access to a wide range of narrative and expository texts.
- Uses formal and informal assessments of children's literacy development to plan, implement, and adjust instruction to meet the needs of individual children, including English Language Learners.
- Understands how to foster collaboration with families and with other professionals to promote all children's literacy development.

Competency 005 (Word Analysis and Decoding)

The teacher understands the importance of word analysis and decoding for reading and provides many opportunities for children to improve their word-analysis and decoding abilities.

The beginning teacher:

- Understands that many children develop word-analysis and decoding skills in a predictable sequence but that individual variations may occur.
- Understands the importance of word recognition skills (e.g., decoding, blending, structural analysis, sight-word vocabulary) for reading comprehension and knows a variety of strategies for helping young children develop and apply word-analysis skills.
- Knows a variety of formal and informal procedures for assessing children's word-analysis and decoding skills and adjusts instruction to meet the needs of individual children, including English Language Learners.
- Teaches the analysis of phonetically regular words in a simple-to-complex progression (i.e., phonemes, blending onsets and rimes, short vowels, consonant blends, other common vowel and consonant patterns, syllables).
- Teaches children to read passages using decodable texts as appropriate and provides opportunities for children to progress from sounding out words orally to decoding words silently.

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- Teaches children to recognize high-frequency irregular words by selecting words that appear frequently in children's books and reviewing difficult words often.
- Teaches children ways to identify vowel-sound combinations and multisyllabic words.
- Provides instruction in how to use structural cues to recognize compound words, base words, prefixes and suffixes, and inflections.
- Teaches children to use knowledge of English word order (syntax) and context to support word identification and confirm word meaning.
- Uses formal and informal assessments to plan and adjust instruction based on individual children's word-analysis and decoding skills.
- Understands how to foster collaboration with families and with other professionals to promote all children's word-analysis and decoding skills.

Competency 006 (Reading Fluency)

The teacher understands the importance of fluency for reading comprehension and provides many opportunities for children to improve their reading fluency.

The beginning teacher:

- Understands that fluency involves rate, accuracy, and intonation.
- Understands how children's reading rate and fluency affect their comprehension.
- Understands how children develop reading fluency.
- Applies norms to identify and monitor children's fluency levels.
- Selects and uses instructional strategies, materials, and activities to develop fluency (e.g., reading independent-level materials, reading orally from familiar texts, repeated reading, partner reading, silent reading for increasingly longer periods, self-correction).
- Understands how to foster collaboration with families and with other professionals to promote all children's reading fluency.

Competency 007 (Reading Comprehension)

The teacher understands the importance of reading for understanding, knows the components of comprehension, and teaches children strategies for improving their comprehension.

The beginning teacher:

- Understands factors affecting reading comprehension, such as oral language development, prior reading experiences, language background, and characteristics of specific texts (e.g., structure, vocabulary, story grammar).

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- Understands levels of reading comprehension and knows how to model and teach skills for literal comprehension (e.g., identifying stated main idea, recalling details), inferential comprehension (e.g., inferring cause-and-effect relationships, making predictions), and evaluative comprehension (e.g., analyzing character development and use of language, detecting faulty reasoning).
- Provides instruction in comprehension skills that support children's transition from "learning to read" to "reading to learn" (e.g., recognizing different types of texts, understanding how a text is organized, using textual features such as headings and glossaries).
- Selects and uses instructional strategies, materials, and activities that facilitate children's comprehension before, during, and after reading (e.g., providing background knowledge for written text, previewing the organization of a text, making predictions, questioning, guiding discussions).
- Models and teaches a range of strategies that children can use to monitor and improve their reading comprehension (e.g., self-questioning, rereading, mapping, using reading journals, discussing texts).
- Selects and uses instructional strategies, materials, and activities to guide children to increase knowledge of their own culture and the cultures of others through reading.
- Selects and uses a variety of formal and informal procedures for monitoring children's reading comprehension and adjusts instruction to meet the needs of individual children, including English Language Learners.
- Teaches elements of literary analysis, such as story elements and features of different literary genres.
- Understands how to foster collaboration with families and with other professionals to promote all children's reading comprehension.

Competency 008 (Research and Comprehension Skills in the Content Areas)

The teacher understands the importance of research and comprehension skills to children's academic success and provides children with instruction that promotes their acquisition and effective use of these skills in the content areas.

The beginning teacher:

- Teaches children how to locate, retrieve, and retain information from a range of content-area and expository texts.
- Teaches children how to use text organizers (e.g., headings, tables of contents) to locate and organize information.

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- Selects and uses instructional strategies, materials, and activities to help children use graphics (e.g., tables, charts, maps, diagrams, timelines) and other sources of information and technologies to acquire information.
- Selects and uses instructional strategies, materials, and activities to help children use multiple sources, including electronic texts, experts, and print resources, to locate information.
- Understands how to help children summarize and organize information from multiple sources (e.g., by taking notes, outlining, creating graphic organizers).
- Understands how to foster collaboration with families and with other professionals to promote all children's ability to develop effective research and comprehension skills in the content areas.

Competency 009 (Writing Conventions)

The teacher understands the conventions of writing in English and provides instruction that helps children develop proficiency in using writing conventions.

The beginning teacher:

- Understands that many children go through predictable stages in acquiring writing conventions, including the physical and cognitive processes involved in scribbling, recognition of environmental print, mock letters, letter formation, word writing, sentence construction, spelling, punctuation, and grammatical expression; but that individual children vary in their development of these conventions.
- Understands the relationship between spelling and phonological and alphabetic awareness.
- Understands the stages of spelling development (precommunicative "writing" [understands the function of writing but cannot make the forms], prephonemic, phonemic, transitional, and conventional) and knows how and when to support children's development from one stage to the next.
- Selects and uses systematic spelling instruction in common spelling patterns based on previously taught phonics skills.
- Selects and uses instructional strategies, materials, and activities to help children develop and use spelling skills in the context of meaningful written expression.
- Selects and uses instructional strategies, materials, and hands-on activities for the development of the fine motor skills necessary for writing (e.g., tearing, cutting, puzzles, clay, painting, drawing).
- Selects and uses instructional strategies, materials, and activities to teach pencil grip, paper position, and beginning strokes.

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- Selects and uses instructional strategies, materials, and activities to help all children, including English Language Learners, use English writing conventions (e.g., grammar, capitalization, punctuation) in connected discourse.
- Recognizes the similarities and differences between spoken and written English (e.g., in syntax, vocabulary choice) and uses instructional strategies to help children apply English writing conventions effectively.
- Understands how to foster collaboration with families and with other professionals to promote all children's effective use of writing conventions.

Competency 010 (Development of Written Communication)

The teacher understands that writing to communicate is a developmental process and provides instruction that promotes children's competence in written communication.

The beginning teacher:

- Knows that many children exhibit predictable stages in developing written language but that individual variations may occur.
- Provides materials, activities, and experiences for children to construct an understanding of the writing system in an environment that nurtures the expression of ideas.
- Teaches purposeful, meaningful writing in connection with listening, reading, and speaking.
- Monitors children's writing development and provides motivational instruction that addresses the strengths, needs, and interests of individual children, including English Language Learners.
- Selects and uses instructional strategies, materials, and activities to teach the components of the writing process, including prewriting, drafting, editing, and revising.
- Provides instruction in the use of appropriate technologies that facilitate written communication.
- Teaches children the differences between first-draft writing and writing for publication and helps them apply writing conventions to their own written products.
- Provides opportunities for children to write in a variety of forms and modes and for various purposes and audiences.
- Teaches children to apply criteria (e.g., clarity, comprehensiveness, interest to audience) for assessing their own written work.
- Understands how to foster collaboration with families and with other professionals to promote children's development of writing skills.

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Competency 011 (Assessment of Developing Literacy)

The teacher understands the basic principles of literacy assessment and uses a variety of assessments to guide literacy instruction.

The beginning teacher:

- Understands characteristics and appropriate uses of a wide range of formal and informal literacy-assessment techniques, including techniques for assessing oral language, and uses assessment results to adapt instruction to address the needs of individual children, including English Language Learners.
- Analyzes children's reading and writing performance and uses it as a basis for instruction.
- Knows the state content and performance standards for reading, writing, listening, and speaking that comprise the Texas Essential Knowledge and Skills (TEKS) and recognizes when a child needs additional help or intervention to bring performance up to grade level.
- Knows how to determine children's independent, instructional, and frustration reading levels, and uses this information to select appropriate materials for individual children and to guide children's selection of independent reading materials.
- Uses ongoing assessments to determine when a child may be in need of classroom interventions or specialized reading instruction and to develop appropriate instructional plans.
- Communicates children's progress in literacy development to parents/ caregivers and to other professionals through a variety of means, including the use of examples of children's work.

DOMAIN II—MATHEMATICS

Competency 012 (Mathematics Instruction)

The teacher understands how children learn mathematical skills and uses this knowledge to plan, organize, and implement instruction and assess learning.

The beginning teacher:

- Plans appropriate activities for all children based on research and principles of learning mathematics.
- Employs instructional strategies that build on the linguistic, cultural, and socioeconomic diversity of children and that relate to children's lives and communities.
- Provides developmentally appropriate instruction along a continuum from concrete to abstract and plans instruction that builds on strengths and addresses needs.

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- Knows how mathematical learning may be assisted through the appropriate use of manipulatives and technological tools.
- Motivates children and actively engages them in the learning process by using a variety of interesting, challenging, and worthwhile mathematical tasks and by providing instruction in individual, small-group, and large-group settings.
- Uses a variety of tools (e.g., counters, standard and nonstandard units of measure, rulers, protractors, scales, stopwatches, measuring containers, money, calculators, software) to strengthen children's mathematical understanding.
- Develops appropriate learning goals based on the Texas Essential Knowledge and Skills (TEKS) in mathematics and uses these learning goals as a basis for instruction.
- Helps children make connections between mathematics, the real world, and other disciplines.
- Uses a variety of questioning strategies to encourage mathematical discourse and to help children analyze and evaluate their mathematical thinking.
- Uses a variety of formal and informal assessments and scoring procedures to evaluate mathematical understanding, common misconceptions, and error patterns.
- Understands the reciprocal nature of assessment and instruction and knows how to use assessment results to design, monitor, and modify instruction to improve mathematical learning for individual children, including English Language Learners.
- Understands how mathematics is used in a variety of careers and professions and plans instruction that demonstrates how mathematics is used in the workplace.

Competency 013 (Number Concepts, Patterns, and Algebra)

The teacher understands concepts related to numbers and number systems and demonstrates knowledge of patterns, relations, functions, and algebraic reasoning.

The beginning teacher:

- Analyzes and describes number concepts (e.g., odd, even, prime), operations and algorithms, and the properties of numbers.
- Analyzes, explains, and models the four basic operations with whole numbers, integers, and rational numbers.
- Uses numbers to describe and quantify phenomena such as time, temperature, and money.

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- Applies knowledge of place value and other number properties to perform mental mathematics and computational estimation.
- Illustrates relations and functions using concrete models, tables, graphs, and symbolic expressions.
- Understands how to use algebraic concepts and reasoning to investigate patterns, make generalizations, formulate mathematical models, make predictions, and validate results.
- Knows how to identify, extend, and create patterns using concrete models, figures, numbers, and algebraic expressions.
- Uses properties, graphs, and applications of relations and functions to analyze, model, and solve problems in mathematical and real-world situations.
- Translates problem-solving situations into expressions and equations involving variables and unknowns.
- Models and solves problems, including proportion problems, using concrete, numeric, tabular, graphic, and algebraic methods.

Competency 014 (Geometry, Measurement, Probability, and Statistics)

The teacher understands concepts and principles of geometry and measurement and demonstrates knowledge of probability and statistics and their applications.

The beginning teacher:

- Applies knowledge of spatial concepts such as direction, shape, and structure.
- Identifies and uses formulas to find lengths, perimeters, areas, and volumes of basic geometrical figures.
- Uses mathematical reasoning to prove geometric relationships.
- Understands measurement as a process, methods of approximation and estimation, and the effects of error on measurement.
- Understands the use of numbers and units of measurement for quantities related to temperature, money, percents, and speed.
- Uses translations, rotations, reflections, dilations, and contractions to illustrate similarities, congruencies, and symmetries of figures.
- Applies knowledge of conversions within and between different measurement systems.
- Understands how to use graphical and numerical techniques to explore data, characterize patterns, and describe departure from patterns.
- Understands the theory of probability and its relationship to sampling and statistical inference and knows how statistical inference is used in making and evaluating predictions.

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- Supports arguments, makes predictions, and draws conclusions using summary statistics and graphs to analyze and interpret one-variable data.
- Knows how to generate and use probability models to represent situations.
- Uses the graph of the normal distribution as a basis for making inferences about a population.

Competency 015 (Mathematical Process)

The teacher understands mathematical processes and knows how to reason mathematically, solve mathematical problems, and make mathematical connections within and outside of mathematics.

The beginning teacher:

- Understands the role of logical reasoning in mathematics and knows methods and uses of informal and formal reasoning.
- Applies correct mathematical reasoning to derive valid conclusions from a set of premises.
- Applies principles of inductive reasoning to make conjectures and uses deductive methods to evaluate the validity of conjectures.
- Evaluates mathematical arguments and recognizes examples of fallacious reasoning.
- Understands connections among concepts, procedures, and equivalent representations in areas of mathematics (e.g., algebra, geometry).
- Understands how mathematics is used in other disciplines and in daily living.
- Knows how to use mathematical manipulatives and a wide range of appropriate technological tools to develop and explore mathematical concepts and ideas.
- Demonstrates knowledge of the history and evolution of mathematical concepts, procedures, and ideas.
- Recognizes the contributions that different cultures have made to the field of mathematics and the impact of mathematics on society and cultures.

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DOMAIN III—SOCIAL STUDIES

Competency 016 (Social Science Instruction)

The teacher uses social science knowledge and skills to plan, organize, and implement instruction and assess learning.

The beginning teacher:

- Knows state content and performance standards for social studies that comprise the Texas Essential Knowledge and Skills (TEKS) and understands the vertical alignment of the social sciences in the TEKS from grade level to grade level, including prerequisite knowledge and skills.
- Understands the implications of stages of child growth and development for designing and implementing effective learning experiences in the social sciences (e.g., knowledge of and respect for self, families, and communities; sharing; following routines; working cooperatively in groups).
- Selects effective, developmentally appropriate instructional practices, activities, technologies, and materials to promote children's knowledge and skills in the social sciences.
- Selects and uses appropriate technology as a tool for learning and communicating social studies concepts.
- Selects and uses instructional strategies, materials, and activities, including appropriate technology, to promote children's use of social science skills and research tools.
- Provides instruction that relates skills, concepts, and ideas in different social science disciplines.
- Helps children make connections between knowledge and methods in the social sciences and in other content areas.
- Uses a variety of formal and informal assessments and knowledge of the TEKS to determine children's progress and needs and to help plan instruction for individual children, including English Language Learners.

Competency 017 (History)

The teacher demonstrates knowledge of significant historical events and developments and applies social science skills to historical information, ideas, and issues.

The beginning teacher:

- Knows traditional points of reference in the history of Texas, the United States, and the world.
- Demonstrates knowledge of the individuals, events, and issues that shaped the history of Texas.

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- Understands similarities and differences among Native-American groups in Texas and the Western Hemisphere before European colonization.
- Understands the causes and effects of European exploration and colonization of Texas, the United States, and the Western Hemisphere.
- Knows how geographic contexts and processes of spatial exchange (diffusion) have influenced events in the past and helped to shape the present.
- Demonstrates knowledge of the origins and diffusion of major scientific, mathematical, and technological discoveries and the effects of discoveries throughout history.
- Relates historical information and ideas to information and ideas in other social sciences and in other disciplines.
- Knows how to formulate historical research questions and use appropriate procedures to reach supportable judgments and conclusions.
- Understands historical research and knows how historians locate, gather, organize, analyze, and report information using standard research methodologies.
- Knows characteristics and uses of primary and secondary sources used for historical research (e.g., databases, maps, photographs, media services, the Internet, biographies, interviews, questionnaires, artifacts); analyzes historical information from primary and secondary sources; and evaluates information in relation to bias, propaganda, point of view, and frame of reference.
- Applies evaluative, problem-solving, and decision-making skills to historical information, ideas, and issues.
- Knows how to communicate and interpret historical information and ideas in written and graphic forms.
- Analyzes historical data (e.g., population statistics, patterns of migration, voting trends and patterns) using appropriate analytical methods.

Competency 018 (Geography and Culture)

The teacher demonstrates knowledge of geographic relationships among people, places, and environments in Texas, the United States, and the world; understands the concept of culture and how cultures develop and adapt; and applies social science skills to geographic and cultural information, ideas, and issues.

The beginning teacher:

- Applies knowledge of key concepts in geography (e.g., location, distance, region, grid systems) and knows the locations and characteristics of places and regions in Texas, the United States, and the world.

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- Understands geographic patterns and processes in major historical and contemporary societies and regions of Texas, the United States, and the world.
- Demonstrates knowledge of physical processes (e.g., erosion, weather patterns, natural disasters) and their effects on patterns in the environment.
- Knows how humans adapt to, use, and modify the physical environment and knows how the physical characteristics of places and human modifications to the environment affect human activities and settlement patterns.
- Understands the concept of culture and the processes of cultural diffusion and exchange.
- Understands the contributions of people of various racial, ethnic, and religious groups to Texas, the United States, and the world and demonstrates knowledge of the effects of race, gender, and socioeconomic class on ways of life in the United States and throughout the world.
- Understands similarities and differences in how various peoples at different times in history have lived and met basic human needs, including the various roles of men, women, children, and families in past and present cultures.
- Relates geographic and cultural information and ideas to information and ideas in other social sciences and in other disciplines.
- Knows how to formulate geographic and cultural research questions and use appropriate procedures to reach supportable judgments and conclusions.
- Understands research relating to geography and culture and knows how social scientists in these fields locate, gather, organize, analyze, and report information using standard research methodologies.
- Knows characteristics and uses of primary and secondary sources used for geographic and cultural research (e.g., databases, maps, photographs, media services, the Internet, interviews, questionnaires, artifacts); analyzes information from primary and secondary sources; and evaluates information in relation to bias, propaganda, point of view, and frame of reference.
- Applies evaluative, problem-solving, and decision-making skills to geographic and cultural information, ideas, and issues.
- Knows how to communicate and interpret geographic and cultural information and ideas in written and visual forms, including maps and other graphics.
- Analyzes data related to geography and culture using appropriate analytical methods.

FIELD 101: GENERALIST EC–4 TEST FRAMEWORK

Competency 019 (Government, Citizenship, and Economics)

The teacher understands concepts and processes of government and the responsibilities of citizenship; knows how people organize economic systems to produce, distribute, and consume goods and services; and applies social science skills to information, ideas, and issues related to government and economics.

The beginning teacher:

- Understands the purpose of rules and laws; the relationship between rules, rights, and responsibilities; and the fundamental rights of American citizens guaranteed in the Bill of Rights and other amendments to the U.S. Constitution.
- Understands fundamental concepts related to life in a democratic society (e.g., importance of voluntary participation and the expression and tolerance of differing points of view, roles of public officials).
- Knows the basic structure and functions of local, state, and national governments and their relationships to each other and knows how people organized governments during the early development of Texas.
- Understands the key principles and ideas of the U.S. and Texas Declarations of Independence, Constitutions, and other significant political documents.
- Understands basic economic concepts (e.g., economic system, goods and services, free enterprise, interdependence, needs and wants, scarcity, roles of producers and consumers), knows that basic human needs are met in many ways, and understands the value and importance of work.
- Understands the characteristics, benefits, and development of the free-enterprise system in Texas and the United States and knows how businesses operate in the U.S. free-enterprise system.
- Demonstrates knowledge of patterns of work and economic activities in Texas and the United States, past and present, and knows how a society's economic level is measured.
- Understands the interdependence of the Texas economy with that of the United States and the world.
- Relates information and ideas in government, citizenship, and economics to information and ideas in other social sciences and in other disciplines.
- Knows how to formulate research questions related to government, citizenship, and economics and use appropriate procedures to reach supportable judgments and conclusions.
- Understands research in government, citizenship, and economics and knows how social scientists in these fields locate, gather, organize, analyze, and report information.

FIELD 101: GENERALIST EC-4 TEST FRAMEWORK

- Knows characteristics and uses of primary and secondary sources used for research in government, citizenship, and economics (e.g., databases, maps, media services, the Internet, biographies, interviews, questionnaires); analyzes information from primary and secondary sources; and evaluates information in relation to bias, propaganda, point of view, and frame of reference.
- Applies problem-solving, decision-making, and evaluation skills to information, ideas, and issues related to government, citizenship, and economics.
- Knows how to communicate and interpret information and ideas related to government, citizenship, and economics in written and graphic forms.
- Analyzes data related to government, citizenship, and economics using appropriate analytical methods.
- Knows how to apply skills to foster good citizenship (e.g., negotiation, conflict resolution, persuasion, compromise, debate).

DOMAIN IV—SCIENCE

Competency 020 (Science Instruction)

The teacher uses knowledge of science content and methods to plan effective, engaging, and safe instruction and to assess learning.

The beginning teacher:

- Designs and adapts curricula and selects science content to address the interests, knowledge, abilities, experiences, and needs of all children.
- Plans and implements instruction that prompts all children's engagement in processes of scientific inquiry (e.g., asking a scientific question; formulating a testable hypothesis; selecting appropriate equipment and technology to gather information related to the hypothesis; making observations and collecting data; organizing, analyzing, and evaluating data to find data trends and patterns and make inferences; communicating and defending a valid conclusion).
- Uses situations from children's daily lives to develop instruction that investigates how science can be used to make informed decisions.
- Creates, implements, and enforces rules and safety procedures to promote and maintain a safe learning environment during laboratory and field activities.
- Provides laboratory space and equipment for all students, including those with special needs.
- Designs science instruction that includes the contributions of individuals from a variety of cultures.

FIELD 101: GENERALIST EC–4 TEST FRAMEWORK

- Promotes children's understanding that scientific ideas and explanations must be consistent with observational and experimental evidence.
- Uses a variety of formal and informal assessments and knowledge of the Texas Essential Knowledge and Skills (TEKS) in science to determine children's progress and needs and to help plan instruction for individual children, including English Language Learners.
- Develops procedures for assessing child participation in and understanding of the inquiry process.
- Understands the implications of stages of child growth and development for designing and implementing effective learning experiences in science and selects effective, developmentally appropriate instructional practices, activities, technologies, and materials to promote children's scientific knowledge and skills.

Competency 021 (Physical Science)

The teacher understands the fundamental concepts, principles, and processes of physical science.

The beginning teacher:

- Understands properties of objects and materials and selects appropriate procedures and tools for observing and recording them (e.g., size, shape, temperature, hardness, mass, conduction, density).
- Understands concepts of force and motion and describes the motion of an object subject to an unbalanced force (e.g., a push or a pull).
- Understands basic concepts of heat, light, electricity, and magnetism.
- Applies properties of fundamental forces (e.g., push or pull, friction, gravity, electric force, magnetic force) to analyze common situations and objects (e.g., toys, playground equipment).
- Describes and analyzes changes in the states of matter caused by the addition or removal of heat energy.
- Understands conservation of energy and energy transformations and analyzes how energy is transformed from one form to another (e.g., mechanical, sound, heat, light, chemical, electrical) in a variety of everyday situations.
- Understands how the systems model can be used as a conceptual framework to organize, unify, and connect the common themes of physical science to other sciences and technology.
- Analyzes systems in physical science (e.g., the interactions of the parts of a toy car or a simple pendulum) in terms of constancy, change, cycles, structure, and processes.

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- Engages in the process of scientific inquiry in physical science (e.g., asking a scientific question; formulating a testable hypothesis; selecting appropriate equipment and technology to gather information related to the hypothesis; making observations and collecting data; organizing, analyzing, and evaluating data to find data trends and patterns and make inferences; communicating and defending a valid conclusion).
- Uses a variety of tools, equipment, technology, and techniques to access, gather, store, retrieve, organize, and analyze data in physical science.
- Demonstrates knowledge of the concepts of precision, accuracy, and error with regard to reading and recording numerical data from a scientific instrument in the context of physical science investigations.
- Organizes, displays, and communicates physical science data in a variety of ways (e.g., collections, charts, tables, written reports) using appropriate technology.
- Understands procedures for the appropriate storage, handling, use, disposal, care, and maintenance of chemicals, materials, and equipment in physical science.

Competency 022 (Life Science)

The teacher understands the fundamental concepts, principles, and processes of life science.

The beginning teacher:

- Understands that living systems have different structures to perform different functions.
- Understands and describes stages in the life cycle of common plants and animals.
- Understands that organisms have basic needs.
- Demonstrates knowledge of adaptive characteristics and explains how adaptations influence the survival of populations or species.
- Understands that organisms respond to internal or external stimuli and analyzes the role of internal and external stimuli in the behavior of organisms.
- Describes the processes by which plants and animals reproduce and explains how hereditary information is passed from one generation to the next.
- Compares and contrasts inherited traits and learned characteristics.
- Understands relationships between organisms and the environment and describes ways in which living organisms depend on each other and on the environment to meet their basic needs.

FIELD 101: GENERALIST EC–4 TEST FRAMEWORK

- Identifies organisms, populations, or species with similar needs and analyzes how they compete with one another for resources.
- Understands how the systems model can be used as a conceptual framework to organize, unify, and connect the common themes of life science to other sciences and technology.
- Applies the systems model to analyze systems in life science (e.g., the interactions of the parts of a plant or an animal) in terms of constancy, change, cycles, structure, and processes.
- Engages in the process of scientific inquiry in life science (e.g., asking a scientific question; formulating a testable hypothesis; selecting appropriate equipment and technology to gather information related to the hypothesis; making observations and collecting data; organizing, analyzing, and evaluating data to find data trends and patterns and make inferences; communicating and defending a valid conclusion).
- Uses a variety of tools, equipment, technology, and techniques to access, gather, store, retrieve, organize, and analyze data in life science.
- Demonstrates knowledge of the concepts of precision, accuracy, and error with regard to reading and recording numerical data from a scientific instrument in the context of life science.
- Organizes, displays, and communicates life science data in a variety of ways (e.g., collections, charts, tables, written reports) using appropriate technology.
- Understands procedures for the appropriate storage, handling, use, disposal, care, and maintenance of chemicals, materials, specimens, and equipment and demonstrates ethical care and treatment of organisms and specimens.

Competency 023 (Earth and Space Science)

The teacher understands the fundamental concepts, principles, and processes of earth and space science.

The beginning teacher:

- Understands and describes the properties and uses of earth materials (e.g., rocks, soils, water, atmospheric gases).
- Demonstrates knowledge of characteristics of weather, changes in weather, and tools for making weather measurements.
- Understands forces and processes that change the surface of Earth (e.g., glaciers, earthquakes, weathering).
- Understands and describes characteristics of the sun, moon, and stars.

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- Demonstrates knowledge of objects in the sky and their characteristics (e.g., the sun as Earth's major energy source, position of the planets in relation to the sun).
- Analyzes the consequence of the moon's orbit around Earth (e.g., phases of the moon) and Earth's orientation and movement around the sun (e.g., day and night, the seasons).
- Understands how the systems model can be used as a conceptual framework to organize, unify, and connect the common themes of earth and space science to other sciences and technology.
- Applies the systems model to analyze systems in earth and space science (e.g., the ocean, the atmosphere) in terms of constancy, change, cycles, structure, and processes.
- Engages in the process of scientific inquiry in earth and space science (e.g., asking a scientific question; formulating a testable hypothesis; selecting appropriate equipment and technology to gather information related to the hypothesis; making observations and collecting data; organizing, analyzing, and evaluating data to find data trends and patterns and make inferences; communicating and defending a valid conclusion).
- Uses a variety of tools, equipment, technology, and techniques to access, gather, store, retrieve, organize, and analyze data in earth and space science.
- Demonstrates knowledge of the concepts of precision, accuracy, and error with regard to reading and recording numerical data from a scientific instrument in the context of earth and space science.
- Organizes, displays, and communicates data in a variety of ways (e.g., collections, charts, tables, written reports) using appropriate technology in the context of earth and space science.
- Understands procedures for the appropriate storage, handling, use, disposal, care, and maintenance of chemicals, materials, and equipment in earth and space science.

**FIELD 101: GENERALIST EC–4
TEST FRAMEWORK**

DOMAIN V—FINE ARTS, HEALTH, AND PHYSICAL EDUCATION

Competency 024 (Visual Arts)

The teacher understands concepts, processes, and skills involved in the creation, appreciation, and evaluation of art and uses this knowledge to plan and implement effective art instruction.

The beginning teacher:

- Knows and understands how perception is developed through observation, prior knowledge, imaginative and cognitive processes, and multisensory experiences.
- Selects and uses instructional strategies, materials, and activities to help children deepen and expand their ability to perceive and reflect on the environment.
- Demonstrates knowledge of the elements of art (i.e., color, texture, shape, form, line, space, value) and provides instruction that promotes children's understanding of the elements of art and their ability to apply that understanding to create original artworks.
- Demonstrates knowledge of the principles of art (e.g., emphasis, contrast, pattern, rhythm, balance, proportion, unity) and provides instruction that promotes children's understanding of the principles of art and their ability to apply that understanding to create original artworks.
- Selects appropriate techniques used to create art in various media, including drawing, painting, printmaking, construction, ceramics, fiber art, and electronic media, and promotes children's ability to use those techniques to create original artworks.
- Selects and uses instructional strategies, materials, and activities to promote children's awareness and appreciation of the characteristics of a variety of art forms of multiple cultures within and outside the Western tradition.
- Applies the skills and knowledge required for visual literacy (e.g., knowledge of art elements and principles, of art of different eras and cultures, of diverse purposes and uses of art) and provides instruction that promotes children's development of visual literacy.
- Integrates instruction in the visual arts with instruction in other subject areas.
- Understands how children develop cognitively and artistically and knows how to implement effective art instruction and assessment that is individually, culturally, and age appropriate.
- Applies knowledge of visual arts content and curriculum, including the Texas Essential Knowledge and Skills (TEKS), and of children in early childhood through grade 4 to plan and implement effective, developmentally appropriate art instruction.

**FIELD 101: GENERALIST EC–4
TEST FRAMEWORK**

Competency 025 (Music)

The teacher understands concepts, processes, and skills involved in the creation, appreciation, and evaluation of music and uses this knowledge to plan and implement effective learning experiences in music.

The beginning teacher:

- Knows how to involve children in activities that promote lifelong enjoyment of music and provides children with a wide range of opportunities to make and respond to music.
- Applies knowledge of standard terminology for describing and analyzing musical sound (e.g., rhythm, melody, form, timbre, tempo, pitch, meter) and standard music notation.
- Demonstrates an understanding of the purposes and roles of music in society and how music can reflect elements of a specific society or culture.
- Identifies and describes how music reflects the heritage of the United States and Texas.
- Applies knowledge of criteria for evaluating and critiquing musical performances and experiences.
- Integrates instruction in music with instruction in other subject areas.
- Applies knowledge of music content and curriculum, including the Texas Essential Knowledge and Skills (TEKS), and of children in early childhood through grade 4 to plan and implement effective, developmentally appropriate instruction, including instruction that promotes children's creativity and performance skills and their ability to use critical-thinking and problem-solving skills in music contexts.

Competency 026 (Health)

The teacher uses knowledge of the concepts and purposes of health education to plan and implement effective and engaging health instruction for all children.

The beginning teacher:

- Understands health-related behaviors, ways in which personal health decisions and behaviors affect body systems and health, and strategies for reducing health risks and enhancing wellness throughout the life span.
- Demonstrates knowledge of major areas in health instruction, including body systems (e.g., structures and functions of various body systems), illness and disease (e.g., types of disease, transmission mechanisms, defense systems, disease prevention), nutrition (e.g., types of foods and nutrients, maintenance of a balanced diet), stress (e.g., effects of stress, stress-reduction techniques), and fitness (e.g., components of fitness, methods for improving fitness).

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- Understands substance use and abuse (including types and characteristics of tobacco, alcohol, and other drugs and of herbal supplements).
- Understands types of violence and abuse (including causes and effects of violence and abuse and ways to prevent and seek help in dealing with violence and abuse).
- Selects and uses instructional strategies, materials, and activities to teach principles and procedures related to safety, accident prevention, and response to emergencies.
- Applies critical-thinking, goal-setting, problem-solving, and decision-making skills in health-related contexts and understands the use of refusal skills and conflict resolution to avoid unsafe situations.
- Selects and uses instructional strategies, materials, and activities to help children build healthy interpersonal relationships (e.g., communication skills) and demonstrate consideration and respect for self, family, friends, and others (e.g., practicing self-control).
- Understands the influence of various factors (e.g., media, technology, peer and other relationships, environmental hazards) on individual, family, and community health.
- Demonstrates knowledge of sources of health information and ways to use information to make health-related decisions.
- Selects and uses instructional strategies, materials, and activities to help children understand the roles of health-care professionals, the benefits of health maintenance activities, and the skills for becoming health-wise consumers.
- Applies knowledge of health content and curriculum, including the Texas Essential Knowledge and Skills (TEKS), and of children in early childhood through grade 4 to plan and implement effective, developmentally appropriate health instruction, including relating the health-education curriculum to other content areas.

Competency 027 (Physical Education)

The teacher uses knowledge of the concepts, principles, skills, and practices of physical education to plan and implement effective and engaging physical education activities for young children.

The beginning teacher:

- Applies key principles and concepts in physical education (e.g., cardiovascular endurance, muscular strength, flexibility, weight control, conditioning, safety, stress management, nutrition) and their significance for physical activity, health, and fitness.
- Knows and helps children understand the benefits of an active lifestyle.

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TEST FRAMEWORK**

- Applies knowledge of movement principles and concepts to develop children's motor skills.
- Selects and uses developmentally appropriate learning experiences that enhance children's locomotor, nonlocomotor, body-control, manipulative, and rhythmic skills.
- Modifies instruction based on individual differences in growth and development.
- Evaluates movement patterns to help children improve performance of motor skills and to integrate and refine motor and rhythmic skills.
- Selects and uses instructional strategies to promote children's knowledge and application of rules, procedures, etiquette, and fair play in developmentally appropriate games and activities.
- Designs, manages, and adapts physical education activities to promote positive interactions and active engagement by all children.
- Applies knowledge of physical education content and curriculum, including the Texas Essential Knowledge and Skills (TEKS), and of children in early childhood through grade 4 to plan and implement effective, developmentally appropriate physical education activities.