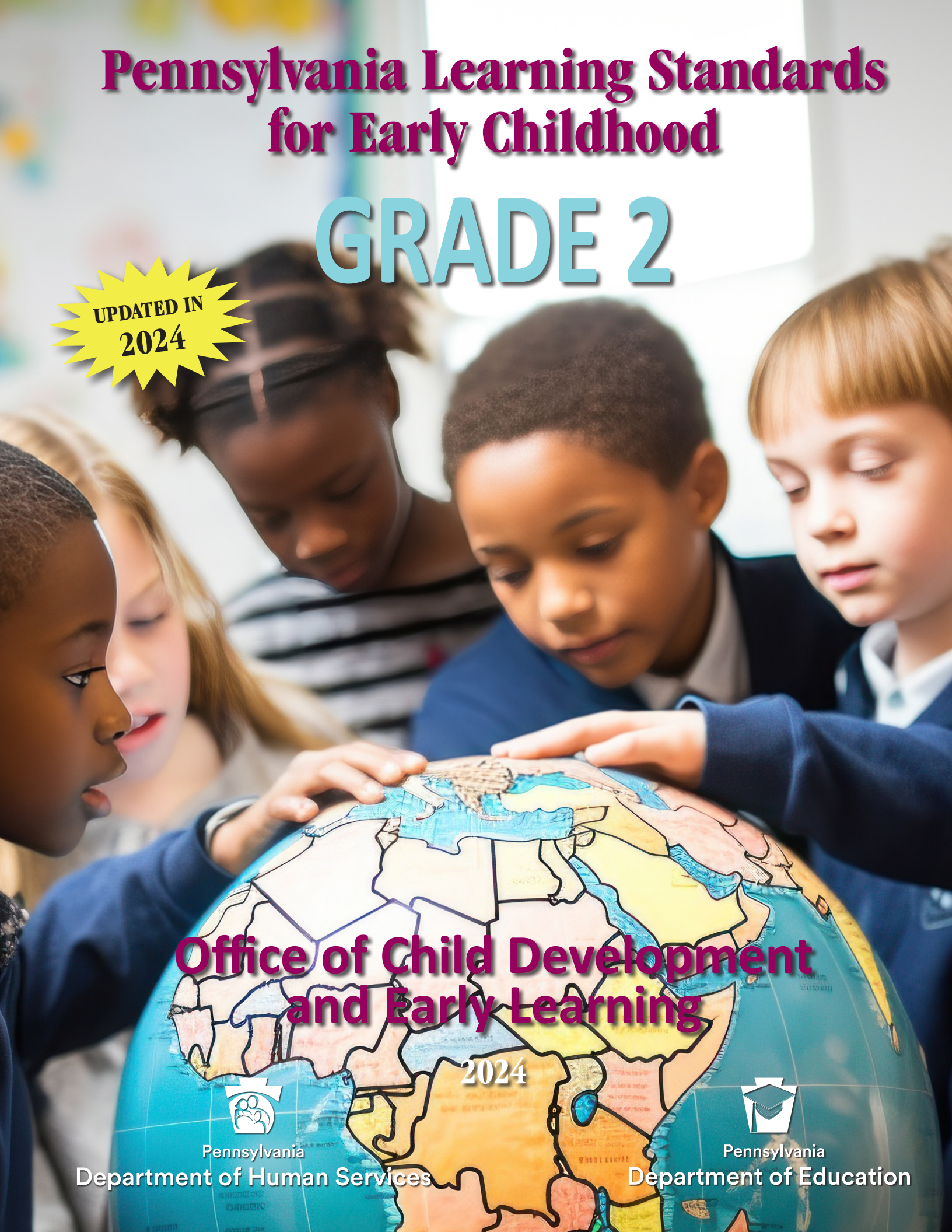
Pennsylvania Learning Standards for Early Childhood

GRADE 2

UPDATED IN 2024



Office of Child Development and Early Learning

2024

Pennsylvania
Department of Human Services

Pennsylvania
Department of Education

TABLE OF CONTENTS

KEY LEARNING AREA: Social Studies Thinking – Connecting to Communities

KEY LEARNING AREA: Creative Thinking and Expression – Communicating through the Arts

KEY LEARNING AREA: Health, Wellness, and Physical Development – Learning About My Body

Learning Standards Development

Pennsylvania Learning Standards for Early Childhood were originally constructed as a joint project of the Departments of Education and Human Services. The Office of Child Development and Early Learning in collaboration with the Office of Elementary and Secondary Education have overseen revisions to the standards.

Each set of standards has been formulated with help and guidance from practitioners and program specialists who represented early childhood programs, school districts, higher education, family leaders, policy analysts, and researchers. A group of Pennsylvania educators, in conjunction with the Office of Child Development and Early Learning, created a set of Pennsylvania Core Standards beginning with Pre-Kindergarten. The Pennsylvania Core Standards start in Pre-Kindergarten and continue through 12th grade. The Pennsylvania State Board of Education adopted the Pennsylvania Core Standards in March 2014. The 2014 revisions include updates related to the Pennsylvania Core Standards; Science, Technology, Engineering, and Math (STEM) supportive practices; and current research trends.

Learning Standards for Early Childhood are used to:

- Inform professionals about curriculum and assessment
- Guide the selection of instructional materials and the design of interactions/goal setting
- Inform families of appropriate expectations for children
- Provide a common framework for community-based birth–grade 3 alignment work

Learning Standards for Early Childhood are NOT used as:

- A specific curriculum
- A means to prohibit children from moving from one grade or age level to another
- A specific assessment of the competence of children or teachers

INTRODUCTION

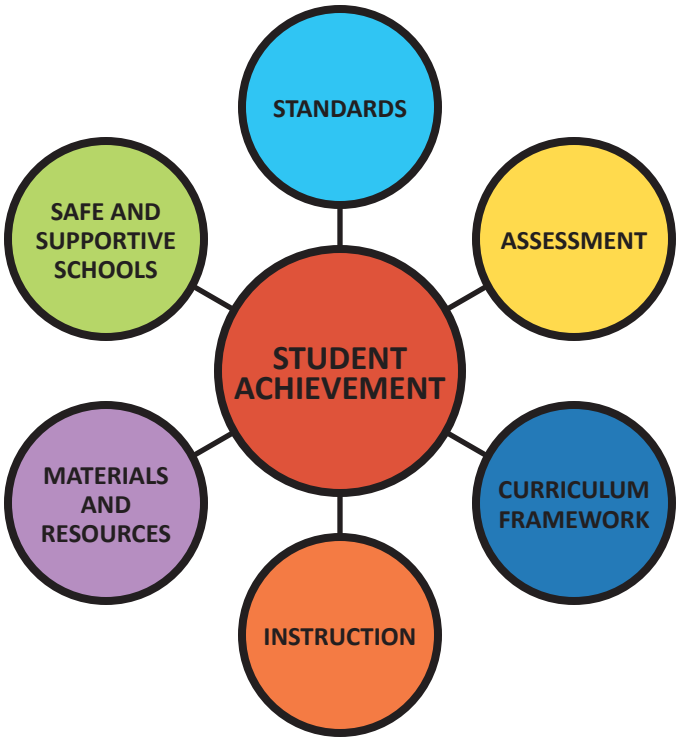
Children are born with an incredible capacity and desire to learn. More than 40 years of research confirms the foundational importance of early education and care for children's school and life success. It is essential that children's first experiences are robust ones, steeped in activities that develop critical thinking and problem-solving skills, a deep understanding about themselves in a social society, and age-appropriate content.

Instructional practices must embed the domains of development—cognitive, social-emotional, language, and physical—with approaches to learning that enable children to explore, understand, and reach beyond the "here and now" to challenge themselves, experiment, and transform information into meaningful content and skills.

Professionals interacting with young children have the critical task of providing rich information and experiences. Such experiences build skills and understanding in the context of everyday routines and within intentionally-designed play opportunities that capture children's interests and curiosity. Pennsylvania Learning Standards for Early Childhood are designed to support and enhance the learning environment; responsive relationships; age, cultural, and linguistically-appropriate curriculum; and practices being used to assess children, classrooms, and programs.

The Department of Education and the Office of Child Development and Early Learning use a Standards Aligned System. The Standards Aligned System is a collective body of research that identifies six elements which, when used together, provide a framework for program improvement and child success. The elements identified are standards, assessments, curriculum framework, instruction (including interventions), safe and supportive schools, and materials and resources. A web-based portal including more information and resources related to these elements is accessible at www.pdesas.org.

STANDARDS ALIGNED SYSTEM (SAS)



1. Standards

Learning standards provide the framework for learning. They provide the foundational information for what children should be able to know and do. Pennsylvania Learning Standards for Early Childhood build on information learned previously, creating a continuum of learning that assures consistent and linked learning that begins in infancy, increasing in complexity as it extends through graduation.

Pennsylvania also uses program standards that assure children's experiences are being offered in high-quality settings. Pennsylvania's state-funded programs all offer similar sets of standards that provide guidance on program operation that exhibit best practices.

2. Assessments

Professionals must use both informal and formal assessments to understand children's progress. In early childhood, formative assessments that provide information about how children are progressing allow professionals to make adaptations or adjustments in the individualized learning plans for every child. Early childhood professionals observe and assess children using the materials that are found in the learning environment. Professionals must use the information they have documented during observation, along with information from the family, to identify goals and next steps for children's learning.

3. Curriculum framework

A curriculum framework reminds us what information should be taught to young children within each of the Key Learning Areas. It assures the continuum of learning that begins at birth and continues through graduation. Pennsylvania's curriculum framework includes big ideas, essential questions, concepts, and competencies that further define the learning standards.

4. Instruction including interventions

Instruction in the early years often looks different than instruction in the older grades. Learning occurs within the context of play and active learning strategies where children are engaged in concrete and hands-on discovery; experimentation; and interaction with materials, their peers, and nurturing adults.

Professionals help construct knowledge during these active learning times by designing activities that build on children's prior knowledge to create new understandings and information. Direct instruction should be combined with child-initiated play to produce optimal conditions for young children's learning. Adults become facilitators who interact with children throughout the day. Adults ask open-ended questions that encourage children to think about what comes next. With this approach, adults support children's creativity, problem-solving, intuition, and inventiveness (approaches to learning) by challenging and encouraging them. Professionals design focused instruction that is based on the identified individual needs of every child and assure these experiences encompass their interests, abilities, and culture.

STEM (Science, Technology, Engineering, Math)

STEM (Science, Technology, Engineering, Math) education is an intentional, integrative approach to teaching and learning, in which students uncover and acquire a comprehensive set of concepts, competencies, and thinking skills of science, technology, engineering, and mathematics that they transfer and apply in both academic and real-world contexts.

Education in Science, Technology, Engineering, and Math beginning at birth is supported by research in neuroscience and other developmental sciences. This research shows that the basic architecture of a child's brain is constructed through an ongoing process that begins before birth and continues through adulthood. Research also confirms that the brain is predominantly receptive to learning math and logic between the ages of 1 and 4, and that early math skills are the most powerful predictors of later learning. Providing children with opportunities to have early experiences in STEM supports children in their academic growth, develops early critical thinking and reasoning skills, and enhances later interest in STEM careers. The foundations of STEM learning lie in the natural inquiry and exploration of young children, as well as intentionally designed activities which build scientific and mathematical concepts, and the effective use of available technologies. Positive interactions early in life, in an environment intentionally designed to provide STEM experiences where children explore; ask questions; brainstorm, plan, and test solutions; and receive support from educators will help to lay this foundation. Early learning STEM experiences are based on the Pennsylvania Learning Standards for Early Childhood for infants and toddlers and prekindergarten. The STEELS (Science, Technology & Engineering, and Environmental Literacy & Sustainability) Standards are used for kindergarten through grade 2. STEM subjects are supported within these standards and are noted by the symbol, throughout the supportive practices. Science, Technology, Engineering, and Math are not separate subjects broken down into their own time slots. These topics of study are incorporated and encouraged within all activities throughout the day. In addition, laying this early foundation will help to bridge the educational gap between birth to age 5 and K-12 educational programs.

Interventions

- *Early Childhood Special Education*

Early childhood classrooms should be inclusive ones where children with disabilities and developmental delays are enjoying learning experience alongside their typically developing peers. Professionals may need to adapt or modify the classroom environment, interactions, and/or materials and equipment to help children with disabilities fully participate.

Pennsylvania Learning Standards for Early Childhood are designed to be used for all children. The content within these standards provides the breadth of information from which to create goals and experiences for all children that will help them reach their highest potential while capturing their interests and building on what they already know. Professionals must emphasize and celebrate all children's accomplishments and focus on what all children can do.

- *English Language Learners/Dual Language Learners*

Children develop language much the same way they acquire other skills. Children learn native and second languages using an individual style and rate. Differences among English Language Learners/Dual Language Learners such as mixing languages or a silent period are natural. Each child's progress in learning English needs to be respected and viewed as acceptable and part of the ongoing process of learning any new skill. Children can demonstrate proficiency in most of the standards using their dominant language. Use of home language in the classroom environment, and in simple phrases, validates a child's place in the classroom, encouraging the child to see him/herself as a learner. Working alongside English-speaking adults and peers in authentic learning experiences which respect home language is an effective means of learning English. Similar to all young children, English Language Learners/Dual Language Learners benefit

from use of visuals, props, and realia (objects from real life used in classroom instruction to improve children's understanding of other cultures and real life situations). The skills needed for young English Language Learners/Dual Language Learners to become proficient in English are fully embedded in the Pennsylvania Learning Standards for Early Childhood.

5. Materials and resources

Every early-learning setting, whether it is in a home atmosphere or center-based classroom, must be a comfortable, safe, and nurturing environment where children can learn through their play. Children discover and understand science, social studies, and math information when they actively explore materials and ideas that are guided by professionals who intentionally design activities that engage children in critical thinking and processing. Children also learn about their own abilities and learning styles, how to get along with others, and how to appreciate others' contributions in classrooms that include a diverse set of materials and experiences.

School environments should be linked to a child's home environment, incorporating cultural and ethnic materials and children's home language, and provide experiences that are inclusive for all children, regardless of ability, socio-economic status, or family background. Well-designed environments demonstrate a commitment to the whole child by offering materials and activities that promote social, physical, cognitive, and language learning. Resources provided within the Standards Aligned System (SAS) portal include Pennsylvania educator-created lesson plans, instructional strategies, digital media resources, and other valuable information.

6. Safe and supportive schools

The safe and supportive schools element found on the Standards Aligned System portal showcases resources and exemplars that promote active child engagement in a safe and positive learning environment. The three areas of focus within safe and supportive schools are:

Engagement—Program engagement is essential for child success and building a positive program climate. Engagement within a program is a process of events and opportunities that lead to children gaining the skills and confidence needed to cope and feel safe within their environment. These events and opportunities include relationships, respect for cultural diversity, and family participation. Relationships are the connection between two or more people or groups and their involvement with and behavior toward one another. Respect for diversity shows an understanding, appreciation, and response to differences in individuals or groups. Family participation includes the active involvement within classroom and school events.

Safety—Program safety refers to the security of the setting and program-related activities as perceived and experienced by all stakeholders, including families, caregivers, children, school staff, and the community. Program safety encompasses both emotional and physical safety, and is influenced by positive and negative behaviors of children and staff. Emotional safety focuses on the feeling of connection, comfort, and acceptance within a secure setting. Physical safety ensures children are free from danger or threatening circumstances.

Environment—Program environment refers to the extent to which program settings promote child safety and health. Environment is inclusive of all aspects of a program—academic components, its physical and mental health supports and services, and its physical building and location within a community. The physical environment looks at the external surrounding and physical conditions within a program. Classroom assessment instruments that help providers assess the arrangement of indoor space, the provision of materials and activities, and their development of class schedules are useful in a sharing best practice implementation and alignment to Pennsylvania Learning Standards for Early Childhood. The academic environment is the climate set within a program that values and promotes learning and self-fulfillment. Wellness within a program supports good physical and mental health, including the promotion of a proper diet, exercise, and healthy habits.

EARLY CHILDHOOD CONNECTIONS

High-quality early care and education programs also promote connections that assure children's school success. Programs that build relationships with children and families and coordinate their work with other early-learning programs and school districts create strong partnerships for success.

1. Connections to children

Relationships are the key to successful connections between the adult and the child. Professionals must take time to know every child, to understand the way in which each child learns best, and to identify the special talents and skills each child possesses. Adults who work with young children must be students themselves. They must learn about children's home experiences and culture so they can design learning environments that support the home-school connection and expand prior learning into new knowledge.

2. Connections to families

Families of young children have much to offer in the learning process. When a partnership is formed between professional and family, the connection has been strengthened, assuring that children receive consistent messages about learning and skill development. Families should be given opportunities to learn about their children's day at school, to provide input into the information they want their children to learn and master, and to understand what they can do at home to enhance the learning experience. To assure effective family engagement strategies, professionals can reference the Partnerships for Learning Standards.

At-home resources for families such as *Kindergarten, Here I Come; Kindergarten, Here I Am; Learning Is Everywhere; Building Blocks for Babies; Every Day I Learn through Play;* and *Recipes for Readiness* provide professionals and families tools to share age-appropriate expectations and to connect learning experiences.

Family ethnicity and culture must be interwoven into the life of an early childhood program and classroom. Professionals must embrace all children's heritages and provide activities, materials, and experiences that help children become aware of and appreciate their own culture while learning about and appreciating the similarities and differences of others. Families can provide authentic cultural experiences and resources that support cultural awareness and appreciation. Such opportunities foster family and school relations and partnerships. Communications with families should be made in the home language. Professionals in high-quality, early education programs know and understand their own attitudes and biases and are culturally sensitive and supportive of diversity.

3. Connections with other early-learning programs

Children and families often have other needs and priorities in addition

to participation in high-quality early care and education programs. Families may need to coordinate their early care and education program services with health services or early intervention services, as well as with their other children's school experiences. Programs within a community that support families' single point of contact or help to coordinate services for children demonstrate a strong understanding and respect for families. Providers that reach out to neighborhood schools to facilitate transition into the public school or who have developed a working relationship with their intervention provider assure linkages that support children's school readiness and ongoing success. To assure effective family engagement strategies, professionals can reference the Partnerships for Learning Standards.

4. Connections for learning

Young children make learning connections through authentic hands-on experiences. Professionals that allow children time to explore and discover both inside and outside, optimize children's capacity to internalize and generalize content by making their own connections to prior knowledge. All children, regardless of age and ability, need opportunities to engage in practice activities and experiences that are steeped in play. Adults should design learning experiences with connections among multiple domains. Integrated learning experiences support both content and social and cultural learning.

THE LEARNING STANDARDS CONTINUUM

Within all Pennsylvania Learning Standards for Early Childhood, the Key Learning Areas define the domains or areas of children's learning that assure a holistic approach to instruction. All children, regardless of age and ability, should be exposed to experiences that build their skill development in approaches to learning, social and emotional development, language and literacy development, health wellness and physical development, creative expression, and the cognitive areas of mathematics, science, and social studies. The Standards within each Key Learning Area provide the information that children should know and the skills children should be able to do when they leave the age level or grade.

Pennsylvania Learning Standards for Early Childhood are connected through a continuum of learning and link to the 3rd grade academic standards. Some skills will not emerge in a noticeable way until a child is older. These standards will be intentionally blank or identified as emerging.

Professionals who view children's skill development across ages and grades will be able to understand the sequential way children learn and become familiar with the way in which teachers at higher grade levels support learning.

AGE GROUPING IN PENNSYLVANIA LEARNING STANDARDS FOR EARLY CHILDHOOD

Learning Standards for Infant-Toddler

The Infant-Toddler Standards are divided into three age levels: infant (birth through 12 months), young toddler (9 months–27 months), and older toddler (24 months through 36 months). These age divisions are arbitrary as a means for organizing the content; very young children's development is uneven and may span two or all three of the age levels in different Key Areas of Learning. This is reflected by the overlap of the age 9 months–27 months in younger toddlers.

The Standards in each Key Area of Learning are displayed on an Infant-Toddler continuum with the content within one strand presented together. Practitioners can look down each level to determine the skills that best match their children's current development, identifying additional concepts and competencies, and supportive practices to scaffold children's learning.

When strands include "emerging," these concepts are beginning to emerge but are not expected to be mastered. For example, infants and young toddlers may be exploring mathematical estimation as they interact with materials, but intentional instruction would not be appropriate for that age. Adults should continue to introduce these concepts whenever appropriate for the individual child without expectation of mastery.

Learning Standards for Pre-Kindergarten

Professionals will find the skills that pre-kindergarteners (ages three to five) are practicing and mastering within the pre-kindergarten standards. Younger preschoolers will be learning the content, while older children will be mastering the skills and showing proficiency. Classroom environments, materials, and activities that are developed for this age will be appropriate for both three- and four-year-olds; expectations for mastery will be different.

Learning Standards for Kindergarten

Students who complete kindergarten should demonstrate mastery of the skills within the kindergarten standards. This document is designed for full-day kindergarten classrooms. Half-day kindergarten teachers will need to modify the amount of content that is introduced to children during the kindergarten year, but the cognitive processing that children must develop and the holistic instruction will remain constant regardless of the length of the kindergarten day.

It is critical that kindergarten instruction occurs through an active learning approach where teachers use differentiated instructional strategies and focus on learning centers and play as key elements of the daily schedule. Child-initiated investigation should be predominant with supportive direct instruction in content areas infused throughout the day. Kindergarten children should be given opportunities to develop social and emotional skills, physical skills, and their creative expression within the course of a kindergarten day.

Learning Standards for Grades 1 and 2

Students who complete grades 1 and 2 should demonstrate mastery of the skills within the grades 1 and 2 standards. It is critical that grades 1 and 2 instruction occurs through an active learning approach where teachers use differentiated instructional strategies and focus on hands-on experiential learning that is meaningful to young learners. Child-initiated investigation should be coupled with supportive direct instruction in content areas infused throughout the day. Students should be given opportunities to develop social and emotional skills, physical skills, and their creative expression within the course of a typical day.

GUIDING PRINCIPLES

High-quality early care and education programs offer learning opportunities that have a significant impact on the success of all children. A warm, responsive relationship with a highly-trained teaching staff is foundational. It is expected that teachers will intentionally integrate developmental knowledge with the attitudes, skills, and concepts children need to make progress socially and academically. High-quality early care and education programs maintain high developmentally achievable expectations for all children using clear performance standards with a continuous cycle of assessment understood and used by staff, children, and families.

High-quality early care and education programs have a significant impact on children's future successes.

All children can learn and deserve high expectations that are age-, individually-, and culturally-appropriate.

Young children learn best when they are able to construct knowledge through meaningful play, active exploration of the environment, and thoughtfully planned activities.

The learning environment for young children should stimulate and engage their curiosity of the world around them and meet their physical and emotional needs so that they feel safe and secure.

Language and early literacy development must be supported and integrated throughout all aspects of early care and education programs.

Children's learning development and opportunities are supported when their teachers are trained in early childhood development and education, including professional training and ongoing professional development, and are intentional in their relationships and work with children and families.

Early care and education programs must address the individual needs of a diverse population of children, e.g., children with special needs, children from diverse cultural backgrounds, children from all socio-economic groups.

Early care and education programs are defined by a set of comprehensive standards that maximize a child's growth and development across cognitive and non-cognitive domains.

There must be a system of research-based assessments that documents children's growth and development in relationship to a defined set of standards and is used to inform instruction.

Children's learning is enhanced when families, schools, and communities work together.

THE LEARNING STANDARDS FOR EARLY CHILDHOOD FORMAT

(Approaches to Learning Through Play, Social and Emotional Development, Language and Literacy Development, Social Studies Thinking, Creative Thinking and Expression, Health, Wellness, and Physical Development)

Approaches to Learning Through Play

Constructing, Organizing, and Applying Knowledge

KEY LEARNING AREA- The domains of learning that assure child's holistic development

TAG LINE

ESSENTIAL QUESTIONS: Linked to the BIG IDEAS and provides the questions that support children's inquiry

BIG IDEAS: Describes the information that children should acquire across all age levels

STANDARD AREA: Organizes the content within the KEY LEARNING AREAS into smaller topics

AL.1 Constructing and Gathering Knowledge

Big Ideas: Children actively construct knowledge through routines, play, practices, and language. Children use a variety of strategies to gather information based upon their own individualized approach to learning.
Essential Questions: What strategies can be used to gather information? What can I learn from my every day experiences, including play?

A. CURIOSITY AND INITIATIVE ← **STRAND**

Standard	Concepts and Competencies	Supporting Practices
AL.1.2.A Explore and ask questions to seek meaningful information about a growing range of topics, ideas, and tasks.	**The learner will:** • Utilize senses to explore and learn from the environment. • Show interest and inquire about other's work. • Ask questions to understand something (e.g., "How does that work?"). • Demonstrate interest in new materials and experiences that are introduced (e.g., use play to practice new skills and knowledge, use vocabulary words or concepts learned in class during play). • Ask questions to learn from others (e.g., "How did you make that?").	**The adult will:** Provide a classroom with clearly defined interest areas and materials that invite students to explore, discover, and create. Provide a variety of materials to stimulate experiences, knowledge, participation, and interests (e.g., materials/activities appealing to a variety of senses, learning styles, and multiple intelligences). Respond to student's questions (inquiry) with explanations that help them understand. Encourage students to research answers to questions through books and other media. Provide a variety of subject integrated activities. Ask open-ended and higher-level questions to facilitate sharing, engage the listener, seek meaningful information, and extend learning. • Provide ample time to practice new skills and knowledge through playful experiences. • Regularly rotate classroom materials and formally introduce new objects and activities into the classroom by showing excitement (e.g., "Look what I brought for us to do today!").

STANDARD: A specific skill a child should know by the end of the developmental age range

CONCEPTS AND COMPETENCIES: Skills that help to define the construct of the Standard

SUPPORTIVE PRACTICES: Practitioners can employ these strategies to help children learn or make progress with particular skills

FOUNDATIONAL SKILLS FOR LEARNING: APPROACHES TO LEARNING THROUGH PLAY, SOCIAL EMOTIONAL DEVELOPMENT

The Approaches to Learning Through Play and Social Emotional Development standards are included first in our standards because these are foundational skills. These standards provide children with skills needed for school, life, and career success. These skills should be taught to children throughout the day.

Approaches to Learning through Play

Constructing, Organizing, and Applying Knowledge

AL.1 Constructing and Gathering Knowledge

AL.2 Organizing and Understanding Information

AL.3 Applying Knowledge

AL.4 Learning through Experience

Approaches to Learning through Play Standards describe the essential life skills that enable a child to grow, learn, develop, and become a successful member of the community. The use and development of these skills begin at birth and continue across the human life span. Approaches to Learning through Play Standards addresses how a child gathers and constructs knowledge, organizes and understands information, applies that knowledge, and transfers the self-constructed learning beyond the immediate moment. The child must develop these imperative capacities to understand and use the content of literacy, mathematics, science, and social studies, as well as necessary emotional well-being and lifelong success. It is essential to provide children with optimal learning opportunities that feature the development of these skills as the key component of 21st century classrooms across our state.

From the moment of birth, healthy children are in a continuous state of exploring, discovering, and constructing meaningful relationships with the world around them. These innate qualities support children as they venture out to connect with and understand the world in which they live. When children are encouraged to follow their innate inquisitiveness, they develop processes that enable them to succeed in answering important self-constructed "how" or "I wonder" questions. While children follow their own self-directed leads, they may be unsure of the outcome but are willing to take that risk to find out what will happen next. This outlook provides children with great pleasure as they interact successfully to understand their world; therefore, they desire to return to this preferred state of mind again and again. Children enjoy learning that includes active self-direction, positive anticipation, risk-taking, pleasure, knowledge construction, absorption in the moment, and the desire to return to this state of mind, which is what we call play. Therefore, play is a powerful learning tool that enables the child to grow and develop a lifelong love of learning. Play is the child's natural state of mind and therefore influences all of the child's domains of development including physical, cognitive, language, social, aesthetic, and emotional. And equally as important, play as a focused state of mind provides the child with a context and positive attitude in which to develop their Approaches to Learning skills, which are shown to lead to lifelong success.

Purposeful Play

The best way to support children's learning in the early years is to provide hands-on, active learning experiences that include play activities. Play enables children to weave together past knowledge and new information to acquire new understanding and skill development. A child who is actively engaged by manipulating, investigating, and exploring concepts understands better than a child who just completes a worksheet. Play sequences and activities expand across all Key Areas of Learning and can build social, cognitive, and physical skill development when they are intentionally planned and facilitated by teachers who interact with children, asking open-ended questions to scaffold children's thinking and problem-solving.

AL.1 Constructing and Gathering Knowledge

BIG IDEAS: Children actively construct knowledge through routines, play, practices, and language. Children use a variety of strategies to gather information based upon their own individualized approach to learning.
ESSENTIAL QUESTIONS: What strategies can be used to gather information? What can I learn from my everyday experiences, including play?

A. CURIOSITY AND INITIATIVE

Standard	Concepts and Competencies	Supportive Practices
AL.1 2.A **Explore and ask questions to seek meaningful information about a growing range of topics, ideas, and tasks.**	**The learner will:** • Use senses to explore and learn from the environment. • Show interest and inquire about others' work. • Ask questions to understand something (e.g., "How does that work?") • Use play to practice new skills and knowledge. • Demonstrate interest in new materials and experiences that are introduced into the classroom (e.g., use play to practice new skills and knowledge, use vocabulary words or concepts learned in class during play). • Ask questions to learn from others (e.g., "How did you make that?").	**The adult will:** Design a classroom with clearly defined interest areas and materials that invite students to explore, discover, and create. Provide a variety of materials to stimulate experiences, knowledge, participation, and interests (e.g., materials/ activities appealing to a variety of senses, learning styles, multiple intelligences). Respond to students' questions (inquiry) with explanations that may help them understand. Encourage students to research answers to questions through books and other media. Provide a variety of subject-integrated activities. Ask open-ended and higher-level questions to facilitate sharing, engage the listener, seek meaningful information, and extend learning. Provide ample time to practice new skills and knowledge through playful experiences. Regularly rotate classroom materials and formally introduce new objects and activities into the classroom by showing excitement (e.g., "Look what I brought for us to do today!").

B. RISK-TAKING

Standard	Concepts and Competencies	Supportive Practices
AL.1 2.B **Participate in a variety of challenging experiences.**	**The learner will:** • Actively explore new materials that are introduced into the classroom. • Imitate peer or adult engaged in new or challenging activities. • State discomfort at trying something new but make attempts to try with encouragement. • Listen attentively to learn appropriate techniques for a new skill, and follow through using the learned technique. • Differentiate between appropriate and inappropriate methods for learning information.	**The adult will:** Introduce new materials and activities by explaining what they are and providing instructions on use. Support students when activity becomes challenging (e.g., active listening, encouragement, offer specific feedback). Engage students in "what if" scenarios to discuss potentially dangerous or inappropriate responses to situations. Rotate materials in the classroom often to provide a variety of diverse experiences. Demonstrate enthusiasm when introducing new materials and challenges.

C. STAGES OF PLAY

Standard	Concepts and Competencies	Supportive Practices
AL.1 2.C **Engage in cooperative, purposeful, and interactive play experiences that enhance learning.**	**The learner will:** • Engage in simple games with rules demonstrating the ability to plan ahead and to develop strategies. • Engage in teacher- and student-driven activities. • Cooperate with peers during activities/ experiences. • Engage in role-play activities. • Create and use props during role-play activities.	**The adult will:** Create an environment that fosters cooperative learning. Model cooperation skills. Provide a variety of materials to support student learning through play. • Provide sufficient amount of time for playing games, cooperative activities, and role-play experiences. • Rotate materials often to support students learning through play.

AL.2 Organizing and Understanding Information

BIG IDEA: Strategies for filtering and organizing information are important to the learning process.
ESSENTIAL QUESTIONS: How do I decide what information/task to attend to? What strategies do I use to organize information?

A. ENGAGEMENT AND ATTENTION

Standard	Concepts and Competencies	Supportive Practices
AL.2 2.A **Complete a task, despite interruptions or classroom disruptions.**	**The learner will:** • Complete activities or tasks from beginning to end with independence. • Follow multi-step directions. • Move away from distractions to complete a task. • Self-monitor to remain focused on completing a task.	**The adult will:** Save students' work for later completion if transition to a new activity is necessary. Encourage students to complete tasks that are challenging. Allow ample time to complete tasks and activities. • Give clear and simple directions or explanations. • Minimize interruptions and disruptions for students who are concentrating on a specific task or activity. • Offer constructive feedback on process and product to all students, helping those who are demonstrating difficulty completing a task or activity. • Differentiate based on student needs. • Model self-monitoring behaviors.

B. TASK ANALYSIS

Standard	Concepts and Competencies	Supportive Practices
AL.2 2.B **Complete multi-step tasks with independence.**	**The learner will:** • Attend and follow through with written or oral multi-step directions. • Explain a complex sequence. • State the steps necessary to complete a complex task. • Share the desired outcome or end goal of a task or activity. • Break task into smaller components and complete one at a time.	**The adult will:** Ask students to describe the steps required to complete a task. Model goal-setting and breaking tasks into steps using explicit vocabulary (e.g., first, next, last). Encourage students to explain the sequence, steps, and desired outcomes of self-initiated tasks and activities. • Use clear and concise directions (written or oral) for the completion of tasks. • Review steps of a task prior to completion, providing reminders throughout the process. • Differentiate based on student needs.

C. PERSISTENCE

Standard	Concepts and Competencies	Supportive Practices
AL.2 2.C **Accomplish challenging tasks independently.**	**The learner will:** • Attempt to complete a task in more than one way (e.g., using materials in new ways, trial and error, breaking tasks into steps) before asking for help or stopping due to frustration. • Use and build upon prior knowledge to accomplish a challenging task. • Stick to a task after experiencing frustration. • Show pride in completion of a challenging task.	**The adult will:** Model and discuss a variety of strategies that can be used to follow through on a challenging task (e.g., using materials in new ways, trial and error, breaking tasks into steps, asking for help from a competent peer or adult). Encourage students to develop alternative solutions to accomplish a task. Ask open-ended questions to help develop alternative solutions without giving the answer. • Offer constructive feedback on students' efforts to work through challenging tasks. • Acknowledge students' completion of a challenging task.

D. PATTERNING

Standard	Concepts and Competencies	Supportive Practices
AL.2 2.D **Recognize and create increasingly complex patterns.**	**The learner will:** • Identify patterns in the environment. • Identify patterns in literacy. • Recognize, describe, extend, and transfer a three-element pattern (e.g., ABC). • Reproduce a more complex pattern and verbalize the pattern.	**The adult will:** • Engage students in finding patterns (e.g., in the environment, literacy, mathematical, scientific, arts). • Model creating patterns. • Provide opportunities to create and extend patterns. • Discuss patterns (e.g., "Why do you think that is a pattern?" "What is missing from this pattern?").

E. MEMORY

Standard	Concepts and Competencies	Supportive Practices
AL.2 2.E **Employ new and familiar strategies to recall information for a purpose.**	**The learner will:** • Recall information and/or experiences from the past. • Engage in use of mnemonic devices. • Recall details from stories, events, and experiences. • Share family experiences using stories, pictures, photos, and/or videos.	**The adult will:** Encourage students to talk about past experiences and events. Maintain documentation of past events (e.g., pictures, photos, videos, and/or quotes) from students. Post and explore this documentation with the students over time. • Use visuals to support memory. • Introduce mnemonic devices as a strategy to promote recall. • Provide opportunities for students to write about past events (e.g., pictures, photos, videos, memory books, quotes).

AL.3 Applying Knowledge

BIG IDEA: Prior knowledge and experiences can be used to express and create new understandings.
ESSENTIAL QUESTIONS: How do I use what I already know to understand new things? How do I represent new understandings?

A. CREATIVITY

Standard	Concepts and Competencies	Supportive Practices
AL.3 2.A **Use and connect materials/ strategies in uncommon ways to create something new or to solve problems.**	**The learner will:** • Use a variety of materials to explore and express ideas and emotions. • Recognize imagination and creativity in others. • Use previously learned strategies in a new situation. • Elaborate, refine, and evaluate own ideas. • Communicate own ideas. • Be open and responsive to new and diverse perspectives. ***See also 9.1.M 2.E; 9.1.D 2.E; 9.1.V 2.E; 1.4 2.M; 1.5 2.E***	**The adult will:** Provide a variety of materials to use in creating. Provide opportunities to use materials in uncommon ways. Use "I wonder" statements to encourage creativity with use of objects. Model how to elaborate, refine, evaluate, and communicate ideas and perspectives. ***See also 9.1.M 2.E; 9.1.D 2.E; 9.1.V 2.E; 1.4 2.M; 1.5 2.E***

B. INVENTION

Standard	Concepts and Competencies	Supportive Practices
AL.3 2.B **Create an object to serve a functional purpose.**	**The learner will:** • Explore different ways to use everyday objects. • Describe a plan to create a functional object. • Answer questions to explain the purpose of a creation.	**The adult will:** Provide opportunities to explore and experiment with new objects. Encourage students to pre-plan their creative efforts. Provide opportunities to present and describe creations. Model a variety of ways to research new information. Provide a variety of texts to support students' new ideas. Use "I wonder" statements to encourage creativity with use of objects. • Offer specific feedback on students' creative efforts. • Model how to engage in creative thinking and planning.

C. REPRESENTATION

Standard	Concepts and Competencies	Supportive Practices
AL.3 2.C **Use materials and objects to represent new concepts.**	**The learner will:** • Create something new to demonstrate understanding of a previously learned concept. • Choose a preferred method of representation from a menu of choices. • Use music, art, stories, and/or open-ended materials to represent concepts, ideas, thoughts, and feelings. • Explain representation.	**The adult will:** Provide open-ended materials. Provide opportunities to present and describe creations. • Provide opportunities to represent through music, art, or stories. • Differentiate based on student needs. • Encourage students to try multiple methods of representation. • Model and provide examples of representation in a variety of forms. • Provide constructive feedback.

AL.4 Learning through Experience

BIG IDEA: Experiences provide the context in which learning is constructed.
ESSENTIAL QUESTIONS: In what ways does an experience in one setting influence my learning and experiences in another setting? How do I learn from my mistakes and/or from challenging situations?

A. MAKING CONNECTIONS

Standard	Concepts and Competencies	Supportive Practices
AL.4 2.A **Relate knowledge learned from one experience to another.**	**The learner will:** • Share personal (e.g., home, cultural, community) experiences during school activities. • Understand that appropriate activities and events may differ from one environment to another. • Share new skills or tasks learned or practiced. • Practice skills learned in whole group demonstration during small group or independent practice. • Apply a skill to multiple tasks (e.g., determining key details in text to solve a word problem).	**The adult will:** • Foster family partnerships to support student learning both at home and at school. • Provide families updates about activities that are occurring in school (e.g., daily message boards, newsletters, classroom websites, journals). • Talk with students about their interests and activities and connect those activities to student learning. • Acknowledge and value differences in class and home structure. • Provide materials that encourage practice of skills demonstrated during whole group meeting time. • Observe students and provide feedback as they practice applying and connecting skills. • Model and provide examples of making connections. • Differentiate based on student needs.

B. RESILIENCY

Standard	Concepts and Competencies	Supportive Practices
AL.4 2.B **Recognize that everyone makes mistakes and that using positive coping skills can result in learning from the experience.**	***Reference 16.1 1.C***	***Reference 16.1 1.C***

C. PROBLEM-SOLVING

Standard	Concepts and Competencies	Supportive Practices
AL.4 2.C **Use problem-solving strategies to achieve a positive outcome.**	**The learner will:** • Try new ways to complete an unfamiliar task. • Attempt to complete a task in more than one way (e.g., using materials in new ways, trial and error, breaking tasks into steps) before asking for help or stopping due to frustration. • Ask questions to clarify problems. • Discuss the different ways used to accomplish a task or to solve a problem. • Recall and use a previously successful strategy. • Change plan if a better strategy presents itself.	**The adult will:** Explicitly discuss and present/model a variety of strategies that can be used to solve problems (e.g., using materials in new ways, trial and error, breaking tasks into steps, asking for help from a competent peer or adult). Create and provide opportunities for students to engage in problem-solving activities (e.g., role-play). Encourage use of a variety of materials to solve problems or complete a task (e.g., "I wonder if we could use this box to catch the worm?"). Engage students in interactions that use known strategies in new situations. Display a variety of materials and ask students to complete a task, allowing them to choose the materials that best suit the activity. Ask open-ended questions that require thought and creative thinking (e.g., "What is another way you could solve this problem?") to facilitate problem-solving. Observe how students solve problems in the classroom and offer assistance when needed.

Approaches to Learning through Play Glossary

Associative Play—A form of play in which a group of children participate in similar and/or identical activities without formal organization, group direction, group interaction, or a definite goal; children may imitate others in a group but each child acts independently.

Attention—An ability to focus; take all stimuli in environment and focus on one thing.

Competence—The ability to perform a task, action, or function successfully.

Cooperative Play—Any organized recreation among a group of children in which activities are planned for the purpose of achieving some goal.

Culture—The way of life of a particular social, ethnic, or age group of people which includes beliefs, arts, customs, and behaviors.

Curiosity—A desire to learn or know about something; inquisitiveness.

Engagement—Ability to express oneself physically, cognitively, and emotionally during an activity; to feel a connection or a strong bond to work.

Extrinsic Motivation—Motivation that comes from factors outside an individual.

Gradual Release of Responsibility (GRRM)—The responsibility for task completion shifts gradually over time from the teacher to the student.

Initiative—A readiness and ability to be eager to lead an action.

Intrinsic Motivation—Motivation that comes from inside an individual rather than from any external or outside rewards.

Invention—An act of devising, creating, or producing using imagination (art, music).

Memory—The mental capacity or faculty of retaining and retrieving facts, events, impressions, etc., or of recalling or recognizing previous experiences.

Mnemonic Device—a mind memory and/or learning aid. Commonly, mnemonics are verbal—such as a very short poem or a special word.

Parallel Play—A form of social play where children play with toys like those the children around them are using, but the child is absorbed in his/her own activity; usually play beside rather than with one another.

Pattern—The regular and repeated way in which something happens or is done.

Persistence—The steady continuance of an action in spite of obstacles or difficulties.

Play—A self-selected activity that may or may not have a specific purpose.

Pretend Play—Using an object to represent something else while giving it action and motion; actively experimenting with the social and emotional roles of life; can build skills in many developmental areas.

Provocation Strategies—strategies which promote thoughtful practices that enhance the teaching and learning of young children within and across diverse communities.

Resilience—The ability to cope with and bounce back from all types of challenges. A person thrives, matures, and increases competence by drawing on biological, psychological, and environmental resources.

Solitary Play—A form of play among a group of children within the same room or area in which each child engages in an independent activity using toys that are different from the toys of others; shows no interest in joining in or interfering with the play of others

Task Analysis—A process of breaking down complex behaviors into smaller, discrete, specific sub-behaviors to be performed in a certain order for maximum success.

Temperament—The combination of mental, physical, and emotional traits of a person; natural predisposition.

Social and Emotional Development

Student Interpersonal Skills

16.1 Self-Awareness and Self-Management

16.2 Establishing and Maintaining Relationships

16.3 Decision-Making and Responsible Behavior

Positive Behavior Techniques

All children benefit from safe, nurturing environments, clear and consistent routines, and effective caregivers who understand children's behavior as attempts to communicate needs. When children are taught skills to assist them in positive communication, coping, and interpersonal relationships, challenging behaviors can be prevented. For a smaller group of children more focused efforts can be applied to address specific behavioral needs. An even smaller population of children will need more intensive interventions in collaboration with trained professionals. This tiered-approach to addressing behavior contributes to a safe and supportive environment in which all children are respected and valued.

All children need early childhood experiences that nurture emotional security, positive self-concept, and respect for others. Children's social and emotional development are strengthened when they have experiences that promote a sense of identity and belonging within an accepting and responsive environment. Adults support children's self-identity and social competence by modeling respect for the children, using positive guidance techniques that support the development of self-control and interpersonal problem-solving, and by encouraging positive approaches to learning and interacting with others.

16.1 Self-Awareness and Self-Management

BIG IDEA: Understanding of self and ability to regulate behaviors and emotions are inextricably linked to learning and success.
ESSENTIAL QUESTIONS: How do I develop positive feelings about myself? How do I express and manage my emotions?

A. MANAGES EMOTIONS AND BEHAVIORS

Standard	Concepts and Competencies	Supportive Practices
16.1 2.A **Examine the impact of emotions and responses on view of self and interactions with others.**	**The learner will:** • Recognize and label complex feelings (e.g., frustrated, anxious, embarrassed). • Express feelings that are appropriate to the situation. • Express feelings in multiple ways (e.g., verbal or nonverbal: excited—silent clap/thumbs up; play; art; journal). • Control negative responses (e.g., express in appropriate way: talk with peer or tell teacher). • Know when to withhold expression of feelings in certain situations. • Discuss emotions and impact on others.	**The adult will:** • Use Positive Behavior Support to support students' social and emotional success. • Establish and state clear behavior expectations. • Offer materials to creatively express emotions. • Read books about feelings and talk about the outcomes. • Engage students in discussions about how they feel when they experience certain situations (e.g., positive and negative). • Model appropriate emotional responses. • Explain appropriate "cool-down" strategies. • Respond to students' verbal and nonverbal cues.

B. INFLUENCES OF PERSONAL TRAITS ON LIFE ACHIEVEMENTS

Standard	Concepts and Competencies	Supportive Practices
16.1 2.B **Understand the impact of personal traits on relationships and school achievement.**	**The learner will:** • Demonstrate awareness of self and own preferences. • Know and state independent thoughts and feelings. • Demonstrate pride in own accomplishments. • Demonstrate confidence in own abilities. • Choose materials and activities based on preferences and personal interests. • Discuss personal traits and possible impact on school achievement.	**The adult will:** • Encourage an environment where cultural and personal diversity are valued. • Provide opportunities to make decisions and choices. • Support students in sharing opinions about classroom activities, choices, and other experiences. • Graph students' likes and dislikes. • Share enthusiasm and describe students' abilities and preferences. • Display students' work.

C. RESILIENCY

Standard	Concepts and Competencies	Supportive Practices
16.1 2.C **Identify adverse situations which all people encounter and healthy ways to address.**	**The learner will:** • Use positive coping strategies (e.g., stay calm when something does not go as intended, stop and take a deep breath, short break). • Recognize that all people experience challenges and respond to them in different ways. **** See also AL.4 2.B***	**The adult will:** • Foster a positive environment where students learn from success and unsuccessful attempts. • Model positive coping strategies. • Offer a space where students can regain composure. • Talk through an adverse situation with students. • Help students understand that adverse situations happen to everyone. • Acknowledge students' demonstration of efforts to persevere during difficult or frustrating times.

D. GOAL-SETTING

Standard	Concepts and Competencies	Supportive Practices
16.1 2.D **Describe the effect of goal-setting on self and others.**	**The learner will:** • Set, discuss, and reflect on goals (e.g., behavioral, learning, play). • Recognize and adopt strategies to meet short- and long-term goals. • Analyze and evaluate alternative strategies in meeting goals.	**The adult will:** Explicitly use words such as "goal," "plan," "achieve," "met," "challenge." • Use strategies to encourage planning and discussion about goals and follow-through (e.g., plan, do, reflect). • Establish and maintain a safe climate in which reasonable risks are accepted and encouraged. • Discuss students' choices in terms of "goals" to be met and alternative strategies in meeting them.

16.2 Establishing and Maintaining Relationships

BIG IDEAS: Early adult-child relationships, based on attachment and trust, set the stage for life-long expectations that impact children's ability to learn, respect adult authority, and express themselves. Positive peer interactions create collaborative learning opportunities. Relationships with others provide a means of support.
ESSENTIAL QUESTION: How do my relationships with adults and peers help me feel secure, supported, and successful?

A. RELATIONSHIPS – TRUST AND ATTACHMENT

Standard	Concepts and Competencies	Supportive Practices
16.2 2.A **Establish relationships that are positive and supportive of others.**	**The learner will:** • Engage in reciprocal conversations with peers and adults. • Respond to adult's questions and directions. • Demonstrate appropriate affection for familiar adults and peers. • Seek out companionship from another student. • Use words denoting friendship. • Ask a peer to play. • Play cooperatively with peers for a sustained period of time. • Respond with empathy to others who are upset. • Share and take turns. • Respect feelings and belongings of others.	**The adult will:** • Use Positive Behavior Support to support students' social and emotional success. • Model appropriate methods and strategies of interaction based on school and community culture. • Talk about ideas related to school work, play, and home life. • Arrange the environment to encourage collaboration. • Use literature as a teaching strategy for appropriate and inappropriate interaction. • Incorporate time for uninterrupted student-directed purposeful play. • Provide daily opportunities for individual conversations between students and adults. • Describe others' feelings during difficult situations.

B. DIVERSITY

Standard	Concepts and Competencies	Supportive Practices
16.2 2.B **Recognize and tolerate the uniqueness of all people in all situations.**	**The learner will:** • Understand each person has a set of unique characteristics. • Label personal characteristics. • Discuss similarities and differences between self and others. • Understand family structures differ from one family to another. • Understand thoughts and feelings of others may differ from own. • Demonstrate respect for student's differences (e.g., including differences in thoughts and feelings).	**The adult will:** • Model and promote strategies that embrace individual and family diversity. • Provide opportunities to discuss and compare personal traits among members of the class. • Encourage family members to volunteer or share information, materials, and activities that reflect home cultures. • Include multicultural materials, especially those relevant to the cultures within the class (e.g., skin-tone crayons, books, dolls, music, dress-up clothing and props, posters). • Read and discuss text showing students/families of different races, cultures, ages, abilities, and family structure. • Explicitly discuss points of difference in thoughts and feelings.

C. COMMUNICATION

Standard	Concepts and Competencies	Supportive Practices
16.2 2.C **Explain the impact of communication on interactions with others.**	**The learner will:** • Communicate using details related to the topic being discussed, including topics of personal interest and special events. • Respond to conversation adding further detail, or contribute further to the topic being discussed. • Pose questions related to the topic being discussed. • Link conversation to prior knowledge and past learning experiences. • Respond to questions posed by adults and peers using detail. • Recognize conversational cues (e.g., wait, turn-taking).	**The adult will:** • Explicitly restate comments made by students and encourage those responding to add further detail, or contribute further to the topic being discussed. • Help students create and pose questions to initiate or continue a conversation. • Encourage students to speak in complete sentences, using detail. • Model acceptable conversational cues (e.g., wait time, turn-taking). • Talk about events that are currently relevant to students.

D. MANAGING INTERPERSONAL CONFLICTS

Standard	Concepts and Competencies	Supportive Practices
16.2 2.D **Identify and apply appropriate ways to resolve conflict.**	**The learner will:** • Use appropriate words and actions to express own needs. • Identify a problem and discuss possible solutions. • Independently solve simple conflicts with peers. • Negotiate conflicts using words. • Know when to ask an adult for help. • Use words during a conflict instead of physically responding. • Accept and attempt teacher's or others' ideas on strategies to solve a conflict.	**The adult will:** • Provide opportunities for student reflection and discussion of conflict resolution strategies. • Model, teach, and discuss possible strategies for resolving conflict (e.g., use of role-playing and stories, cool-down strategies). • Be open and available to help students resolve conflicts (e.g., "I" messages). • Design an area in the room that encourages students to solve conflicts.

E. SUPPORT – ASKING FOR HELP

Standard	Concepts and Competencies	Supportive Practices
16.2 2.E **Determine who, when, where, or how to seek help for solving problems.**	**The learner will:** • Attempt tasks independently before asking for help. • Recognize when help is needed. • Recognize appropriate sources of help (e.g., familiar adult, community helpers, peers). • Develop beginning understanding of moral and ethical dilemmas. • Ask for adult help to solve a problem or to complete a task after multiple unsuccessful attempts. • Respond appropriately to offers of help (e.g., "That's okay, I can do it." or "Yes, thank you.").	**The adult will:** Encourage students to try tasks independently before offering assistance. • Create an environment of trust by providing consistency and predictability in daily routines, activities, and staff. • Help students develop understanding of moral and ethical dilemmas. • Encourage students to turn to peers for assistance. • Offer assistance in helping a student complete a task after multiple unsuccessful attempts. • Discuss where students can go to for help when needed (e.g., peers, familiar adult, community helpers).

16.3 Decision-Making and Responsible Behavior

BIG IDEA: Actions and behaviors either positively or negatively affect how I learn, and how I get along with others.
ESSENTIAL QUESTION: How do I use healthy strategies to manage my behavior?

A. DECISION-MAKING SKILLS

Standard	Concepts and Competencies	Supportive Practices
16.3 2.A **Recognize that there are consequences for every decision which are the responsibility of the decision-maker.**	**The learner will:** • Recognize unsafe situations. • Tell an adult of an unsafe situation. • Warn a peer about a safety risk (e.g., chair not pushed in). • Encourage peers having a dispute to use positive decision-making strategies (e.g., use their words and work it out). • Discuss the reasons for having rules. • Develop understanding of natural consequences (e.g., lack of sleep, not brushing teeth).	**The adult will:** • Provide opportunities for students to create rules. • Discuss the reasons for having specific rules. • Model and teach a variety of decision-making strategies (e.g., vocabulary associated with decision-making strategies and consequences). • Provide reminders of rules and consequences when students test the rules. • Use natural consequences (e.g., falling due to running in the classroom) as opportunities to discuss consequences of behaviors.

B. UNDERSTANDING SOCIAL NORMS (Social Identity)

Standard	Concepts and Competencies	Supportive Practices
16.3 2.B **Demonstrate knowledge of how social norms affect decision-making and behavior.**	**The learner will:** • Use inside voices while indoors and outside voices when outdoors. • Cooperate in both large and small group activities. • Apply classroom rules to new situations. • Adjust to changes in routines and activities. • Follow rules and routines in classroom and other settings. • Discuss how social norms may affect decision-making behavior.	**The adult will:** • Use Positive Behavior Support to support students' understanding of social norms. • Discuss expectations of differing environments (e.g., library, restroom, cafeteria, classroom, outside). • Discuss expectations of a new or unfamiliar environment or situation (e.g., field trip, classroom visitor). • Model appropriate behavior. • Provide consistent rules and expectations in classroom environment. • Encourage families to provide consistent rules and expectations in home environment. • Provide literacy experiences related to socially acceptable ways to behavior in different places.

C. RESPONSIBLE ACTIVE ENGAGEMENT – EMPATHY

Standard	Concepts and Competencies	Supportive Practices
16.3 2.C **Actively engage in creating an environment that encourages healthy relationships.**	**The learner will:** • Respond with empathy to others. • Recognize when someone needs help and offer assistance. • Respect another's attempts to complete tasks independently.	**The adult will:** • Use Positive Behavior Support to support students' understanding of healthy relationships. • Encourage peers to help one another rather than offering adult assistance. • Identify and describe others' feelings including use of nonverbal cues. • Read and discuss books about empathy. • Provide specific feedback and acknowledgement on students' efforts to help others.

Social and Emotional Development Glossary

Active Engagement—The process of acting, participating, assisting, or actively connecting with others.

Communication—Processes by which information is exchanged between individuals.

Communication Skills—Verbal and nonverbal means of effectively conveying meaningful information.

Conflict—Inherent incompatibility between two or more people or two or more choices.

Conflict Resolution—Process by which issues arising from a disagreement or clash between ideas, principles, or people are settled.

Consequence—A positive or negative outcome resulting from a choice or decision.

Coping Skills—Behavioral tools that enable one to express negative feelings in ways that are not self-destructive or threatening to others and to overcome personal adversity or stress.

Culture—Shared attitudes, values, goals, behaviors, interactions and practices that are learned through social interactions which identify or distinguish groups.

Decision-Making—Process of coming to a conclusion or determination.

Diversity—Variety of characteristics that make individuals unique.

Emotions—The outward and inward expression of a person's state of mind based upon personality, mood, and temperament that influence relationships and must be appropriately managed.

Pyramid Model—Is used to support social and emotional competence in infants and young children.

Resilience—An ability to recover from or adjust easily to misfortune or change.

Language and Literacy Development

English Language Arts

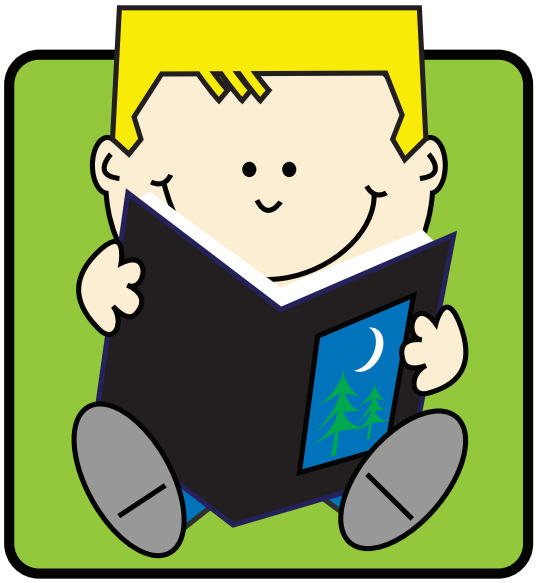
1.1 Foundational Skills

1.2 Reading Informational Text

1.3 Reading Literature

1.4 Writing

1.5 Speaking and Listening



Communication occurs in different ways. It is a way to share one's ideas and understand the ideas of others. Reading involves the use of pictures, symbols, and text to gain information and derive meaning, and writing is used for a variety of purposes. Children should be exposed to a variety of books to acquire new information and for personal fulfillment. Children apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate text. Children draw meaning from their prior knowledge and experience, their interactions with others, their knowledge of word meaning, and their word identification strategies. Children vary their use of the spoken and written language to communicate effectively with others. One of the first building blocks of reading is phonemic awareness; this is one of the best predictors of early reading achievement. Children should be developing this awareness in the early years by listening to rhyming stories and songs and engaging in word play activities.

Diversity and Culture

Today's early childhood programs include increasingly diverse groups of children, families, and teachers who represent many cultures, values, and lifestyles. Providers have a unique opportunity to create welcoming environments that emphasize respect for diversity and support families' cultural and linguistic differences. Teachers must help assure the preservation of home language while supporting the acquisition of Standard English. Programs should create experiences and opportunities that honor all children's cultures and values by developing creative strategies for including and expanding home-to-school connections and by providing students with varied ways to demonstrate their learning. Such experiences and opportunities assure all students' success in school.

1.1 Foundational Skills

BIG IDEA: Emerging reading involves the use of pictures, symbols, and text to gain information and derive meaning.
ESSENTIAL QUESTION: How do I acquire and practice pre-reading skills?

D. PHONICS AND WORD RECOGNITION

Standard	Concepts and Competencies	Supportive Practices
1.1 2.D **Know and apply grade-level phonics and word analysis skills in decoding words.**	**The learner will:** • Distinguish long and short vowels when reading regularly spelled one-syllable words. • Decode two-syllable words with long vowels and words with common prefixes and suffixes. • Read grade-level high-frequency sight words and words with inconsistent but common spelling-sound correspondences. • Read grade-appropriate irregularly spelled words (e.g., was, Wednesday, again, Earth).	**The adult will:** • Provide direct, explicit, and systematic phonics instruction. • Provide daily opportunities to practice reading on-level text and high-frequency words. • Post high-frequency words in the classroom (e.g., word wall). • Incorporate high-frequency words into meaningful context. • Provide ongoing progress monitoring to ensure mastery of taught skills. • Use decodable text for practice and transfer of phonics skills to text. • Use print and digital-text materials for functional purposes.

E. FLUENCY

Standard	Concepts and Competencies	Supportive Practices
1.1 2.E **Read with accuracy and fluency to support comprehension.**	**The learner will:** • Read on-level texts with purpose and understanding. • Read on-level texts orally with accuracy, appropriate rate, and expression in successive readings. • Use context to confirm or self-correct word recognition and understanding, rereading as necessary.	**The adult will:** • Include self-selected reading opportunities. • Provide a variety of on-level texts. • Provide daily opportunities to practice reading on-level texts and high-frequency words. • Post high-frequency words in the classroom (e.g., word wall). • Incorporate high-frequency words into meaningful context. • Model reading aloud with fluency to support comprehension. • Provide oral support for activities (e.g., choral reading, echo reading and/or paired reading). • Offer opportunities to practice repeated readings. • Encourage fluency through phrasing or chunking to aid in comprehension. • Use think-alouds to share how fluent readers navigate through a piece of text. • Model connections between fluency and comprehension.

1.2 Reading Informational Text

BIG IDEAS: Effective readers use appropriate strategies to construct meaning. Critical thinkers actively and skillfully interpret, analyze, evaluate, and synthesize information. An expanded vocabulary enhances one's ability to express ideas and information.
ESSENTIAL QUESTIONS: What is the text really about? How does interaction with the text promote thinking and response? Why learn new words? What strategies and resources does the learner use to figure out unknown vocabulary?

A. KEY IDEAS AND DETAILS – MAIN IDEA

Standard	Concepts and Competencies	Supportive Practices
1.2 2.A **Identify the main idea of a multi-paragraph text as well as the focus of specific paragraphs.**	**The learner will:** • Identify the main idea of a multi-paragraph text. • Identify the main idea of specific paragraphs within the text. • Know the details of a text can be used to support a topic or main idea. • Provide relevant details from a text which support the main idea.	**The adult will:** Provide and read a variety of appropriate multi-paragraph informational texts (e.g., magazines, websites, books). • Assist students in selecting age- and ability-appropriate nonfiction materials to read. • Model identifying main idea of multi-paragraph texts and focus of specific paragraphs. • Provide multiple opportunities to identify main idea of multi-paragraph texts and focus of specific paragraphs.

B. KEY IDEAS AND DETAILS – TEXT ANALYSIS

Standard	Concepts and Competencies	Supportive Practices
1.2 2.B **Ask and answer questions such as who, what, where, when, why, and how to demonstrate understanding of key details in a text.**	**The learner will:** • Use specific details from the text to answer questions. • Answer "who" or "what" the text is about. • Answer "how" and/or "why" questions using specifics from the text. • Generate questions about specific details in the text.	**The adult will:** • Ask directed questions about a text. • Encourage students to generate questions about specific details in the text. • Provide peer-to-peer opportunities to discuss informational texts. • Model proper questioning techniques. • Ask "who," "what," "how," and "why" questions.

C. KEY IDEAS AND DETAILS

Standard	Concepts and Competencies	Supportive Practices
1.2 2.C **Describe the connection between a series of events, concepts, or steps in a procedure within a text.**	**The learner will:** • Find similarities and differences between a series of events, concepts, or steps in a procedure. • Answer cause-and-effect questions about a series of events, concepts, or steps in a procedure within a text.	**The adult will:** • Select appropriate multi-paragraph informational texts (e.g., magazines, websites, books). • Assist students in selecting age- and ability-appropriate nonfiction materials to read. • Provide learning centers and a classroom library where students can interact independently with texts.

E. CRAFT AND STRUCTURE – TEXT STRUCTURE

Standard	Concepts and Competencies	Supportive Practices
1.2 2.E **Use various text features and search tools to efficiently locate key facts or information in a text.**	**The learner will:** • Use table of contents to locate information. • Use index or digital-text search feature to locate key facts or information. • Use headings and captions to locate key facts or information.	**The adult will:** Model the use of text features to search for information within a text. Provide multiple opportunities to interact with informational texts. • Identify and define text features. • Model the use of text features to identify key facts. • Select appropriate informational texts (e.g., magazines, websites, books). • Assist students in selecting age- and ability-appropriate nonfiction materials to read. • Use print and digital text materials for functional purposes.

F. CRAFT AND STRUCTURE – VOCABULARY

Standard	Concepts and Competencies	Supportive Practices
1.2 2.F **Determine the meaning of words and phrases as they are used in grade-level text including multiple-meaning words.**	**The learner will:** • Connect prior knowledge to unfamiliar words. • Participate in discussions about unfamiliar words. • Select the correct meaning of words and phrases, including multiple-meaning words. • Make predictions about word meanings. • Use strategies to look up unfamiliar words.	**The adult will:** Provide concrete materials in learning centers to assist students in connecting prior knowledge to new words or phrases. • Model researching unfamiliar words in a text. • Model using text and picture supports to determine the meaning of words and phrases. • Model using context clues to determine the meaning of words and phrases. • Provide independent practice with grade-level texts. • Model appropriate use of Tier II words. • Scaffold the definition of words when introducing a new topic, being certain to provide several examples to demonstrate the meaning.

G. INTEGRATION OF KNOWLEDGE AND IDEAS – DIVERSE MEDIA

Standard	Concepts and Competencies	Supportive Practices
1.2 2.G **Explain how graphic representations contribute to and clarify a text.**	**The learner will:** • Describe illustrations or graphics in a text in detail to answer specific questions about the text. • Use graphics to further understand what is presented in a text.	**The adult will:** Model how graphic representations (e.g., charts, graphs, captions) clarify meaning of written text.

H. INTEGRATION OF KNOWLEDGE AND IDEAS – EVALUATING ARGUMENTS

Standard	Concepts and Competencies	Supportive Practices
1.2 2.H **Describe how reasons support specific points the author makes in a text.**	**The learner will:** • Identify the evidence an author uses. • Connect the evidence to specific points in the text.	**The adult will:** • Select appropriate informational texts (e.g., magazines, websites, books). • Assist students in selecting age- and ability-appropriate nonfiction materials to read. • Model and provide practice with supportive details. • Prompt students to refer back to texts.

I. INTEGRATION OF KNOWLEDGE AND IDEAS – ANALYSIS ACROSS TEXTS

Standard	Concepts and Competencies	Supportive Practices
1.2 2.I **Compare and contrast the most important points presented by two texts on the same topic.**	**The learner will:** • Recognize that texts have similar components that can be compared and contrasted (e.g., main ideas, details). • Participate in strategies that provide opportunities to compare and contrast texts and/or components of texts (e.g., Venn diagrams, T-charts).	**The adult will:** • Assist students in selecting age- and ability-appropriate nonfiction materials to read. • Use structural supports (e.g., graphic organizers) to compare and contrast texts. • Model and provide practice.

J. VOCABULARY ACQUISITION AND USE

Standard	Concepts and Competencies	Supportive Practices
1.2 2.J **Acquire and use grade-appropriate conversational, general academic, and domain-specific words and phrases.**	**The learner will:** • Talk about pictures and text using new vocabulary words or phrases. • Use new vocabulary in the context of dramatic play, daily routines, and classroom conversations. • Use new vocabulary when asking questions or describing situations or objects. • Use new vocabulary from a variety of content areas. • Use context clues to understand word and sentence meanings.	**The adult will:** Use Tier III vocabulary daily and throughout different contexts. Provide opportunities for oral language practice. Assist students in connecting new vocabulary to prior knowledge. • Read appropriate informational text. • Use think-alouds to share how a fluent reader navigates through informational text. • Explore similarities and differences in words, meanings, and concepts. • Interactively use a vocabulary word wall to teach, reinforce, and encourage the use of new words. • Directly teach increasingly sophisticated words with examples and non-examples.

K. VOCABULARY ACQUISITION AND USE

Standard	Concepts and Competencies	Supportive Practices
1.2 2.K **Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade-level reading and content, choosing from a range of strategies and tools.**	**The learner will:** • Recognize words or phrases that are unfamiliar to them. • Connect prior knowledge to unfamiliar words. • Make predictions about word meanings. • Use strategies to look up unfamiliar words. • Talk about connections between familiar and unfamiliar words or phrases that mean similar things (e.g., grass, lawn). • Participate in discussions about unfamiliar words.	**The adult will:** Model researching unfamiliar words in a text. Model appropriate use of multiple-meaning words. • Model using text and picture supports to determine the meaning of words and phrases. • Model using context clues to determine the meaning of words and phrases. • Provide independent practice with grade-level texts.

L. RANGE OF READING

Standard	Concepts and Competencies	Supportive Practices
1.2 2.L **Read and comprehend literary nonfiction and informational text on grade level, reading independently and proficiently.**	**The learner will:** • Ask and answer questions about text. • Share relevant prior knowledge about text being read aloud. • Respond to and build on comments from other children. • Use ideas gained in group reading activities in other daily routines, learning centers, and activities.	**The adult will:** • Select appropriate informational text. • Assist students in selecting age- and ability-appropriate nonfiction materials to read. • Provide a variety of opportunities to demonstrate comprehension through different modalities (e.g., multiple choice, oral retell, drawing pictures).

1.3 Reading Literature

BIG IDEAS: Effective readers use appropriate strategies to construct meaning. Critical thinkers actively and skillfully interpret, analyze, evaluate, and synthesize information. An expanded vocabulary enhances one's ability to express ideas and information.
ESSENTIAL QUESTIONS: What is the text really about? How does interaction with the text promote thinking and response? Why learn new words? What strategies and resources does the learner use to figure out unknown vocabulary?

A. KEY IDEAS AND DETAILS – THEME

Standard	Concepts and Competencies	Supportive Practices
1.3 2.A **Recount stories and determine their central message, lesson, or moral.**	**The learner will:** • Retell story in sequential order. • Recall key details of a story. • Use a variety of strategies to retell a story (e.g., picture cards, dramatic play, illustration). • Identify the central message, lesson, or moral.	**The adult will:** • Select appropriate literary text. • Assist students in selecting age- and ability-appropriate fiction materials to read. • Model retelling with key details. • Model identifying the big idea or lesson of a story (e.g., Aesop's fables). • Provide multiple opportunities to practice retelling and identifying the central message/lesson/moral of a story. • Use reader response journals.

B. KEY IDEAS AND DETAILS – TEXT ANALYSIS

Standard	Concepts and Competencies	Supportive Practices
1.3 2.B **Ask and answer questions such as who, what, where, when, why, and how to demonstrate understanding of key details in a text.**	**The learner will:** • Use specific details from the story to answer questions. • Answer "who" or "what" the story is about. • Answer "how" and/or "why" questions using specifics from the story. • Generate questions about specific details in the story.	**The adult will:** • Select appropriate literary text. • Assist students in selecting age- and ability-appropriate fiction materials to read. • Provide time and opportunities to practice asking and answering questions about a literary text. • Use anchor charts for question-starting words (who, what, where, when, why, how).

C. KEY IDEAS AND DETAILS – LITERARY ELEMENTS

Standard	Concepts and Competencies	Supportive Practices
1.3 2.C **Describe how characters in a story respond to major events and challenges.**	**The learner will:** • Demonstrate understanding that "characters" have a role in the story. • Identify major events in the story. • Discuss how characters in a story respond to major events and challenges.	**The adult will:** • Select appropriate literary text. • Assist students in selecting age- and ability-appropriate fiction materials to read. • Model how characters respond to major events and challenges. • Provide multiple opportunities for students to describe how characters react to major events and challenges.

D. CRAFT AND STRUCTURE – POINT OF VIEW

Standard	Concepts and Competencies	Supportive Practices
1.3 2.D **Acknowledge differences in the points of views of characters, including by speaking in a different voice for each character when reading dialogue aloud.**	**The learner will:** • Understand that stories have multiple characters. • Understand that each character may tell the story differently. • Use different voices for each character when reading dialogue aloud.	**The adult will:** • Model differences in the points of views of characters, including by speaking in a different voice for each character when reading dialogue aloud. • Provide a variety of text with dialogue.

E. CRAFT AND STRUCTURE – TEXT STRUCTURE

Standard	Concepts and Competencies	Supportive Practices
1.3 2.E **Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action.**	**The learner will:** • Understand that stories have structure. • Answer questions how a story is put together. • Retell stories sequentially using "beginning," "middle," and "end."	**The adult will:** • Provide a variety of literary texts. • Assist students in selecting age- and ability-appropriate fiction materials to read. • Model and examine the structure of a story (narrative elements). • Use story maps, charts, or graphic organizers.

F. CRAFT AND STRUCTURE – VOCABULARY

Standard	Concepts and Competencies	Supportive Practices
1.3 2.F **Describe how words and phrases supply rhythm and meaning in a story, poem, or song.**	**The learner will:** • Identify rhyme. • Identify repetition. • Identify rhythm and patterns. • Discuss literacy devices and their impact on the meaning of the text.	**The adult will:** • Read a variety of genres of literature (e.g., poetry, plays, fables, legends, picture books) and use guided discussion. • Assist students in selecting age- and ability-appropriate fiction materials to read. • Identify the literary devices in rhyme, repetition, rhythm, and patterns.

G. INTEGRATION OF KNOWLEDGE AND IDEAS – SOURCES OF INFORMATION

Standard	Concepts and Competencies	Supportive Practices
1.3 2.G **Use information from illustrations and words, in print or digital text, to demonstrate understanding of characters, setting, or plot.**	**The learner will:** • Demonstrate understanding that the "setting" is where the story takes place. • Demonstrate understanding that "characters" are people or animals who have a role in the story. • Connect illustrations to the text. • Describe the relationship between the illustrations and the text.	**The adult will:** • Provide a variety of texts and digital media with vivid details and illustrations. • Assist students in selecting age- and ability-appropriate fiction materials to read. • Use reader-response journals. • Provide graphic organizers.

H. INTEGRATION OF KNOWLEDGE AND IDEAS – TEXT ANALYSIS

Standard	Concepts and Competencies	Supportive Practices
1.3 2.H **Compare and contrast two or more versions of the same story by different authors or from different cultures.**	**The learner will:** • Recognize that stories have similar components that can be compared and contrasted (e.g., character, settings, events). • Participate in strategies that provide opportunities to compare and contrast stories and/or components of stories (e.g., Venn diagrams, T-charts).	**The adult will:** • Select appropriate literary texts. • Assist students in selecting age- and ability-appropriate fiction materials to read. • Model finding similarities and differences between stories. • Model and provide guided practice for the use of a few appropriate graphic organizers to build connections and organize information. • Use reader-response journals.

I. VOCABULARY ACQUISITION AND USE – STRATEGIES

Standard	Concepts and Competencies	Supportive Practices
1.3 2.I **Determine or clarify the meaning of unknown or multiple-meaning words and phrases based upon grade-level reading and content, choosing from a range of strategies and tools.**	**The learner will:** • Recognize words or phrases that are unfamiliar to them. • Connect prior knowledge to unfamiliar words. • Make predictions about word meanings. • Use strategies to look up unfamiliar words. • Talk about connections between familiar and unfamiliar words or phrases that mean similar things (e.g., grass, lawn). • Participate in discussions about unfamiliar words.	**The adult will:** • Provide a variety of text that include sensory and/or emotional words and phrases. • Model identifying sensory and emotional vocabulary in a text. • Use reader response journals.

J. VOCABULARY ACQUISITION AND USE

Standard	Concepts and Competencies	Supportive Practices
1.3 2.J **Acquire and use grade-appropriate conversational, general academic, and domain-specific words and phrases.**	**The learner will:** • Talk about pictures and text using new vocabulary words or phrases. • Use new vocabulary in the context of dramatic play, daily routines, and classroom conversations. • Use new vocabulary when asking questions or describing situations or objects. • Use new vocabulary when answering questions or describing situations or objects. • Use new vocabulary from a variety of content areas. • Use context clues to understand word and sentence meanings.	**The adult will:** Use vocabulary daily and throughout different contexts. Assist students in connecting new vocabulary to prior knowledge. Directly teach increasingly sophisticated words with examples and non-examples. • Read appropriate literary texts. • Assist students in selecting age- and ability-appropriate fiction materials to read. • Provide opportunities for oral language practice. • Use think-alouds to share how a fluent reader navigates through literary text. • Explore similarities and differences in words, meanings, and concepts. • Introduce vocabulary from literary texts. • Interactively use a vocabulary word wall to teach, reinforce, and encourage the use of new words. • Use reader-response journals.

K. RANGE OF READING

Standard	Concepts and Competencies	Supportive Practices
1.3 2.K **Read and comprehend literature on grade level, reading independently and proficiently.**	**The learner will:** • Ask and answer questions about text. • Share relevant prior knowledge about text being read aloud. • Respond to and build on comments from other students. • Use ideas gained in group reading activities in other daily routines, learning centers, and activities.	**The adult will:** • Provide multiple opportunities to read on grade-level text. • Use reader-response journals.

1.4 Writing

BIG IDEAS: Audience and purpose influence a writer's choice of organizational pattern, language, and literary techniques. Effective research requires the use of varied resources to gain or expand knowledge.
ESSENTIAL QUESTIONS: What makes clear and effective writing? Why do writers write? Who is the audience? What will work best for the audience? Where can one find information to answer questions?

A. INFORMATIVE/EXPLANATORY

Standard	Concepts and Competencies	Supportive Practices
1.4 2.A **Write informative/explanatory texts to examine a topic and convey ideas and information clearly.**	**The learner will:** • Create a picture about a particular nonfiction topic and write about it. • Use common spelling patterns, phonemic awareness, and spelling conventions when writing.	**The adult will:** Model writing in a variety of forms (e.g., letters, descriptive directions, thank-you notes, rules, graphs/tables). Frequently discuss figures, diagrams, and explanatory illustrations from informative text. Provide opportunities to engage in shared, interactive, and independent writing. • Read and showcase published informational text to demonstrate use of topic and supporting details. • Model the use of graphic organizers. • Provide frequent opportunities to write. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program).

B. INFORMATIVE/EXPLANATORY – FOCUS

Standard	Concepts and Competencies	Supportive Practices
1.4 2.B **Identify and introduce the topic.**	**The learner will:** • Respond to writing prompts on a specific topic. • Choose a specific topic to write about. • Write an introductory sentence.	**The adult will:** Provide opportunities for whole group or small group discussion on a topic before writing. Read and showcase published informational text to demonstrate use of topic and supporting details. Provide opportunities to engage in shared, interactive, and independent writing. • Model writing on a single topic and writing an introductory sentence. • Provide a topic for writing. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program).

C. INFORMATIVE/EXPLANATORY – CONTENT

Standard	Concepts and Competencies	Supportive Practices
1.4 2.C **Develop the topic with facts and/or definitions.**	**The learner will:** • Brainstorm main ideas on a chosen topic (e.g., topic—bats, ideas—helpful, mammal, scary). • Choose a main idea to focus writing on topic. • Generate relevant details that support the chosen topic. • Include facts and definitions in writing.	**The adult will:** • Provide opportunities to engage in shared, interactive, and independent writing. • Model developing a topic with facts and definitions. • Read and showcase published informational text to demonstrate use of topic and supporting details. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program).

D. INFORMATIVE/EXPLANATORY – ORGANIZATION

Standard	Concepts and Competencies	Supportive Practices
1.4 2.D **Group information and provide a concluding statement or section.**	**The learner will:** • Use graphic organizers to logically organize and group information. • Logically organize and group information when writing. • Include an ending sentence.	**The adult will:** • Provide opportunities to engage in shared, interactive, and independent writing. • Model organizational structure and ending sentences. • Model the use of a graphic organizer to develop a topic and supporting details. • Read and showcase published informational texts to demonstrate use of organization and conclusions. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program).

E. INFORMATIVE/EXPLANATORY – STYLE

Standard	Concepts and Competencies	Supportive Practices
1.4 2.E **Choose words and phrases for effect.**	**The learner will:** • Use vivid and precise language.	**The adult will:** • Provide opportunities to engage in shared, interactive, and independent writing. • Read and showcase published informational texts to demonstrate use of vivid and precise language. • Model using vivid and precise language. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program).

F. INFORMATIVE/EXPLANATORY – CONVENTIONS OF LANGUAGE

Standard	Concepts and Competencies	Supportive Practices
1.4 2.F **Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.**	**The learner will:** • Capitalize proper nouns. • Use commas and apostrophes appropriately. • Spell words, using common spelling patterns. • Consult reference material as needed.	**The adult will:** • Model using grade-appropriate conventions. • Model using grade-appropriate proofreading skills. • Provide opportunities to engage in shared, interactive, and independent writing. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program).

G. OPINION/ARGUMENTATIVE

Standard	Concepts and Competencies	Supportive Practices
1.4 2.G **Write opinion pieces on familiar topics or texts.**	**The learner will:** • Participate in discussions about fact and opinion. • Generate an opinion and write about it. • Use common spelling patterns, phonemic awareness, and spelling conventions when writing.	**The adult will:** • Facilitate discussions about fact and opinion. • Model writing an opinion piece. • Read and showcase published opinion texts. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program). • Provide opportunities to engage in shared, interactive, and independent writing.

H. OPINION/ARGUMENTATIVE – FOCUS

Standard	Concepts and Competencies	Supportive Practices
1.4 2.H **Identify the topic and state an opinion.**	**The learner will:** • Choose topic. • State an opinion.	**The adult will:** • Brainstorm a variety of topics. • Provide examples of differences between fact and opinion. • Model how to choose a topic and form an opinion. • Read and showcase published opinion texts. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program). • Provide opportunities to engage in shared, interactive, and independent writing.

I. OPINION/ARGUMENTATIVE – CONTENT

Standard	Concepts and Competencies	Supportive Practices
1.4 2.I **Support the opinion with reasons that include details connected to the opinion.**	**The learner will:** • Participate in discussions supporting opinions. • Generate relevant reasons that support the opinion.	**The adult will:** • Model how to support an opinion. • Provide frequent opportunities for writing and dictating stories. • Read and showcase published opinion texts. • Share examples of opinion texts found in the environment (e.g., magazine articles, warning signs, posters, newspapers). • Provide opportunities to engage in shared, interactive, and independent writing. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program).

J. OPINION/ARGUMENTATIVE – ORIENTATION

Standard	Concepts and Competencies	Supportive Practices
1.4 2.J **Create an organizational structure that includes reasons and a concluding statement.**	**The learner will:** • Use graphic organizers to logically organize and group information. • Logically organize and group reasons when writing. • Include an ending sentence.	**The adult will:** • Model structure that includes reasons. • Model concluding statements. • Read and showcase published opinion texts. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program). • Provide opportunities to engage in shared, interactive, and independent writing.

K. OPINION/ARGUMENTATIVE – STYLE

Standard	Concepts and Competencies	Supportive Practices
1.4 2.K **Use a variety of words and phrases to appeal to the audience.**	**The learner will:** • Identify audience for opinion piece. • Use vivid and precise language.	**The adult will:** • Model using a variety of words and phrases in writing to appeal to the audience. • Model how to determine the audience for an opinion piece of writing. • Read and showcase published opinion texts that use appealing words and phrases. • Provide opportunities to engage in shared, interactive, and independent writing. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program).

L. OPINION/ARGUMENTATIVE – CONVENTIONS OF LANGUAGE

Standard	Concepts and Competencies	Supportive Practices
1.4 2.L **Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.**	**The learner will:** • Capitalize proper nouns. • Use commas and apostrophes appropriately. • Spell words, drawing on common spelling patterns. • Consult reference material as needed.	**The adult will:** • Model using grade-appropriate conventions. • Model using grade-appropriate proofreading skills. • Provide opportunities to engage in shared, interactive, and independent writing. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program).

M. NARRATIVE

Standard	Concepts and Competencies	Supportive Practices
1.4 2.M **Write narratives to develop real or imagined experiences or events.**	**The learner will:** • Write about a real or imagined experience or event. • Use common spelling patterns, phonemic awareness, and spelling conventions when writing.	**The adult will:** • Model narrative writing. • Provide frequent opportunities for students to write. • Facilitate discussions about real and imagined experiences. • Provide opportunities to read and be read to, using books about real and imagined experiences. • Read and showcase published narrative texts. • Provide opportunities to engage in shared, interactive, and independent writing. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program).

N. NARRATIVE – FOCUS

Standard	Concepts and Competencies	Supportive Practices
1.4 2.N **Establish a situation and introduce a narrator and/or characters.**	**The learner will:** • Generate ideas for writing. • Understand that "who" a story will be about refers to the person, animal, or animated object that the story will be about. • Understand that "what" a story will be about refers to the sequenced events that happen to the references "who." • Respond when asked "who" or "what" a story is about, and follow through when drawing about or dictating the story.	**The adult will:** • Model how to determine the characters and/or narrator. • Model how to create a plot line (situation). • Model how to use graphic organizers to establish a situation and introduce characters or narrators. • Read and showcase published narrative texts. • Provide frequent opportunities for writing and dictating stories. • Provide opportunities to engage in shared, interactive, and independent writing. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program).

O. NARRATIVE – CONTENT

Standard	Concepts and Competencies	Supportive Practices
1.4 2.O **Include thoughts and feelings to describe experiences and events to show the response of characters to situations.**	**The learner will:** • Participate in discussions related to characters' responses to experiences and events. • Include thoughts and feelings related to characters' responses to experiences and events.	**The adult will:** • Talk about an event or experience including thoughts and feelings. • Facilitate discussions about familiar and unfamiliar events. • Model how characters respond to situations. • Provide opportunities to engage in shared, interactive, and independent writing. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program).

P. NARRATIVE – ORGANIZATION

Standard	Concepts and Competencies	Supportive Practices
1.4 2.P **Organize a short sequence of events, using temporal words to signal event order and provide a sense of closure.**	**The learner will:** • Understand stories can be told about a single event or several loosely linked events. • Understand that a single event is made up of a series of smaller events that are in a sequence (e.g., first, next, last, before). • Sequence two or more events using temporal words. • End with a closing sentence.	**The adult will:** Model using a graphic organizer to plan a beginning, middle, and end. Provide opportunities to practice sequencing (e.g., graphic organizers, illustrations). Engage with students using digital media to reinforce sequencing skills. Ask questions relating to sequencing (e.g., first, before, next, last). • Facilitate participation in writing simple stories, poems, rhymes, or song lyrics. • Provide opportunities to engage in shared, interactive, and independent writing. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program). • Read and showcase published narrative texts.

Q. NARRATIVE – STYLE

Standard	Concepts and Competencies	Supportive Practices
1.4 2.Q **Choose words and phrases for effect.**	**The learner will:** • Use vivid and precise language.	**The adult will:** • Model using a variety of words and phrases in writing. • Provide opportunities to engage in shared, interactive, and independent writing. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program). • Read and showcase published narrative texts.

R. NARRATIVE – CONVENTIONS OF LANGUAGE

Standard	Concepts and Competencies	Supportive Practices
1.4 2.R **Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.**	**The learner will:** • Capitalize proper nouns. • Use commas and apostrophes appropriately. • Spell words, drawing on common spelling patterns. • Consult reference material as needed.	**The adult will:** • Model using grade-appropriate conventions. • Model using grade-appropriate proofreading skills. • Provide opportunities to engage in shared, interactive, and independent writing. • Conference with students and provide feedback (e.g., using district writing rubrics, reading program).

T. PRODUCTION AND DISTRIBUTION OF WRITING – WRITING PROCESS

Standard	Concepts and Competencies	Supportive Practices
1.4 2.T **Focus on a topic and strengthen writing as needed by revising and editing.**	**The learner, with guidance and support, will:** • Understand that drawings and dictation convey meaning to an audience. • Understand writing may have to be changed to make meaning more clear. • Share work with others. • Participate in discussions about their work. • When prompted make changes to work based on feedback. • Respond to questions and suggestions from peers. • Add details to strengthen writing as needed.	**The adult will:** • Model asking and answering questions about a peer's writing (focused on details of the writing). • Provide a supportive environment where students feel confident enough to share their work. • Use prompts to encourage both positive and constructive feedback (e.g., "I liked when …" "I wonder …"). • Model constructive feedback. • Provide frequent opportunities for writing and dictating stories. • Provide opportunities to engage in shared, interactive, and independent writing. • Model pre-writing activities to facilitate writing (e.g., think-aloud, listing, graphic organizers). • Engage students in discussion on a focus for writing, generation of ideas, and organization to categorize ideas and plan for writing

U. TECHNOLOGY AND PUBLICATION

Standard	Concepts and Competencies	Supportive Practices
1.4 2.U **Use a variety of digital tools to produce and publish writing, including collaboration with peers.**	**The learner, with guidance and support, will:** • Use a variety of digital tools to produce and publish writing.	**The adult will:** Provide opportunities to use available technology. • Model use of available technology.

V. CONDUCTING RESEARCH

Standard	Concepts and Competencies	Supportive Practices
1.4 2.V **Participate in individual or shared research and writing projects.**	**The learner will:** • Ask adults or peers for explanations or information using why, how, where, and when (e.g., "Why do leaves turn color?" "Why does Jamal like pizza?"). • Use a variety of resources with teacher support (e.g., adults and peers, books, digital media, maps, recipes, experts) to find new information.	**The adult will:** Encourage students to research why, how, where, and when answers to questions. Provide materials (e.g., videos, books, magazines, technology), structure, and opportunities to create an individual or shared research project. Offer opportunities to share research. Model/guide procedures for how to research a project. Model/guide writing about research. • Showcase exemplary research samples.

W. CREDIBILITY, RELIABILITY, AND VALIDITY OF SOURCES

Standard	Concepts and Competencies	Supportive Practices
1.4 2.W **Recall information from experiences or gather information from provided sources to answer a question.**	**The learner will:** • Respond to prompts which require reference to prior experiences. • Relate prior experiences in learning to a current topic. • Recall information from experiences. • Use a variety of resources with teacher support (e.g., adults and peers, books, digital media, maps, recipes, experts) to find new information.	**The adult will:** Model connecting prior experiences in learning to answer a question. Model gathering information from sources to respond to a question.

X. RANGE OF WRITING

Standard	Concepts and Competencies	Supportive Practices
1.4 2.X **Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.**	**The learner will:** • Engage in writing opportunities including journaling. • Revisit previous work. • Respond to writing prompts. • Choose to write independently during play.	**The adult will:** • Provide frequent opportunities for writing. • Provide opportunities to engage in shared, interactive, and independent writing. • Provide a variety of materials and opportunities to write daily and over time (e.g., journals, "author's" chair, projects). • Provide opportunities and encourage students to revisit prior work. • Encourage persistence in drawing/dictation/writing.

1.5 Speaking and Listening

BIG IDEAS: Active listeners make meaning from what they hear by questioning, reflecting, responding, and evaluating. Effective speakers prepare and communicate messages to address the audience and purpose.
ESSENTIAL QUESTIONS: What do good listeners do? How do active listeners make meaning? How do speakers effectively communicate a message?

A. COMPREHENSION AND COLLABORATION – COLLABORATIVE DISCUSSION

Standard	Concepts and Competencies	Supportive Practices
1.5 2.A **Participate in collaborative conversations with peers and adults in small and larger groups.**	**The learner will:** • Communicate using detail related to topic being discussed. • Pose questions related to topic being discussed. • Allow wait time before responding. • Engage in turn-taking.	**The adult will:** Encourage students to ask questions to find out more information. Provide and monitor multiple opportunities for conversations throughout the day. • Explicitly restate comments made by students and encourage those responding to add further detail, or contribute further to the topic being discussed. • Encourage students to restate comments made by peers. • Model appropriate participation in discussions including polite interactions, one person speaking at a time, or asking questions. • Embed opportunities to "turn and talk" to share ideas on a topic. • Model appropriate conversation skills (e.g., tone, volume, turn-taking, active listening, eye contact).

B. COMPREHENSION AND COLLABORATION – CRITICAL LISTENING

Standard	Concepts and Competencies	Supportive Practices
1.5 2.B **Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.**	**The learner will:** • Respond to a question with specific key ideas or details. • Generate "who," "what," "when," and "where" questions.	**The adult will:** Verbalize thought process while listening (think-alouds, metacognition). • Demonstrate and instruct students in purposeful listening activities (active listening). • Provide multiple opportunities to listen to text read aloud or through other media (e.g., video, YouTube, listening centers).

C. COMPREHENSION AND COLLABORATION – EVALUATING INFORMATION

Standard	Concepts and Competencies	Supportive Practices
1.5 2.C **Ask and answer questions about what a speaker says to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.**	**The learner will:** • Ask for clarification (e.g., "What do you mean?" "I don't understand").	**The adult will:** Model asking for help or clarifying information. Model oral discussion techniques. • Provide opportunities for oral language use. • Promote active listening and attention to key ideas and details.

D. PRESENTATION OF KNOWLEDGE AND IDEAS – PURPOSE, AUDIENCE, AND TASK

Standard	Concepts and Competencies	Supportive Practices
1.5 2.D **Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.**	**The learner will:** • Use an appropriate voice level for the situation. • Share experiences and tell stories clearly with relevant detail. • Speak clearly enough to be understood.	**The adult will:** • Provide opportunities for oral language use. • Model appropriate oral presentation skills. • Encourage use of appropriate volume and pacing. • Speak to and engage students in group and individual conversations daily. • Re-phrase student's sentence structure or grammar by repeating the sentence properly.

E. PRESENTATION OF KNOWLEDGE AND IDEAS – CONTEXT

Standard	Concepts and Competencies	Supportive Practices
1.5 2.E **Produce complete sentences when appropriate to task and situation to provide requested detail or clarification.**	**The learner will:** • Recognize and express thoughts in an appropriate manner as they occur throughout the day. • Understand and produce simple and compound sentences. • Express knowledge and ideas in an appropriate manner using complete sentences.	**The adult will:** • Model adding use of detail for clarification. • Provide opportunities for oral language use. • Model speaking in complete sentences. • Reinforce complete sentence responses to questions. • Encourage students to express own knowledge and ideas using complete sentences. • Provide opportunities to engage in shared language activities. • Create an environment in which students have the opportunity to share knowledge and events through speaking and listening to one another.

F. INTEGRATION OF KNOWLEDGE AND IDEAS – MULTIMEDIA

Standard	Concepts and Competencies	Supportive Practices
1.5 2.F **Add drawings or other visual displays to presentations when appropriate to clarify ideas, thoughts, and feelings.**	**The learner will:** • Enhance oral presentations with a visual display to clarify ideas, thoughts, and feelings.	**The adult will:** • Provide opportunities for oral language use. • Provide materials and time to produce a visual display. • Provide guidance (e.g., rubric) for expected displays. • Model the use of visual displays to clarify ideas.

G. CONVENTIONS OF STANDARD ENGLISH

Standard	Concepts and Competencies	Supportive Practices
1.5 2.G **Demonstrate command of the conventions of standard English when speaking, based on Grade 2 level and content.**	**The learner will:** • Use a variety of sentence structures. • Match correct subject-verb agreement. • Use most parts of speech correctly. • Use collective and irregular plural nouns. • Use past, present, and future tense including irregular verbs. • Use personal, possessive, indefinite, and reflexive pronouns. • Use adjectives and adverbs.	**The adult will:** • Model the proper use of standard English when speaking. • Provide multiple opportunities for oral language practice and use.

Languages and Literacy Development Glossary

Alliteration—The repetition of initial consonant sounds.

Antonym—A word that is the opposite of another word.

Basic Features of Print—Letters, words, and sentences

Characterization—The method an author uses to reveal characters and their various personalities.

Choral Reading—Reading of a text where an adult or an experienced reader reads a line of text and student repeats the line.

Collaboration—The action of working with someone to produce or create something.

Collaborative Conversations—Also called reciprocal conversation; knowing and following the back and forth rules of conversation.

Compare—Place together characters, situations, or ideas to show common or differing features in literary selections.

Context Clues—Information from the reading that identifies a word or group of words.

Conventions of Language—Mechanics, usage, and sentence completeness.

Credibility—The quality of being believable or worthy of trust.

Decoding—Analyzing text to identify and understand individual reading.

Dialogic Reading—An effective strategy to enhance vocabulary, oral language skills, and comprehension.

Dictation—The act of saying words aloud to be written down.

Emergent Literacy—One stage of literacy development; reading and writing behaviors that precede and develop into convention and literacy.

Environmental Print—The print of everyday life; symbols, signs, numbers, colors, and logos found within the environment.

Expressive Language—Being able to convey messages using words.

Evaluate—Examine and judge carefully.

Explanatory—Something that makes things more clear; intended to make people understand something by describing it or giving the reasons for it.

Fine Motor—Demonstrate increased control of hand and eye coordination; using hands and fingers such as in writing, painting, drawing, modeling clay, or pinching clothespins.

Fluency—The clear, easy, written or spoken expression of ideas. Freedom from word-identification problems which might hinder comprehension in silent reading or the expression of ideas in oral reading.

Genre—A category used to classify literary works, usually by form, technique, or content (prose, poetry).

Guided Reading—Teachers work with students at their instructional level to guide them in using context, visual, and structural cues.

Homophone—One of two or more words pronounced alike, but different in spelling or meaning (hair/hare; road/rode).

Informative—Something that contains useful, helpful, or relevant information or details.

Literary/Story Elements—The essential techniques used in literature (characterization, setting, plot, theme, problem, solution).

Literary Devices—Tools used by the author to enliven and provide voice to the writing (dialogue, alliteration).

Main Idea—The most important or central thought of a paragraph or larger section of text, which tells the reader what the text is about.

Narrative—A story, actual or fictional, expressed orally or in writing.

Onset—A sound in word that comes before the vowel.

Phonemic Awareness—Ability to hear and identify parts of spoken language and auditory divide into phonemes.

Phoneme—A sound unit of speech.

Phonics—A way of teaching reading that stresses sound symbol relationships; refers to the relationship between the letters and letter sounds of language.

Phonological Awareness—A broad term that includes phonemic awareness. In addition to phonemes, phonological awareness refers to larger spoken units such as rhymes, words, syllables, and onsets and rimes.

Picture Walk—A pre-reading strategy that is an examination of the text looking at pictures to gain an understanding of the story and to illicit story related language in advance of reading the story.

Point of View—The way in which an author reveals characters, events, and ideas in telling a story; the vantage point from which the story is told.

Print Awareness—Ability to understand how print works.

Project-Based Learning—An instructional approach built upon authentic learning activities that engage student interest and motivation.

Reading Critically—Reading in which a questioning attitude, logical analysis, and interference are used to judge the worth of text; evaluating relevancy and adequacy of what is read; the judgment of validity or worth of what is read, based on sound criteria.

Reciprocal Conversations—Also called collaborative conversations; knowing and following the back and forth rules of conversation.

Receptive Language—Being able to receive and give meaning to message/words heard.

Research—A systematic inquiry into a subject or problem to discover, verify, or revise relevant facts or principles having to do with that subject or problem.

Rhyme—Correspondence of sound between words or the endings of words.

Rime—The part of a syllable that contains at least one vowel and all that follows.

Shared Reading—Teachers guide the entire class through stories with a high level of support; sharing and reading a story together (echo reading, choral reading, or fill the gap reading).

Shared Writing—Teacher and learner work together to compose a message or story.

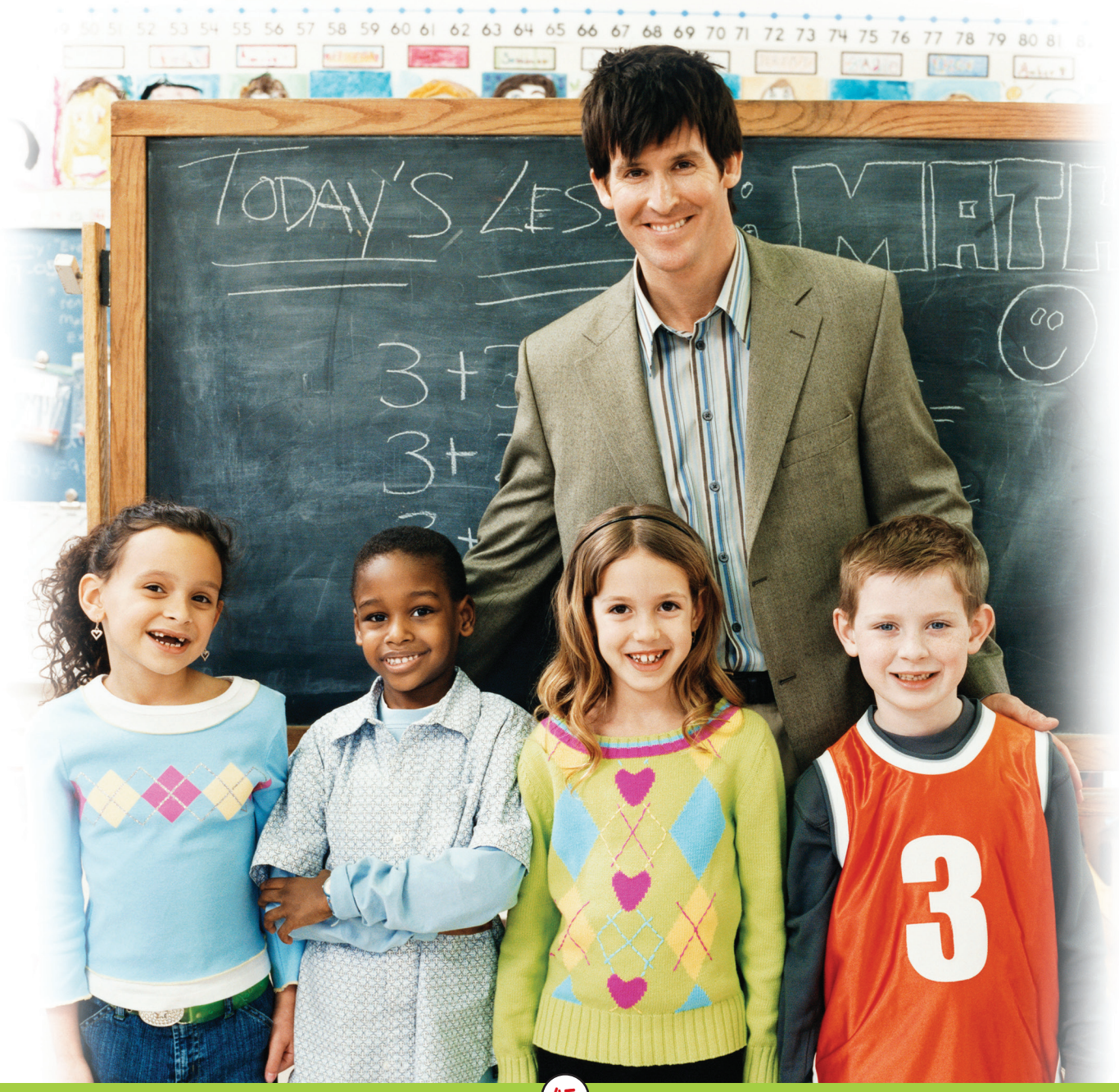
TIER I Words—Words that rarely require direct instruction and typically do not have multiple meanings.

TIER II Words—High-frequency words that occur across a variety of domains; occur often in mature language situations such as adult conversations and literature; TIER II words also contain multiple meanings (e.g., here/hear)

TIER III Words—Low-frequency words that occur in specific domains (including subjects in school, hobbies, occupations, geographic regions, technology, weather).

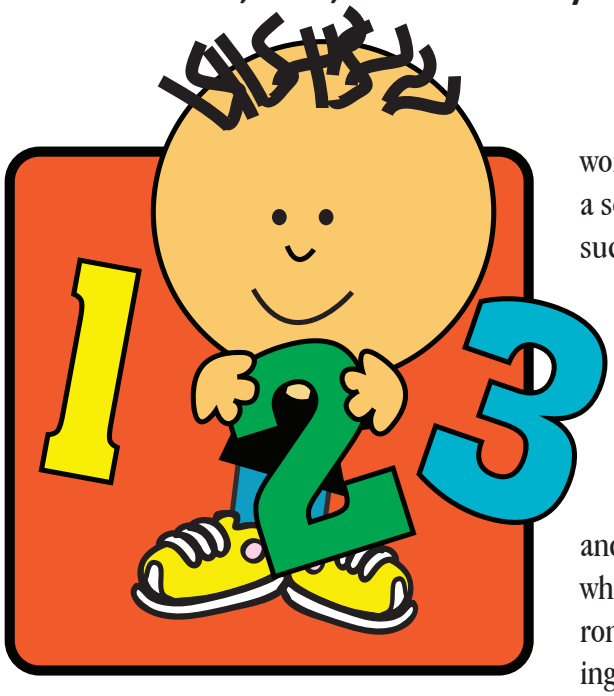
Tone—The attitude of the author toward the audience and characters (serious or humorous).

Voice—The fluency, rhythm, and liveliness in writing that make it unique to the writer.



Mathematical Thinking and Expression

Exploring, Processing, and Problem-Solving



Mathematical learning is a key element of Science, Technology, Engineering, and Math (STEM) education. To fully understand math, children must be able to connect mathematical concepts to real-world situations and across disciplines. Math skills are developed and based on children's experiences with their environment, their interactions with adults and other children, and their daily observations. Throughout the early years of life, children notice and discover mathematical dimensions of their world. They compare quantities, find patterns, problem-solve, communicate, and confront real problems such as balancing a tall block building or angling a ramp to roll a ball down. Mathematics helps children make sense of their world and helps them construct a solid foundation for future success. By asking intentional questions, adults can help encourage STEM concepts where children are identifying objects, making comparisons, making predictions, testing ideas, and sharing discoveries, all while investigating their environment. Mathematical thinking is foundational and important to academic success in all subjects. All children are capable of developing a strong knowledge of mathematics in their earliest years. Math and science subjects are connected to other subject matters and the real world. Adults should tap into children's natural curiosity and give them ample opportunities to be active participants in their own learning.

Standards for Mathematical Practice

Habits of Mind of a Productive Mathematical Thinker

- Make sense of problems and persevere in solving them.
- Attend to precision.

Reasoning and Explaining

- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.

Modeling and Using Tools

- Model with mathematics.
- Use appropriate tools strategically.

Seeing Structure and Generalizing

- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

2.1 Numbers and Operations

BIG IDEAS: Mathematical relationships among numbers can be represented, compared, and communicated. Numeral quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools. Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations. Patterns exhibit relationships that can be extended, described, and generalized.
ESSENTIAL QUESTIONS: How is mathematics used to quantify, compare, represent, and model numbers? How can mathematics support effective communication? How are relationships represented mathematically? How can expressions, equations, and inequalities be used to quantify, solve, model, and/or analyze mathematical situations? What does it mean to estimate or analyze numerical quantities? When is it appropriate to estimate versus calculate? What makes a tool and/or strategy appropriate for a given task? How can patterns be used to describe relationships in mathematical situations? How can recognizing repetition or regularity assist in solving problems more efficiently?

B.1 NUMBERS AND OPERATIONS IN BASE TEN

Standard	Concepts and Competencies	Supportive Practices
2.1 2.B.1 **Use place-value concepts to represent amounts of tens and ones and to compare three-digit numbers.**	**The learner will:** • Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones. • Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.	**The adult will:** • Provide opportunities to compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons. • Encourage students to share, discuss, and compare solution strategies after they solve problems. • Encourage students to develop the habit of checking their answer to a problem to determine if it makes sense for the situation and the given questions.

B.2 NUMBERS AND OPERATIONS IN BASE TEN

Standard	Concepts and Competencies	Supportive Practices
2.1 2.B.2 **Use place value concepts to read, write, and skip-count to 1,000.**	**The learner will:** • Count within 1,000; skip-count by 5s, 10s, and 100s. • Read and write numbers to 1,000 using base-ten numerals, number names, and expanded form.	**The adult will:** • Encourage students to share, discuss, and compare solution strategies after they solve problems. • Encourage students to develop the habit of checking their answer to a problem to determine if it makes sense for the situation and the given questions. • Provide opportunities to read and write numbers to 1,000. • Provide opportunities to count within 1,000 (skip-count by 5s, 10s, and 100s)..

B.3 NUMBERS AND OPERATIONS IN BASE TEN

Standard	Concepts and Competencies	Supportive Practices
2.1 2.B.3 **Use place-value understanding and properties of operations to add and subtract within 1,000.**	**The learner will:** • Use place-value and properties of operations to add and subtract. • Add up to four two-digit numbers using strategies based on place-value and properties of operations. • Add and subtract within 1,000 (understanding that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones, and sometimes it is necessary to compose or decompose tens or hundreds). • Explain why addition and subtraction strategies work, using place-value and the properties of operations. • Mentally add 10 or 100 to a given number from 100–900, and mentally subtract 10 or 100 from a given number from 100–900.	**The adult will:** • Encourage students to share, discuss, and compare solution strategies after they solve problems. • Encourage students to develop the habit of checking their answer to a problem to determine if it makes sense for the situation and the given questions. • Provide opportunities to add and subtract within 1,000.

2.2 Algebraic Concepts

BIG IDEAS: Mathematical relationships among numbers can be represented, compared, and communicated. Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations. Patterns exhibit relationships that can be extended, described, and generalized.
ESSENTIAL QUESTIONS: How is mathematics used to quantify, compare, represent, and model numbers? How can mathematics support effective communication? How are relationships represented mathematically? How can expressions, equations, and inequalities be used to quantify, solve, model, and/or analyze mathematical situations? How can patterns be used to describe relationships in mathematical situations? How can recognizing repetition or regularity assist in solving problems more efficiently?

A.1 OPERATIONS AND ALGEBRAIC THINKING

Standard	Concepts and Competencies	Supportive Practices
2.2 2.A.1 **Represent and solve problems involving addition and subtraction within 100.**	**The learner will:** • Use addition and subtraction within 100 to solve one- and two-step word problems by using drawings and equations with a symbol for the unknown number to represent the problem. • Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20. • Add and subtract within 20 using various strategies (e.g., counting on, making ten, decomposing a number leading to a ten, using the relationship between addition and subtraction, and creating equivalent but easier or known sums). • Apply properties of operations as strategies to add and subtract (e.g., commutative property of addition, associative property of addition). • Make sense of a word problem and understand what it is asking for. • Understand subtraction as an unknown-addend problem (e.g., subtract $10 - 8$ by finding the number that makes 10 when added to 8). • Look for patterns (e.g., making ten, fact families, doubles). • Practice mathematical communication skills.	**The adult will:** • Encourage students to check their work to see if their answer makes sense. • Implement various ways of writing equations (e.g., horizontal, vertical, equation on left or right of the equal sign). • Provide opportunities to solve problems where key words are contrary to such thinking (e.g., the use of the word "left" does not indicate subtraction as a solution method: Debbie took the eight stickers she no longer wanted and gave them to Anna. Now Debbie has 11 stickers left. How many stickers did Debbie have to begin with?). • Encourage students to look for patterns (e.g., they adopt mental math strategies based on patterns of making ten, fact families, or doubles). • Help students see that numbers can be added in many different ways (e.g., when adding $29 + 43$, you can add them by saying $20 + 40 = 60$ and $9 + 3 = 12$ so 60 and $12 = 72$). • Encourage students to discuss and explain the strategies used to solve problems using clear and precise language. • Encourage students to make conjectures about the solution and plan out a problem-solving approach. • Provide opportunities for students to construct arguments using concrete referents (e.g., objects, pictures, drawings, actions).

A.2 OPERATIONS AND ALGEBRAIC THINKING

Standard	Concepts and Competencies	Supportive Practices
2.2 2.A.2 **Use mental strategies to add and subtract within 20.**	**The learner will:** • Fluently add and subtract within 20 using mental strategies. • Realize that doing mathematics involves solving problems and discussing how the problems were solved. • Explain the meaning of a problem and look for ways to solve it. • Practice mathematical communication skills.	**The adult will:** • Provide a list of facts from two or more strategies and ask students to name a strategy that would work for that fact (Students should be expected to explain why they chose that strategy then show how to use it). • Use base-ten blocks to model the collecting of 10 ones (singles) to make a ten (a rod) or 10 tens to make a hundred (a flat) (It is important that students connect a group of 10 ones with the word ten and a group of 10 tens with the word hundred). • Encourage students to discuss and explain the strategies used to solve problems using clear and precise language.

A.3 OPERATIONS AND ALGEBRAIC THINKING

Standard	Concepts and Competencies	Supportive Practices
2.2 2.A.3 **Work with equal groups of objects to gain foundations for multiplication.**	**The learner will:** • Determine whether a group of objects (up to 20) has an odd or even number of members. • Write an equation to express an even number as a sum of two equal addends. • Use addition to find the total number of objects arranged in rectangular arrays with up to five rows and up to five columns; write an equation to express the total as a sum of equal addends. • Identify and describe the rule for a pattern. • Use a rule to extend a pattern. • Understand multiplication as repeated addition and arrays. • Use concrete objects and pictures to help solve problems. • Realize that doing mathematics involves solving problems and discussing the solutions. • Use concrete objects or pictures to help conceptualize and solve problems. • Decide to solve a problem by drawing a picture rather than writing an equation.	**The adult will:** • Show connections between equal groups and repeated addition to build the connection between repeated addition and multiplication. • Show that the rectangular array is a powerful tool for multiplication and provide opportunities to connect the number of units to the total in the rows and columns. • Provide concrete objects or pictures for students to use to help them conceptualize and solve problems. • Provide opportunities to construct arguments using concrete referents (e.g., objects, pictures, drawings, actions). • Encourage students to explain their own thinking by using clear and precise mathematical language.

2.3 Geometry

BIG IDEAS: Patterns exhibit relationships that can be extended, described, and generalized. Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.
ESSENTIAL QUESTIONS: How can patterns be used to describe relationships in mathematical situations? How can recognizing repetition or regularity assist in solving problems more efficiently? How are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems? How can the application of the attributes of geometric shapes support mathematical reasoning and problem solving? How can geometric properties and theorems be used to describe, model, and analyze situations?

A.1 GEOMETRY – IDENTIFICATION

Standard	Concepts and Competencies	Supportive Practices
2.3 2.A.1 **Analyze and draw two- and three-dimensional shapes having specified attributes.**	**The learner will:** • Recognize and draw shapes having specified attributes. • Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. • Describe, classify, and sort plane and solid geometric shapes according to the number and shape of faces and the number of sides, edges, and/or vertices. • Recognize and represent geometric shapes and solids in structures in the environment. • Manipulate, draw, construct, and represent (e.g., on a geoboard) two-dimensional shapes. • Name characteristics of two-dimensional shapes and three-dimensional figures. • Describe the similarities and differences between two two-dimensional shapes or two three-dimensional figures.	**The adult will:** • Encourage students to handle shapes and physically feel that the shape does not change regardless of the orientation. • Show students examples and non-examples and have them explain why the shapes are or are not equal. • Provide opportunities to manipulate, draw, construct, and represent two-dimensional shapes. • Provide opportunities to identify triangles, quadrilaterals, pentagons, hexagons, heptagons, and octagons by counting the number of sides or the number of vertices (Examples should include regular and irregular polygons.). • Provide opportunities to describe characteristics of two- and three-dimensional shapes/figures so that students develop the concepts and mathematical language related to geometric properties. • Provide opportunities to locate and describe examples of two- and three-dimensional shapes/figures in the environment. • Provide opportunities to describe the similarities and differences between two two-dimensional shapes or two three-dimensional figures.

A.2 GEOMETRY – APPLICATION

Standard	Concepts and Competencies	Supportive Practices
2.3 2.A.2 **Use the understanding of fractions to partition shapes into halves, quarters, and thirds.**	**The learner will:** • Partition circles, squares, and rectangles into two, three, or four equal shares. • Recognize that equal shares of identical wholes need not have the same shape. • Match the fraction to the corresponding model (e.g., concrete and/or pictorially). • Represent a given fraction using drawings or concrete materials.	**The adult will:** • Provide different models to allow students to compare unit fractions and reason about their sizes. • Present various shapes that can be divided the same way. • Provide oral directions for folding the shapes (e.g., fold in this manner two more times). • Provide opportunities to label each part using fractional notation. Then have students count the fractional parts in the triangle (e.g., one-third, two-thirds, etc.). • Show the connection from the given quantity to written symbols. • Encourage students to explain their own thinking by using clear and precise language. • Encourage students to practice their mathematical communication skills.

2.4 Measurement, Data, and Probability

BIG IDEAS: Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools. Measurement attributes can be quantified, and estimated using customary and non-customary units of measure. Data can be modeled and used to make inferences. Mathematical relations and functions can be molded through multiple representations and analyzed to raise and answer questions.
ESSENTIAL QUESTIONS: What does it mean to estimate or analyze numerical quantities? When is it appropriate to estimate versus calculate? What makes a tool and/or strategy appropriate for a given task? Why does "what" we measure influence "how" we measure? In what ways are the mathematical attributes of objects or processes measured, calculated, and/or interpreted? How precise do measurements and calculations need to be? How does the type of data influence the choice of display? How can probability and data analysis be used to make predictions? How can data be organized and represented to provide insight into the relationship between qualities?

A.1 MEASUREMENT AND DATA – MEASUREMENT

Standard	Concepts and Competencies	Supportive Practices
2.4 2.A.1 **Measure and estimate lengths in standard units using appropriate tools.**	**The learner will:** • Measure the length of an object by selecting and using appropriate tools (e.g., rulers, yardsticks, meter sticks, measuring tapes). • Measure the same length with different-sized units and note the measurement made with the smaller unit is more than the measurement made with the larger unit and vice versa. • Estimate lengths using units of inches, feet, centimeters, and meters. • Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. • Practice mathematical communication skills. • Select the appropriate tool.	**The adult will:** • Provide opportunities for students to use informal or standard length units to make their own rulers by marking each whole unit with a number in the middle (Students will see that the ruler is a representation of a row of units and focus on the spaces). • Provide situations where the ruler does not start at zero. • Provide opportunities for students to explore containers of different sizes and shapes when determining capacity. • Encourage and support students in explaining how they applied their skills during mathematical tasks. • Provide experiences measuring lengths with appropriate tools. • Provide opportunities for students to measure the same length with different-sized units, and then discuss what they noticed. • Use language that reflects the approximate nature of measurement (e.g., length of the room is about 26 feet). • Encourage students to estimate lengths before they measure (Estimation helps them focus on the attribute to be measured, the length units, and the process). • Provide opportunities to practice mathematical communication skills. • Encourage students to explain their own thinking by using clear and precise language.

A.2 MEASUREMENT AND DATA

Standard	Concepts and Competencies	Supportive Practices
2.4 2.A.2 **Tell and write time to the nearest five minutes using both analog and digital clocks.**	**The learner will:** • Tell and write time from analog and digital clocks to the nearest five minutes. • Develop mathematical communication skills.	**The adult will:** • Provide opportunities to experience and measure times to the nearest five minutes and the nearest hour. • Model the process of comparing, measuring, estimating, and telling time. • Model determining elapsed time.

A.3 MEASUREMENT AND DATA

Standard	Concepts and Competencies	Supportive Practices
2.4 2.A.3 **Solve problems and make change using coins and paper currency with appropriate symbols.**	**The learner will:** • Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. • Use the context of money to find sums and differences less than or equal to 100 (e.g., using the numbers 0 to 100). • Add and subtract to solve one- and two-step word problems involving money situations (e.g., adding to, taking from, putting together, taking apart, comparing). • Use drawings and equations with a symbol for the unknown number to represent the problem. • Learn the relationships between the values of a penny, nickel, dime, quarter, and dollar bill. • Practice mathematical communication skills. • Decide to solve a problem by drawing a picture rather than writing an equation.	**The adult will:** • Provide play and/or real money (e.g., nickels, dimes, dollar bills) to skip count by 5s, 10s, and 100s. • Reinforce place-value concepts with the values of dollar bills, dimes, and pennies. • Encourage students to discuss and explain strategies used to solve problems using clear and precise language. • Encourage students to check their thinking by asking questions (e.g., "Does this make sense?"). • Show the connection from the quantity to written symbols. • Encourage students to practice mathematical communication skills. • Encourage students to explain their own thinking by using clear and precise language.

A.4 MEASUREMENT AND DATA – DATA

Standard	Concepts and Competencies	Supportive Practices
2.4 2.A.4 **Represent and interpret data using line plots, picture graphs, and bar graphs.**	**The learner will:** • Make a line plot to show measurement data of the lengths of several objects to the nearest whole-number unit. • Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. • Solve simple put-together, take-apart, and compare problems using information presented in a graph. • Describe features of data such as range, mode, and median. • Practice mathematical communication skills. • Decide when certain graphs might be better suited than others.	**The adult will:** • Provide easy-to-read data sets. • Assist students (as needed) in reading and describing the data (e.g., deducing information, drawing conclusions, applying data to future events/behaviors). • Pose open-ended questions to engage in reading data represented on graphs. • Provide opportunities for learners to see graphs used in the real world. • Encourage and support students in explaining how they applied their skills during mathematical work. • Encourage students to explain their own thinking by using clear and precise language. • Provide opportunities for students to create and interpret graphs throughout the other curricular areas. • Model and verbalize the process of graphing and analyzing data. • Encourage students to make conjectures about the solution (which graphs to use) and plan out a problem-solving approach.

A.6 MEASUREMENT AND DATA

Standard	Concepts and Competencies	Supportive Practices
2.4 2.A.6 **Extend the concepts of addition and subtraction to problems involving length.**	**The learner will:** • Measure the length of an object by selecting and using appropriate tools (e.g., rulers, yardsticks, meter sticks, measuring tapes). • Estimate lengths using units of inches, feet, centimeters, and meters. • Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. • Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. • Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, and 2, and represent whole-number sums and differences within 100 on a number line diagram.	**The adult will:** • Pose open-ended questions to engage in problem-solving. • Provide opportunities for learners to estimate lengths. • Encourage and support students in explaining how they applied their skills during mathematical work. • Encourage students to explain their own thinking by using clear and precise language. • Provide opportunities for students to explore graphs (e.g., picture, bar). • Model and verbalize the process of graphing and analyzing data.

Mathematical Thinking and Expression Glossary

Algebraic Expression—A group of numbers, symbols, and variables that express a single series of operations.

Ascending Order—A listing in which numbers or terms are organized in increasing value.

Attribute—A quality or feature regarded as a characteristic or inherent part of someone or something.

Bar Graph—A graph in which horizontal or vertical bars represent data.

Cardinality—The number of elements in a set or other grouping.

Concrete Objects—Physical objects used to represent mathematical situations.

Counting On—Given two sets of objects in which to find the sum; learner counts one set and then counts on from the first set to the second set (3 apples in one set, 1 apple in other set – learner says 1 – 2 – 3 and then 4; there are 4 in all).

Data—Information gathered by observation, questioning, or measurement, usually expressed with numbers.

Descending Order—A listing in which numbers or terms are organized in decreasing value.

Graph—A pictorial device that shows a relationship between variables or sets of data.

Manipulatives—A wide variety of physical materials, objects, and supplies that students use to foster mathematical learning.

Non-Standard Measurement—A measure that is not determined by the use of standard units (paper clips, blocks).

Numerical Operations—Place value, number sense, counting, correspondence, comparison, ordering numbers, addition, subtraction (joining/separating sets).

Number Sense—Understanding of numbers and their quantities.

Ordinal Number—A whole number that names the position of an object in a sequence.

Pictograph—A graph that uses pictures or symbols to represent data.

Place Value—The value of the position of a digit in a numeral.

Probability—The measure of the likelihood of an event occurring.

Reflection—A transformation creating a mirror image of a figure on the opposite side of a line.

Seriation—Arranging objects in order by size or position in space (arrange in a series of pattern).

Spatial Sense—Building and manipulating mental representations of two- and three-dimensional objects.

Standard Measurement—A measure determined by the use of standard units (e.g., inches, feet, pounds, cups, pints, gallons, centimeters, meters, kilos, milliliters, liters)

Subitize—To perceive the number of (a group of items) at a glance and without counting.

Symbol—A sign used to represent something.

Symmetry—An attribute of a shape or relation; an exact reflection of a form on opposite sides of a dividing line or place.

Three-dimensional—Involving or relating to three dimensions or aspects; giving the illusion of depth.

Two-dimensional—Having only two dimensions, especially length and width.

Whole Numbers—The set of numbers consisting of the counting numbers and zero.

Scientific Thinking and Technology

Exploring, Scientific Inquiry, and Discovery

3.1 – Life Science

3.2 – Physical Science

3.3 – Earth and Space Science

3.4 – Environmental Literacy and Sustainability

3.5 – Technology and Engineering

Children are born with natural curiosity and the innate science and math skills to interpret and respond to the world. Children learn about Science, Technology, Engineering, and Math (STEM) concepts through play. They explore, experiment, invent, design and test solutions, and form ideas about how the world works. Technology, engineering, and math are the application of science to the design, creation, and construction of things. Children, who are given opportunities to conduct experiments, gather data and make conclusions, are developing skills that support discovery about the natural world and scientific inquiry. Adults support science in play by providing an engaging environment and facilitating appropriately. Scientific play is enhanced with natural objects. High quality early learning environments provide children with the structure in which to build upon their natural desire to explore, to build, and to question. Adults must acknowledge and support children in extending their curiosity through the scientific process of inquiry, observing, asking questions, forming hypothesis, investigating, gathering data, drawing conclusions, and building ideas that lead to new questions. Facilitating Scientific Inquiry: Adults facilitate scientific inquiry when class- rooms or learning environments are structured to promote curiosity. Scientific inquiry is the active search for knowledge and occurs most successfully when adults intentionally create activities and experiences that allow children to use previously learned knowledge to understand new information. One role of the adult during this active exploration is to scaffold children's thinking by asking open- ended questions. Open-ended questions encourage problem-solving and support children's learning of the world around them. Open-ended questions are a more effective strategy to encourage learning and critical thinking when compared to closed questions, which typically result in short answers that don't provide insight into children's thinking. When learning environments are structured to promote curiosity, children use strategies that are based on scientific inquiry.

The Scientific Method

The scientific method is a way for scientists to study and learn things. It involves making an observation and identifying a problem, gathering data, making a hypothesis, and testing the hypothesis. Sometimes the problem or the hypothesis changes as you do experiments. The scientific method can be used by children on topics and questions that interest them.

Steps of the Scientific Method

- Make an observation and identify a problem
- Gather data
- Make a hypothesis
- Test the hypothesis
- Make changes

The Engineering Design Process

According to NAEYC, adding engineering practices to the preschool classroom formally introduces young children to the design process. Design is the "study of aesthetics and the utility of items in our daily lives" (Bequette & Bequette 2012, 40). While professional designers typically have an elaborate multistep process for creating and improving their plans to solve problems, we needed a streamlined approach for novice designers.

Engineering is Elementary has developed a five-step engineering design process for elementary students (Museum of Science, Boston 2018), which we've paraphrased here:

- Ask—to identify the problem and others' solutions
- Imagine—to brainstorm and select a solution to test
- Plan—to specify the design and materials
- Create—to make and test a model
- Improve—to ask how the design can be even better and start the cycle again

NAEYC developed the following slightly modified four-step design process for preschoolers:

- Finding a problem: Identify a problem or need. Ask, why is it important? How have others approached the problem?
- Imagining and planning: Brainstorm solutions. Sketch possible plans. Choose one to build. List and gather needed materials.
- Creating: Refer to the plan and build a model or prototype. Share the model for feedback or test the prototype.
- Improving: Analyze the model or prototype with others. How could it be improved? Redesign based on feedback.

Please note, the formatting of the Science domain for Kindergarten, Grade 1, and Grade 2 reflects the newly adopted Pennsylvania Integrated Standards for Science, Technology & Engineering, and Environmental Literacy and Sustainability (STEEL), and Pennsylvania Technology and Engineering Standards.

The PDFs from these approved standards are included to fully align with grades K, 1 and 2.

3.1 Life Science

BIG IDEAS: Living things have unique characteristics which differ from non-living things. The characteristics of living things can be observed and studied.
ESSENTIAL QUESTIONS: In what ways do living and non-living things differ? What are similarities, differences, and patterns of living things?

3.1.2.A Life Science: Ecosystems: Interactions, Energy, and Dynamics

Students who demonstrate understanding can *plan and conduct an investigation to determine if plants need sunlight and water to grow.*

Clarifying Statement: N/A

Assessment Boundary: Assessment is limited to testing one variable at a time.

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Planning and Carrying Out Investigations Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. • Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question.	**LS2.A: Interdependent Relationships in Ecosystems** • Plants depend on water and light to grow.	**Cause and Effect** • Events have causes that generate observable patterns.

Pennsylvania Context: Examples of Pennsylvania context include Pennsylvania native plants and agricultural products.

PA Career Ready Skills: Distinguish among a set of short-term, mid-range, and long-term goals.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.06.01.01.a: Research and explain the foundational cycles in AFNR (e.g., water cycle, nutrient cycle, carbon cycle, etc.).
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 1.B. Designing investigations: Learners design simple environmental investigations.
PA Core Standards: ELA	CC.1.4.2.V: Participate in individual or shared research and writing projects. CC.1.5.2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. CC.2.4.2.A.1: Measure and estimate lengths in standard units using appropriate tools. CC.2.4.2.A.4: Represent and interpret data using line plots, picture graphs, and bar graphs.
PA Standards: Social Studies	5.1.2.C: Define fairness in working with others. 7.2.2.A: Identify the physical characteristics of places.
Educational Technology (ISTE)	1.4. Innovative Designer: Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.
Technology and Engineering (ITEEA)	STEL-2E: Collaborate effectively as a member of a team.

3.1.2.B Life Science: Ecosystems: Interactions, Energy, and Dynamics

Students who demonstrate understanding can *develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.*

Clarifying Statement: N/A

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Developing and Using Models Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions. • Develop a simple model based on evidence to represent a proposed object or tool.	**LS2.A: Interdependent Relationships in Ecosystems** • Plants depend on animals for pollination or to move their seeds around. **ETS1.B: Developing Possible Solutions** • Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.	**Structure and Function** • The shape and stability of structures of natural and designed objects are related to their function(s).

Pennsylvania Context: Examples of Pennsylvania context include plants commonly found in Pennsylvania.

PA Career Ready Skills: Identify multiple ways to solve conflicts and practice solving problems.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.01.02.02.b: Analyze how technology is used in AFNR systems to maximize productivity.
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 1.F. Working with models and simulations: Learners use models to represent environmental relationships, patterns, and processes.
PA Core Standards: ELA	CC.1.4.2.V: Participate in individual or shared research and writing projects. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.2.A: Participate in collaborative conversations with peers and adults in small and larger groups. CC.1.5.2.E: Add drawings or other visual displays to presentations when appropriate to clarify ideas, thoughts, and feelings.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. CC.2.4.2.A.4: Represent and interpret data using line plots, picture graphs, and bar graphs.
PA Standards: Social Studies	6.5.2.E: Describe the qualities that may be necessary to complete a task.
Educational Technology (ISTE)	1.6. Creative Communicator: Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.
Technology and Engineering (ITEEA)	STEL-2A: Illustrate how systems have parts or components that work together to accomplish a goal.

3.1.2.C Life Science: Biological Evolution: Unity and Diversity

Students who demonstrate understanding can *make observations of plants and animals to compare the diversity of life in different habitats.*

Clarifying Statement: Emphasis is on the diversity of living things in each of a variety of different habitats.

Assessment Boundary: Assessment does not include specific animal and plant names in specific habitats.

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Planning and Carrying Out Investigations Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. • Make observations (firsthand or from media) to collect data which can be used to make comparisons. ***Connections to Nature of Science*** **Scientific Knowledge Is Based on Empirical Evidence** • Scientists look for patterns and order when making observations about the world.	**LS4.D: Biodiversity and Humans** • There are many different kinds of living things in any area, and they exist in different places on land and in water.	N/A

Pennsylvania Context: Examples of Pennsylvania context could include the diverse habitats across Pennsylvania from wetlands and forests to urban habitats such as cemeteries, parks, and subterranean locations.

PA Career Ready Skills: Demonstrate respect for the uniqueness of others.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.02.02.01.a: Identify and summarize the components within AFNR systems (e.g., Animal Systems: health, nutrition, genetics, etc.; Natural Resources Systems: soil, water, etc.).
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 1.C. Collecting information: Learners locate and collect information about the environment and environmental topics.
PA Core Standards: ELA	CC.1.4.2.V: Participate in individual or shared research and writing projects. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. CC.2.4.2.A.4: Represent and interpret data using line plots, picture graphs, and bar graphs.
PA Standards: Social Studies	7.3.2.A: Identify the effect of local geography on the residents of the region. (e.g., food, clothing, industry, trade, types of shelter, etc.)
Educational Technology (ISTE)	1.3. Knowledge Constructor: Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.
Technology and Engineering (ITEEA)	STEL-1A: Compare the natural world and human-made world.

3.2 Physical Sciences

BIG IDEA: Physical properties help us to understand the world.
ESSENTIAL QUESTIONS: What are physical properties of objects? How are physical properties of objects discovered? What effect does energy have on the physical properties of objects?

3.2.2.A Physical Science: Matter and Its Interactions

Students who demonstrate understanding can *plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.*

Clarifying Statement: Observations could include color, texture, hardness, and flexibility. Patterns could include the similar properties that different materials share.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Planning and Carrying Out Investigations Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. • Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question.	**PS1.A: Structure and Properties of Matter** • Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties.	**Patterns** • Patterns in the natural and human designed world can be observed.

Pennsylvania Context: N/A

PA Career Ready Skills: Identify multiple ways to solve conflicts and practice solving problems.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.06.01.01.a: Research and explain the foundational cycles in AFNR (e.g., water cycle, nutrient cycle, carbon cycle, etc.).
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 1.B. Designing investigations: Learners design simple environmental investigations. K-4 Strand 2.1.A. Earth's physical systems: Learners describe characteristics of Earth's physical systems, including air, water, and land. They explain how these systems interact with one another and identify changes in the physical environment over time. They provide examples of how physical systems affect living organisms, including humans.
PA Core Standards: ELA	CC.1.4.2.V: Participate in individual or shared research and writing projects. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.6: Attend to precision. CC.2.4.2.A.4: Represent and interpret data using line plots, picture graphs, and bar graphs. CC.2.3.2.A.1: Analyze and draw two and three-dimensional shapes having specified attributes.
PA Standards: Social Studies	5.1.2.C: Define fairness in working with others.
Educational Technology (ISTE)	1.4. Innovative Designer: Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.
Technology and Engineering (ITEEA)	STEL-2C: Explain that materials are selected for use because they possess desirable properties and characteristics.

3.2.2.B Physical Science: Matter and its Interactions

Students who demonstrate understanding can *analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.*

Clarifying Statement: Examples of properties could include, strength, flexibility, hardness, texture, and absorbency.

Assessment Boundary: Assessment of quantitative measurements is limited to length.

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Analyzing and Interpreting Data Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. • Analyze data from tests of an object or tool to determine if it works as intended.	**PS1.A: Structure and Properties of Matter** • Different properties are suited to different purposes.	**Cause and Effect** • Simple tests can be designed to gather evidence to support or refute student ideas about causes. ***Connections to Engineering, Technology, and Applications of Science*** **Influence of Engineering, Technology, and Science, on Society and the Natural World** • Every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world.

Pennsylvania Context: N/A

PA Career Ready Skills: Identify multiple ways to solve conflicts and practice solving problems.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	C3.06.04.02.c: Evaluate and select appropriate tools and equipment to complete AFNR tasks.
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 2.1.A. Earth's physical systems: Learners describe characteristics of Earth's physical systems, including air, water, and land. They explain how these systems interact with one another and identify changes in the physical environment over time. They provide examples of how physical systems affect living organisms, including humans.
PA Core Standards: ELA	CC.1.4.2.V: Participate in individual or shared research and writing projects. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically. CC.2.4.2.A.4: Represent and interpret data using line plots, picture graphs, and bar graphs.
PA Standards: Social Studies	6.1.2.C: Explain how choice has consequences.
Educational Technology (ISTE)	1.5. Computational Thinker: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.
Technology and Engineering (ITEEA)	STEL-2C: Explain that materials are selected for use because they possess desirable properties and characteristics.

3.2.2.C Physical Science: Matter and Its Interactions

Students who demonstrate understanding can *make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.*

Clarifying Statement: Examples of pieces could include blocks, building bricks, or other assorted small objects.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.	**PS1.A: Structure and Properties of Matter** • Different properties are suited to different purposes. • A great variety of objects can be built up from a small set of pieces.	**Energy and Matter** • Objects may break into smaller pieces and be put together into larger pieces, or change shapes.

Pennsylvania Context: N/A

PA Career Ready Skills: Identify one's own strengths, needs, and preferences.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.06.01.01.a: Research and explain the foundational cycles in AFNR (e.g., water cycle, nutrient cycle, carbon cycle, etc.).
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 1.C. Collecting information: Learners locate and collect information about the environment and environmental topics. K-4 Strand 1.G. Drawing conclusions and developing explanations: Learners develop explanations that address their questions about the environment.
PA Core Standards: ELA	CC.1.4.2.V: Participate in individual or shared research and writing projects. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.7: Look for and make use of structure. CC.2.4.2.A.4: Represent and interpret data using line plots, picture graphs, and bar graphs.
PA Standards: Social Studies	5.2.2.B: Identify a problem and a probable solution.
Educational Technology (ISTE)	1.3. Knowledge Constructor: Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.
Technology and Engineering (ITEEA)	STEL-2A: Illustrate how systems have parts or components that work together to accomplish a goal.

3.3 Earth and Space Science

BIG IDEA: The earth, which is part of a larger solar system, consists of structures, processes, and cycles which affect its inhabitants.
ESSENTIAL QUESTIONS: What structures, processes, and cycles make up the earth? How do the various structures, processes, and cycles affect the earth's inhabitants? How do we know the earth is part of a larger solar system?

3.3.2.A Earth and Space Sciences: Earth's Place in the Universe

Students who demonstrate understanding can *use information from several sources to provide evidence that Earth events can occur quickly or slowly.*

Clarifying Statement: Examples of events and timescales could include volcanic explosions and earthquakes, which happen quickly and erosion of rocks, which occurs slowly.

Assessment Boundary: Assessment does not include quantitative measurements of timescales.

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Make observations from several sources to construct an evidence-based account for natural phenomena.	**ESS1.C: The History of Planet Earth** • Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe.	**Stability and Change** • Things may change slowly or rapidly.

Pennsylvania Context: Examples of Pennsylvania context include local examples of weathering and erosion.

PA Career Ready Skills: Distinguish among and set short-term, mid-range, and long-term goals.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.06.01.01.a: Research and explain the foundational cycles in AFNR (e.g., water cycle, nutrient cycle, carbon cycle, etc.).
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 1.E. Organizing and analyzing information: Learners describe data and organize information to search for relationships and patterns concerning the environment and environmental topics.
PA Core Standards: ELA	CC.1.2.2.B: Ask and answer questions such as who, what, where, when, why, and how to demonstrate understanding of key details in a text. CC.1.2.2.C: Describe the connection between a series of events, concepts, or steps in a procedure within a text.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically. CC.2.1.2.B.1: Use place value concepts to represent amounts of tens and ones and to compare three digit numbers.
PA Standards: Social Studies	8.1.2.C: Apply sources of historical information.
Educational Technology (ISTE)	1.3. Knowledge Constructor: Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.
Technology and Engineering (ITEEA)	STEL-3A: Apply concepts and skills from technology and engineering activities that reinforce concepts and skills across multiple content areas.

3.3.2.B Earth and Space Sciences: Earth's Systems

Students who demonstrate understanding can *compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.*

Clarifying Statement: Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Compare multiple solutions to a problem.	**ESS2.A: Earth Materials and Systems** • Wind and water can change the shape of the land.	**Stability and Change** • Things may change slowly or rapidly. ***Connections to Engineering, Technology, and Applications of Science*** **Influence of Engineering, Technology, and Science on Society and the Natural World** • Developing and using technology has impacts on the natural world. ***Connections to Nature of Science*** **Science Addresses Questions About the Natural and Material World** • Scientists study the natural and material world.

Pennsylvania Context: N/A

PA Career Ready Skills: Identify consequences of a decision to oneself and others prior to action.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.01.02.02.c: Evaluate the importance of technology use and how it impacts AFNR systems.
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 2.3.A. Human-environment interactions: Learners identify ways that people depend on, change, and are affected by the environment.
PA Core Standards: ELA	CC.1.2.2.C: Describe the connection between a series of events, concepts, or steps in a procedure within a text. CC.1.5.2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically. CC.2.3.2.A.1: Analyze and draw two and three-dimensional shapes having specified attributes.
PA Standards: Social Studies	5.2.2.B: Identify a problem and a probable solution.
Educational Technology (ISTE)	1.4. Innovative Designer: Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.
Technology and Engineering (ITEEA)	STEL-7E: Illustrate that there are different solutions to a design and that none are perfect.

3.3.2.C Earth and Space Sciences: Earth's Systems

Students who demonstrate understanding can *develop a model to represent the shapes and kinds of land and bodies of water in an area.*

Clarifying Statement: N/A

Assessment Boundary: Assessment does not include quantitative scaling in models.

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Developing and Using Models Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions. • Develop a model to represent patterns in the natural world.	**ESS2.B: Plate Tectonics and Large-Scale System Interactions** • Maps show where things are located. One can map the shapes and kinds of land and water in any area.	**Patterns** • Patterns in the natural world can be observed.

Pennsylvania Context: Examples of Pennsylvania context include Pennsylvania's dams and levees.

PA Career Ready Skills: Identify one's own strengths, needs, and preferences.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.02.01.01.c: Evaluate geographic data and select necessary data sets to solve problems within AFNR systems.
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 1.F. Working with models and simulations: Learners use models to represent environmental relationships, patterns, and processes.
PA Core Standards: ELA	CC.1.2.2.C: Describe the connection between a series of events, concepts, or steps in a procedure within a text.
PA Core Standards and Practices: Math	MP.5: Use appropriate tools strategically. CC.2.3.2.A.1: Analyze and draw two- and three-dimensional shapes having specified attributes. CC.2.4.2.A.6: Extend the concepts of addition and subtraction to problems involving length.
PA Standards: Social Studies	7.2.2.A: Identify the physical characteristics of places.
Educational Technology (ISTE)	1.6. Creative Communicator: Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.
Technology and Engineering (ITEEA)	STEL-7G: Apply skills necessary for making in design.

3.3.2.D Earth and Space Sciences: Earth's Systems

Students who demonstrate understanding can *obtain information to identify where water is found on Earth and that it can be solid or liquid.*

Clarifying Statement: N/A

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Obtaining, Evaluating, and Communicating Information Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information. • Obtain information using various texts, text features (e.g., headings, tables of contents, glossaries, electronic menus, icons), and other media that will be useful in answering a scientific question.	**ESS2.C: The Roles of Water in Earth's Surface Processes** • Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form.	**Patterns** • Patterns in the natural world can be observed.

Pennsylvania Context: N/A

PA Career Ready Skills: Select and utilize expressive communication strategies (e.g., tone, body language, facial expressions) with an understanding of its effect on others.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.06.01.01.a: Research and explain the foundational cycles in AFNR (e.g., water cycle, nutrient cycle, carbon cycle, etc.).
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 2.1.A. Earth's physical systems: Learners describe characteristics of Earth's physical systems, including air, water, and land. They explain how these systems interact with one another and identify changes in the physical environment over time. They provide examples of how physical systems affect living organisms, including humans.
PA Core Standards: ELA	CC.1.2.2.C: Describe the connection between a series of events, concepts, or steps in a procedure within a text. CC.1.5.2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. CC.2.1.2.B.2: Use place value concepts to read, write and skip count to 1000.
PA Standards: Social Studies	7.2.2.A: Identify the physical characteristics of places.
Educational Technology (ISTE)	1.3. Knowledge Constructor: Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.
Technology and Engineering (ITEEA)	STEL-3A: Apply concepts and skills from technology and engineering activities that reinforce concepts and skills across multiple content areas.

3.4 Environmental Literacy and Sustainability

BIG IDEAS: People live in an environment. People share the environment with other living things. People are impacted and have impact on the environment.
ESSENTIAL QUESTIONS: How can I describe my immediate environment? In what ways can I use the environment? How does what I do (positive or negative) affect my environment?

3.4.K-2.A Environmental Literacy and Sustainability: Agriculture and Environmental Systems and Resources

Students who demonstrate understanding can *categorize ways people harvest, re-distribute, and use natural resources.*

Clarifying Statement: Examples could include that trees provide food, fiber, and building materials. Trees are logged, transported, and processed into different products, such as fiber, furniture, and buildings. Fruits and nuts from trees are picked, transported, and processed.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Obtaining, Evaluating, and Communicating Information Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information. • Communicate information with others in oral and/or written forms using models, drawings, writing, or numbers that provide detail about scientific ideas, practices, and/or design ideas. **Analyzing and Interpreting Data** Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. • Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.	**ESS3.A: Natural Resources** • Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do.	**Cause and Effect** • Events have causes that generate observable patterns. **Systems and System Models** • Systems in the natural and designed world have parts that work together.

Pennsylvania Context: Examples of Pennsylvania context include Pennsylvania farms (agriculture, urban agriculture, and aquaculture), businesses (manufacturing, recreation), and industries (electricity and power, mining, biotechnology, forest products, transportation).

PA Career Ready Skills: Identify consequences of a decision to oneself and others prior to action.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.04.01.01.a: Define stewardship of natural resources and distinguish how it connects to AFNR systems.
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 2.3.B. Resource distribution and consumption: Learners describe ways people harvest, re-distribute, and use natural resources.

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: ELA	CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K.B: Ask and answer questions about key details in a text read aloud or information presented orally or through other media. CC.1.5.1.B: Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood. CC.1.5.2.B: Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. CC.2.4.1.A.4: Represent and interpret data using tables/charts. CC.2.4.2.A.4: Represent and interpret data using line plots, picture graphs, and bar graphs.
PA Standards: Social Studies	5.2.2.D: Explain responsible community behavior. 6.2.2.G: Identify examples of an economic system.
Educational Technology (ISTE)	1.1. Empowered Learner: Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.
Technology and Engineering (ITEEA)	STEL-4D: Select ways to reduce, reuse, and recycle resources in daily life. Children should give examples of the ways they handle waste at school or at home.

3.4.K-2.B Environmental Literacy and Sustainability: Agriculture and Environmental Systems and Resources

Students who demonstrate understanding can *examine how people from different cultures and communities, including one's own, interact and express their beliefs about nature.*

Clarifying Statement: Emphasis is on how students' interactions and beliefs about nature compare to someone living in a different community. Emphasis is not on judging anyone's interactions or beliefs about nature.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Obtaining, Evaluating, and Communicating Information Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information. • Read grade-appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world.	**ESS3.A: Natural Resources** • Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. **ESS3.C: Human Impacts on Earth Systems** • Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things.	**Patterns** • Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. **Cause and Effect** • Events have causes that generate observable patterns.

Pennsylvania Context: N/A

PA Career Ready Skills: Demonstrate respect for the uniqueness of others.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.01.01.01.b: Analyze and summarize AFNR issues and their impact on local, state, national and global levels.
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 2.2.B. Culture: Learners identify ways that people express different cultural backgrounds and how these can influence environmental perceptions and activities.
PA Core Standards: ELA	CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K.B: Ask and answer questions about key details in a text read aloud or information presented orally or through other media. CC.1.5.1.B: Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood. CC.1.5.2.B: Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.5: Use appropriate tools strategically. CC.2.4.1.A.4: Represent and interpret data using tables/charts.
PA Standards: Social Studies	6.1.K.A: Identify how scarcity influences choice. 8.2.1.C: Identify holiday and cultural celebrations in a community and why they are celebrated. 8.4.1.A: Explain why cultures celebrate.
Educational Technology (ISTE)	1.7. Global Collaborator: Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.
Technology and Engineering (ITEEA)	STEL-1A: Compare the natural world and human-made world.

3.4.K-2.C Environmental Literacy and Sustainability: Environmental Literacy Skills

Students who demonstrate understanding can *explain ways that places differ in their physical characteristics, their meaning, and their value and/or importance.*

Clarifying Statement: Emphasis is on making observations of local environments such as schoolyards, streams, mountains, and fields and sharing their value or meaning. Examples of value or meaning could be their recreational, esthetic (aesthetic), economic, and ecological importance, such as providing a home for animals.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Analyzing and Interpreting Data Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. • Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. **Obtaining, Evaluating, and Communicating Information** Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information. • Communicate information with others in oral and/or written forms using models, drawings, writing, or numbers that provide detail about scientific ideas, practices, and/or design ideas.	**LS4.D: Biodiversity and Humans** • There are many different kinds of living things in any area, and they exist in different places on land and in water. **ESS3.C: Human Impacts on Earth Systems** • Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things.	**Patterns** • Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. **Stability and Change** • Things may change slowly or rapidly.

Pennsylvania Context: Examples of Pennsylvania context include the state's geographic features, which include but are not limited to mountain ranges, forested areas, waterways, watersheds, marshes, farms, cities, and developed areas.

PA Career Ready Skills: Demonstrate respect for the uniqueness of others.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.02.01.01.c: Evaluate geographic data and select necessary data sets to solve problems within AFNR systems.
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 2.3.C. Places: Learners identify ways that places differ in their physical and human characteristics.
PA Core Standards: ELA	CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups. CC.1.5.K.D: Share stories, familiar experiences, and interests, speaking clearly enough to be understood by all audiences using appropriate volume. CC.1.5.1.D: Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly. CC.1.5.2.D: Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.
PA Core Standards and Practices: Math	MP.5: Use appropriate tools strategically. CC.2.4.2.A.4: Represent and interpret data using line plots, picture graphs, and bar graphs.
PA Standards: Social Studies	7.1.1.B: Describe places in geographic reference in physical features.
Educational Technology (ISTE)	1.7. Global Collaborator: Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.
Technology and Engineering (ITEEA)	STEL-1A: Compare the natural world and human-made world.

3.4.K-2.D Environmental Literacy and Sustainability: Environmental Literacy Skills

Students who demonstrate understanding can *plan and carry out an investigation to address an issue in their local environment and community.*

Clarifying Statement: Examples of planning could include developing questions ('wonder statements") about a local environment issue (such as litter, discolored streams, erosion) and then letting students decide how to answer them.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Planning and Carrying Out Investigations Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. • With guidance, plan and conduct an investigation in collaboration with peers.	**ESS3.C: Human Impacts on Earth Systems** • Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things.	**Stability and Change** • Things may change slowly or rapidly. **Patterns** • Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to local nature centers, Pennsylvania's Conservation Districts, and science museums and centers.

PA Career Ready Skills: Identify multiple ways to solve conflicts and practice solving problems.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.01.02.01.c: Solve problems in AFNR workplaces or scenarios using technology.
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 3.2.C. Planning and taking action: Learners develop an action strategy or design solution for a specific local environmental issue of their choosing.
PA Core Standards: ELA	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.1.F: Add drawings or other visual displays when sharing aloud to clarify ideas, thoughts, and feelings. CC.1.5.2.F: Add drawings or other visual displays to presentations when appropriate to clarify ideas, thoughts, and feelings.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. CC.2.4.1.A.4: Represent and interpret data using tables/charts. CC.2.4.2.A.4: Represent and interpret data using line plots, picture graphs, and bar graphs.
PA Standards: Social Studies	5.1.1.E: Describe students' responsibilities in the school and community. 5.1.2.C: Define fairness in working with others. 5.2.2.C: Identify community projects/activities that support leadership and public service.
Educational Technology (ISTE)	1.4. Innovative Designer: Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.
Technology and Engineering (ITEEA)	STEL-2D: Develop a plan in order to complete a task.

3.5 Technology and Engineering

BIG IDEA: Technology impacts daily living and can be used as a tool for exploring and understanding the world, as well as communicating with one another. The media (e.g., , music, books, maps, TV programming, newspapers, magazines, movies, Internet, applications, advertising) constructed with available technology conveys a message that can be read, interpreted, and evaluated.
ESSENTIAL QUESTIONS: How do I choose the correct technology for a task? Can I use various technologies appropriately? How do I read, interpret, and evaluate media?

3.5.K-2.A Technology and Engineering: Applying, Maintaining, and Assessing Technological Products and Systems

Students who demonstrate understanding can *identify and use everyday symbols.*

Clarifying Statement: Symbols are used as a means of communication in the technological world. Examples include road signs, symbols for persons with disabilities, and icons on a screen.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Analyzing and Interpreting Data Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. • Analyze data from tests of an object or tool to determine if it works as intended.	**ETS1.B: Developing Possible Solutions** • Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.	**Communication** • Learns that humans have many ways to communicate.

Pennsylvania Context: N/A

Pennsylvania Career Ready Skills: Identify one's own strengths, needs, and preferences.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Integrated Standards for Science, Environmental Literacy & Sustainability, and Technology & Engineering Standards Grades K–12	N/A

3.5.K-2.AA Technology and Engineering: Nature and Characteristics of Technology and Engineering

Students who demonstrate understanding can *demonstrate that creating can be done by anyone.*

Clarifying Statement: Using technology and engineering tools and techniques, anyone can design or improve things to enhance their lives. Creation of new knowledge, approaches, and inventions can occur through either individual or collaborative efforts. Even young children can view themselves as creators.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	**ETS1.A: Defining and Delimiting Engineering Problems** • A situation that people want to change or create can be approached as a problem to be solved through engineering. • Asking questions, making observations, and gathering information are helpful in thinking about problems. • Before beginning to design a solution, it is important to clearly understand the problem.	**Creativity** • Learns that humans create products and ways of doing things. **Making and Doing** • Learns to use tools and materials to accomplish a task.

Pennsylvania Context: N/A

Pennsylvania Career Ready Skills: Demonstrate respect for the uniqueness of others.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.B Technology and Engineering: Applying, Maintaining, and Assessing Technological Products and Systems

Students who demonstrate understanding can *describe qualities of everyday products.*

Clarifying Statement: Technology assessment, or the ability to critically analyze a technology's effectiveness, is a skill that should be introduced early and consistently. Is a lunchbox hard or soft, metal or plastic, insulated or not? Is there enough space inside for the items brought for lunch?

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Ask questions based on observations to find more information about the natural and/or designed world(s).	**PS1.A: Structure and Properties of Matter** • Different properties are suited for different purposes.	**Communication** • Learns that humans have many ways to communicate.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to manufacturing businesses.

Pennsylvania Career Ready Skills: Demonstrate respect for the uniqueness of others.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.BB Technology and Engineering: Nature and Characteristics of Technology and Engineering

Students who demonstrate understanding can *compare the natural world and human-made world.*

Clarifying Statement: The natural world includes trees, plants, animals, rivers, oceans, mountains, and other items that make up the earth's landscape, biomes, and climate. The human-made world includes pencils, rulers, computers, buildings, airplanes, roads, refrigerators, communication devices, and other items developed for the betterment of humans.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	**ESS3.A: Natural Resources** • Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do.	**Systems Thinking** • Learns that human-designed things are connected. **Critical Thinking** Engages in listening, questioning, and discussing.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to robotic industries and agriculture industries.

Pennsylvania Career Ready Skills: Identify consequences of a decision to oneself and others prior to action.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	3.2.1.C: Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.

3.5.K-2.C Technology and Engineering: Impacts of Technology

Students who demonstrate understanding can *explain ways that technology helps with everyday tasks.*

Clarifying Statement: Children should be able to identify activities they engage in regularly and describe how different technologies help them do these tasks more easily. Contrasting the lifestyles of earlier societies with their own will provide ample examples.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	**ETS1.A: Defining and Delimiting Engineering Problems** Asking questions, making observations, and gathering information are helpful in thinking about problems.	**Communication** • Learns that humans have many ways to communicate.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to robotic industries and agriculture industries.

Pennsylvania Career Ready Skills: Identify multiple ways to solve conflicts and practice solving problems.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.

Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.CC Technology and Engineering: Nature and Characteristics of Technology and Engineering

Students who demonstrate understanding can *discuss the roles of scientists, engineers, technologists and others who work with technology.*

Clarifying Statement: Technological advancement does not occur without the teamwork of many people who have knowledge and skills in distinct areas. Being able to recognize the unique contributions of these individuals is a necessary part of the technological and engineering design process. Young children can develop an appreciation of how people with different specialties can collaborate to design, create, build, and test a product or system. Analogies often work well with students in this grade band. For example, they can understand how a vehicle is purchased from a dealer, maintained by a mechanic at a service center, and driven by a family member. All of these people have something to do with the vehicle, but each in their own way.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Obtaining, Evaluating, and Communicating Information Obtaining, evaluating, and communicating information in 3–5 builds on K–2 experiences and progresses to evaluating the merit and accuracy of ideas and methods. • Compare and/or combine across complex texts and/or other reliable media to support the engagement in other scientific and/or engineering practices.	N/A	**Communication** • Learns that humans have many ways to communicate.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to robotic industries and agriculture industries.

Pennsylvania Career Ready Skills: Identify multiple ways to solve conflicts and practice solving problems.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.D Technology and Engineering: Impacts of Technology

Students who demonstrate understanding can *select ways to reduce, reuse, and recycle resources in daily life.*

Clarifying Statement: Children should give examples of the ways they handle waste at school or at home.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	**ESS3.C: Human Impacts on Earth Systems** • Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. **ETS1.B: Developing Possible Solutions** • Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.	**Attention to Ethics** • Learns that use of technology affects humans and the environment.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to waste removal and recycling facilities.

Pennsylvania Career Ready Skills: Select coping skill strategies response to adverse situations (e.g., positive self-talk, talking to others, taking a break, taking care of oneself, avoiding negative self-talk).

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.DD Technology and Engineering: Core Concepts of Technology and Engineering

Students who demonstrate understanding can *collaborate effectively as a member of a team.*

Clarifying Statement: To operate at the most effective level, team members must learn to communicate and work together as a unit. Strategies to work together in a team must be modeled by the teacher and laid out as an expectation within the laboratory-classroom setting.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	N/A	**Collaboration** • Learns to share technological products and ideas.

Pennsylvania Context: N/A

Pennsylvania Career Ready Skills: Select and utilize expressive communication strategies (e.g., tone, body language, facial expressions) with an understanding of its effect on others.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.E Technology and Engineering: Impacts of Technology

Students who demonstrate understanding can *illustrate helpful and harmful effects of technology.*

Clarifying Statement: Children can examine a familiar technology and explain how it can be both helpful and harmful. For example, a crayon can be used to draw creatively but can also be used to write on bedroom walls.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	N/A	**Communication** • Learns that humans have many ways to communicate. **Attention to Ethics** • Learns that use of technology affects humans and the environment.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to robotic industries and agriculture industries.

Pennsylvania Career Ready Skills: Identify consequences of a decision to oneself and others prior to action.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	3.3.2.B: Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.

3.5.K-2.F Technology and Engineering: Influence of Society on Technological Development

Students who demonstrate understanding can *investigate the use of technologies in the home and community.*

Clarifying Statement: Children learn to use their senses to gather data and make observations about technologies in their everyday environment. Toasters, microwaves, stoves, and refrigerators may be used to create breakfasts before going to school in western cultures. In other societies, different food storage and preparation technologies are used for this same purpose.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	**ETS1.A: Defining and Delimiting Engineering Problems** • Asking questions, making observations, and gathering information are helpful in thinking about problems.	**Critical Thinking** • Engages in listening, questioning, and discussing.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to Pennsylvania's food production industries.

Pennsylvania Career Ready Skills: Demonstrate respect for the uniqueness of others.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	3.2.1.C: Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.

3.5.K-2.G Technology and Engineering: Nature and Characteristics of Technology and Engineering

Students who demonstrate understanding can *explain the tools and techniques that people use to help them do things.*

Clarifying Statement: By using technology and engineering, people adapt the natural world to meet their needs and wants and to solve problems. All people use tools and processes created through technology and engineering in every aspect of their daily tasks.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	**ETS1.A: Defining and Delimiting Engineering Problems** • A situation that people want to change or create can be approached as a problem to be solved through engineering. • Asking questions, making observations, and gathering information are helpful in thinking about problems. • Before beginning to design a solution, it is important to clearly understand the problem.	**Critical Thinking** • Engages in listening, questioning, and discussing.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to robotic industries and agriculture industries.

Pennsylvania Career Ready Skills: Identify multiple ways to solve conflicts and practice solving problems.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.H Technology and Engineering: Influence of Society on Technological Development

Students who demonstrate understanding can *explain the needs and wants of individuals and societies.*

Clarifying Statement: Basic human needs include food, water, and shelter. Beyond these, children can discuss other needs and wants that have resulted in new technologies. This helps them to begin to see that other people's thoughts, feelings, needs, and wants may differ from their own.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	**ETS1.A: Defining and Delimiting Engineering Problems** • A situation that people want to change or create can be approached as a problem to be solved through engineering.	**Communication** • Learns that humans have many ways to communicate.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to manufacturing businesses.

Pennsylvania Career Ready Skills: Identify possible behaviors and anticipate reactions in response to a specific social context.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.I Technology and Engineering: Impacts of Technology

Students who demonstrate understanding can *compare simple technologies to evaluate their impacts.*

Clarifying Statement: Children can look at simple tools in their home or school to compare how they impact life. For example, how does a hand-operated pencil sharpener versus an electric one impact people?

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	**ETS1.C: Optimizing the Design Solution** • Because there is always more than one possible solution to a problem, it is useful to compare and test designs.	**Critical Thinking** • Engages in listening, questioning, and discussing.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to robotic industries and agriculture industries.

Pennsylvania Career Ready Skills: Identify consequences of a decision to oneself and others prior to action.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.J Technology and Engineering: Impacts of Technology

Students who demonstrate understanding can *design new technologies that could improve their daily lives.*

Clarifying Statement: Children can brainstorm needs or wants and devise possible solutions to meet a need. Teachers and parents can pose "what if?" questions to young children. "What if you and your friends could build something in the school's playground to make recess more fun? What would you build?"

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem.	**ETS1.A: Defining and Delimiting Engineering Problems** • A situation that people want to change or create can be approached as a problem to be solved through engineering.	**Making and Doing** • Learns to use tools and materials to accomplish a task.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to manufacturing businesses.

Pennsylvania Career Ready Skills: Identify one's own strengths, needs, and preferences.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	3.3.2.B: Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.

3.5.K-2.K Technology and Engineering: Core Concepts of Technology and Engineering

Students who demonstrate understanding can *safely use tools to complete tasks.*

Clarifying Statement: Many tools have specific functions and selecting the right tool makes the task easier. People use tools to make objects, to achieve a desired outcome, and to communicate. Children use scissors to cut paper, glue sticks to fasten components together, markers to sketch ideas, and computers to search for information.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Constructing Explanations and Designing Solutions • Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem.	N/A	**Making and Doing** • Learns to use tools and materials to accomplish a task.

Pennsylvania Context: N/A

Pennsylvania Career Ready Skills: Identify consequences of a decision to oneself and others prior to action.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.L Technology and Engineering: Influence of Society on Technological Development

Students who demonstrate understanding can *explore how technologies are developed to meet individual and societal needs and wants.*

Clarifying Statement: For example, people need clean, safe water, so systems are developed to provide water to homes and schools. Human-made technology requires some knowledge of the natural world and uses materials from it as well.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	**ETS1.A: Defining and Delimiting Engineering Problems** • Before beginning to design a solution, it is important to clearly understand the problem.	**Systems Thinking** • Learns that human-designed things are connected.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to manufacturing businesses.

Pennsylvania Career Ready Skills: Respond to others given a sense of the others' point of view.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.M Technology and Engineering: Design in Technology and Engineering Education

Students who demonstrate understanding can *demonstrate essential skills of the engineering design process.*

Clarifying Statement: Young children identify that there are some essential skills, such as creative thinking, building, and testing, that are required to succeed in technology and engineering design.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem.	**ETS1.B: Developing Possible Solutions** • Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.	**Creativity** • Learns that humans create products and ways of doing things. **Making and Doing** • Learns to use tools and materials to accomplish a task. **Collaboration** • Learns to share technological products and ideas.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to manufacturing businesses.

Pennsylvania Career Ready Skills: Explain ways to establish relationships that are positive and supportive of others.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.N Technology and Engineering: Applying, Maintaining, and Assessing Technological Products and Systems

Students who demonstrate understanding can *analyze how things work.*

Clarifying Statement: This can be done by safely and carefully taking something apart and then putting it back together. The ability to observe, analyze, and document is vital to successfully accomplishing this task.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	**ETS1.A: Defining and Delimiting Engineering Problems** • Before beginning to design a solution, it is important to clearly understand the problem.	**Critical Thinking** • Engages in listening, questioning, and discussing.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to manufacturing businesses.

Pennsylvania Career Ready Skills: Identify consequences of a decision to oneself and others prior to action.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.O Technology and Engineering: Design in Technology and Engineering Education

Students who demonstrate understanding can *illustrate that there are different solutions to a design and that none are perfect.*

Clarifying Statement: Young children recognize that there is more than one plausible solution to a design challenge.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Generate and/or compare multiple solutions to a problem.	**ETS1.A: Defining and Delimiting Engineering Problems** • A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions.	**Optimism** • Sees opportunities for making technologies better. .

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to manufacturing businesses.

Pennsylvania Career Ready Skills: Demonstrate respect for the uniqueness of others.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	3.2.1.A: Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.

3.5.K-2.P Technology and Engineering: Design in Technology and Engineering Education

Students who demonstrate understanding can *discuss that all designs have different characteristics that can be described.*

Clarifying Statement: Young children recognize and categorize basic features of design, which represent principles and elements of design. In drawing, they begin to differentiate between lines, colors, and shapes. In thinking about early ideas on design, they might brainstorm with other children, draw sketches, and see how well their ideas worked out.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Generate and/or compare multiple solutions to a problem.	**ETS1.B: Developing Possible Solutions** • Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.	**Communication** • Learns that humans have many ways to communicate.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to manufacturing businesses.

Pennsylvania Career Ready Skills: Select and utilize expressive communication strategies (e.g., tone, body language, facial expressions) with an understanding of its effect on others.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.Q Technology and Engineering: Design in Technology and Engineering Education

Students who demonstrate understanding can *apply skills necessary for making in design.*

Clarifying Statement: Providing opportunities to use tools and manipulate materials can facilitate making skills in young children. Structuring design experiences at this age may take the form of tinkering and play.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem.	**ETS1.B: Developing Possible Solutions** • Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.	**Making and Doing** • Learns to use tools and materials to accomplish a task.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to manufacturing businesses.

Pennsylvania Career Ready Skills: Identify one's own strengths, needs, and preferences.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.R Technology and Engineering: Integration of Knowledge, Technologies, and Practices

Students who demonstrate understanding can *draw connections between technology and human experiences.*

Clarifying Statement: Young children learn to count through nursery rhymes and playing with manipulatives. Children's books often include graphics and some even generate sound. Teachers can have students identify technological connections from their homes, traveling in vehicles, and other experiences, and through this help young students understand the role of technology in their lives.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	N/A	**Systems Thinking** • Learns that human-designed things are connected.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to robotic industries and agriculture industries.

Pennsylvania Career Ready Skills: Identify multiple ways to solve conflicts and practice solving problems.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.S Technology and Engineering: Design in Technology and Engineering Education

Students who demonstrate understanding can *apply design concepts, principles, and processes through play and exploration.*

Clarifying Statement: Design experiences build on young children's natural curiosity, desire to explore, and persistence. Familiar materials, tools, and environments will enhance these experiences.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem.	**ETS1.C: Optimizing the Design Solution** • Because there is always more than one possible solution to a problem, it is useful to compare and test designs.	**Making and Doing** • Learns to use tools and materials to accomplish a task. **Creativity** • Learns that humans create products and ways of doing things.

Pennsylvania Context: N/A

Pennsylvania Career Ready Skills: Identify possible behaviors and anticipate reactions in response to a specific social context.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.T Technology and Engineering: Design in Technology and Engineering Education

Students who demonstrate understanding can *demonstrate that designs have requirements.*

Clarifying Statement: Young children recognize that all designs must meet certain expectations. These expectations are related to the purpose, function, and requirements of a solution.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Generate and/or compare multiple solutions to a problem.	**ETS1.A: Defining and Delimiting Engineering Problems** • Before beginning to design a solution, it is important to clearly understand the problem.	**Critical Thinking** • Engages in listening, questioning, and discussing. .

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to Pennsylvania Department of Labor & Industry regulations.

Pennsylvania Career Ready Skills: Identify one's own strengths, needs, and preferences.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.U Technology and Engineering: Design in Technology and Engineering Education

Students who demonstrate understanding can *explain that design is a response to wants and needs.*

Clarifying Statement: Young children begin to understand that design is driven by wants and needs. These wants and needs often derive from familiar environments such as home, school, and community.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Generate and/or compare multiple solutions to a problem.	**ETS1.A: Defining and Delimiting Engineering Problems** • Asking questions, making observations, and gathering information are helpful in thinking about problems.	**Communication** • Learns that humans have many ways to communicate.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to Pennsylvania's food production industries.

Pennsylvania Career Ready Skills: Identify one's own strengths, needs, and preferences.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.V Technology and Engineering: Core Concepts of Technology and Engineering

Students who demonstrate understanding can *explain that materials are selected for use because they possess desirable properties and characteristics.*

Clarifying Statement: Paper, wood, cloth, cardboard, and found objects are the most common materials young children use in making the items they design. By working with materials, they learn through observation and testing which materials perform better for given tasks.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	**PS1.A: Structure and Properties of Matter** • Different properties are suited to different purposes. **ETS1.A: Defining Engineering Problems** • A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions.	**Communication** • Learns that humans have many ways to communicate.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to waste removal and recycling facilities.

Pennsylvania Career Ready Skills: Demonstrate respect for the uniqueness of others.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.W Technology and Engineering: Integration of Knowledge, Technologies, and Practices

Students who demonstrate understanding can *apply concepts and skills from technology and engineering activities that reinforce concepts and skills across multiple content areas.*

Clarifying Statement: Young children can use building blocks to develop computational and critical thinking skills by introducing design, measurement, and structural concepts. The intentional translation of skills learned in physical education, such as teamwork, can be applied to problem solving. Drawing in art class can lead to new ways of thinking about design and visual appeal.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Analyzing and Interpreting Data Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. • Analyze data from tests of an object or tool to determine if it works as intended.	**ETS1.A: Defining and Delimiting Engineering Problems** • A situation that people want to change or create can be approached as a problem to be solved through engineering. • Asking questions, making observations, and gathering information are helpful in thinking about problems. • Before beginning to design a solution, it is important to clearly understand the problem.	**Collaboration** Learns to share technological products and ideas.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to Pennsylvania's food production industries.

Pennsylvania Career Ready Skills: Identify one's own strengths, needs, and preferences.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	3.3.K.E: Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.

3.5.K-2.X Technology and Engineering: Core Concepts of Technology and Engineering

Students who demonstrate understanding can *develop a plan in order to complete a task.*

Clarifying Statement: For example, young children learn that if they want to accomplish something, such as design and make a birthday card for a parent, they must have the materials available, and they must have the card ready by a given date.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	**ETS1.B: Developing Possible Solutions** • Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.	**Collaboration** • Learns to share technological products and ideas.

Pennsylvania Context: N/A

Pennsylvania Career Ready Skills: Distinguish among and set short-term, mid-range, and long-term goals.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.Y Technology and Engineering: History of Technology

Students who demonstrate understanding can *discuss how the way people live and work has changed throughout history because of technology.*

Clarifying Statement: Once people learned to provide shelter for themselves—first with simple huts and later with houses, castles, and skyscrapers—they were no longer forced to seek natural shelter, such as caves. The invention of the plow and other agricultural technologies, along with such simple devices as fish hooks and the bow and arrow, made it easier for people to feed themselves, freeing up time for other pursuits. People's ability to communicate with one another over space and time has been improved by the use of tools and processes like smoke signals, alarms, papermaking, printing, telephones, and the internet.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested. • Define a simple problem that can be solved through the development of a new or improved object or tool.	**ETS1.A: Defining & Delimiting Engineering Problems** • Asking questions, making observations, and gathering information are helpful in thinking about problems.	**Critical Thinking** • Engage in listening, questioning, and discussing.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to manufacturing businesses.

Pennsylvania Career Ready Skills: Demonstrate respect for the uniqueness of others.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

3.5.K-2.Z Technology and Engineering: Core Concepts of Technology and Engineering

Students who demonstrate understanding can *illustrate how systems have parts or components that work together to accomplish a goal.*

Clarifying Statement: Once people learned to provide shelter for themselves—first with simple huts and later with houses, castles, and skyscrapers—they were no longer forced to seek natural shelter, such as caves. The invention of the plow and other agricultural technologies, along with such simple devices as fish hooks and the bow and arrow, made it easier for people to feed themselves, freeing up time for other pursuits. People's ability to communicate with one another over space and time has been improved by the use of tools and processes like smoke signals, alarms, papermaking, printing, telephones, and the internet.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Developing and Using Models Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, storyboard) that represent concrete events or design solutions. • Develop and/or use a model to represent amounts, relationships, relative scales (bigger, smaller), and/or patterns in the natural and designed world(s).	**ETS1.A: Defining and Delimiting Engineering Problems** • A situation that people want to change or create can be approached as a problem to be solved through engineering. In solving the problem, there may be different parts that need to connect.	**Systems Thinking** • Learns that human-designed things are connected.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to robotic industries and agriculture industries.

Pennsylvania Career Ready Skills: Explain ways to establish relationships that are positive and supportive of others.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers. CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers. CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.4.1-2.V: Participate in individual or shared research and writing projects. CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question. CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.2: Reason abstractly and quantitatively. MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic Standards	N/A

Scientific Thinking Glossary

Characteristic – A feature or quality belonging typically to a person, place, or thing and serving to identify it.

Climate – The weather conditions prevailing in an area in general or over a long period.

Energy – The capacity of a body or system to do work.

Energy Flow – Flow of energy is the way energy flows through circuits or a food chain.

Experiment – A test done in order to learn something or to discover if something works or is true

Fact – Information that has been objectively verified.

Force – Strength or energy as an attribute of physical action or movement.

Form – The visible shape or configuration of something.

Function – An activity or purpose natural to or intended for a person or thing.

Hypothesis – An assertion subject to verification or proof as a premise from which a conclusion is drawn.

Inquiry – A systematic process for using knowledge and skills to acquire and apply new knowledge.

Investigation – The action of investigating something or someone; formal or systematic examination.

Life Cycle – The series of changes in the life of an organism, including reproduction.

Matter – The substance or substances of which any physical object consists or is composed.

Model – A description, analogy, or a representation of something that helps us understand it better (e.g., a physical model, a conceptual model, a mathematical model).

Motion – The action or process of moving or being moved.

Organism – An individual animal, plant, or single-celled life form.

Patterns – Repeated processes that are exhibited in a wide variety of ways; identifiable recurrences of the element and/or the form.

Prediction – To declare or indicate in advance; especially foretell on the basis of observation, experience, or scientific reason.

Properties – The characteristic that can be used to describe an object or substance.

Science – Search for understanding of the natural world using inquiry and experimentation.

Scientist – A person who is studying or has expert knowledge of one or more of the natural or physical sciences.

Species – A group of individual organisms that are capable of interbreeding to produce fertile offspring in nature.

Substances – Any type of matter or material.

System – A group of related objects that work together to achieve a desired result.

Temperature – The degree or intensity of heat present in a substance or object, especially as expressed according to a comparative scale and shown by a thermometer or perceived by touch.

Environment and Ecology Glossary

Adaptation – Special, inherited characteristics that help an organism survive in its environment and which are developed over time.

Ecosystem – A biological community of interacting organisms and their physical environment.

Litter – Waste materials carelessly discarded or accidentally deposited in an inappropriate place. Littering is against the law.

Natural Resources – Those raw materials supplied by the Earth and its processes. Natural resources include nutrients, minerals, water, plants, animals, etc.

Nonrenewable Resources – Natural materials such as oil, gas, coal, etc. which are considered exhaustible because of their scarcity, the great length of time required for their formation, or their rapid depletion.

Pollution – Harmful substances deposited in the air, water, or land, leading to a state of dirtiness, impurity, or unhealthiness.

Recycle – To make materials such as glass, aluminum, paper, steel, and plastic into new products.

Reduce – To decrease the amount of waste we produce by buying only what we need, avoiding disposables, and buying products that are not over-packaged.

Renewable Resource – A naturally occurring resource that has the capacity to be replenished through natural processes; the sun, wind, trees, and animals are renewable resources.

Reuse – To extend the life of an item by using it again, repairing it, or creating new uses for it.

Sustainable – Conserving an ecological balance by avoiding depletion of natural resources.

Waste Management – The collection, transport, processing, recycling, or disposal, and monitoring of waste materials.

Technology and Engineering Glossary

Design Solution – The process of creating a detailed blueprint or plan for the implementation of a specific solution to a problem or challenge.

Engineer – An engineer conceives, designs, and creates equipment or processes to solve economic, environmental, or social problems.

Engineering Design Process – The process is a set of steps that guide us - or any professional engineer, scientist, or mathematician - through solving a problem.

Technologist – An expert in modern technology, especially technology relating to a particular activity or industry

Technology and Engineering – The combined disciplinary study of the engineered (human-designed) world, the goal of which is to develop individuals with a breadth of knowledge and capabilities who see the interactions between technology, engineering, and society and can use, create, and assess current and emerging. Technologies.

Tools – Anything used to extend human capability also referred to as technology.

STEELS Hub: STEELS Standards - SAS (pdesas.org)
an-overview-of-state-developed-p-12-standards-for-technological-and-engineering-literacy-other (5).pdf

Social Studies Thinking

Connecting to Communities

- **5.1 Principles and Documents of Government**
- **5.2 Rights and Responsibilities of Citizenship**
- **5.3 How Government Works**
- **5.4 How International Relationships Function**
- **6.1 Scarcity and Choice**
- **6.2 Market and Economic Systems**
- **6.3 Functions of Government**
- **6.4 Economic Dependence**
- **6.5 Income, Profit, and Wealth**
- **7.1 Basic Geographic Literacy**
- **7.2 Physical Characteristics of Places and Regions**
- **7.3 Human Characteristics of Places and Regions**
- **7.4 Interactions Between People and the Environment**
- **8.1 Historical Analysis and Skills Development**
- **8.2 Pennsylvania History**
- **8.3 United States History**
- **8.4 World History**

Inclusive Classrooms

Early childhood classrooms should be inclusive ones where children with disabilities and developmental delays engage in classroom experiences alongside their typically developing peers. When teachers, specialists, and families work together to understand and adapt teaching strategies, materials, and/or environment to children's unique needs, every child can experience success. Adults must celebrate children's accomplishments and appreciate what children can learn and do.

The foundation of social studies, economics, history, and the workings of government begin with children's personal experiences and their initial understanding of themselves in relation to their families, homes, and schools. Gradually, students expand their understanding to include communities and the larger world. As their perception grows, they further expand their scope to understand how systems work together. Adults facilitate children's social studies skill development by helping them engage in active investigations that build knowledge and understanding.

Civics and Government

BIG IDEA: Learning to be a good citizen helps one contribute to society in a meaningful way.
ESSENTIAL QUESTIONS: What rules and consequences are important? Can I identify some American symbols?

5.1 PRINCIPLES AND DOCUMENTS OF GOVERNMENT

A. RULE OF LAW

Standard	Concepts and Competencies	Supportive Practices
5.1 2.A **Explain the purposes of rules and their consequences in the classroom and school community.**	**The learner will:** • State why school rules are important (e.g., riding the bus, crosswalks). • Demonstrate knowledge of the rules in all areas of the classroom and school community. • Accept consequences for non-adherence to the posted rules.	**The adult will:** • Explain and demonstrate rules are for safety, fairness, and respect for others. • Create rules with students for the classroom community and appropriate consequences if not followed. • Explain, model, practice, and reinforce rules for all areas of the building. • Consistently cite and enforce rules and dialog with students on why the rule is in place. • Provide consistent consequences for infractions.

B. LAWS AND GOVERNMENT

Standard	Concepts and Competencies	Supportive Practices
5.1 2.B **Explain the importance of rules in the classroom and school community.**	**The learner will:** • State appropriate behaviors needed for the successful function of the classroom and school. • Contribute to creating classroom rules and consequences. • Demonstrate respect for the rules through positive behavior.	**The adult will:** • Demonstrate the importance and purpose of school and classroom rules. • Introduce texts that discuss the importance of rules. • Engage students in developing a set of classroom rules and appropriate consequences if not followed. • Consistently cite and enforce rules and dialog with students on why the rule is in place. • Explain, model, practice, and reinforce rules for all areas of the building. • Provide consistent consequences for infractions.

C. PRINCIPLES AND IDEALS THAT SHAPE GOVERNMENT

Standard	Concepts and Competencies	Supportive Practices
5.1 2.C **Define fairness in working with others.**	**The learner will:** • Create a list about how to be a fair person (e.g., play by the rules). • Discuss the importance of treating others fairly. • Identify similarities between self and others. • Explain the accommodations or adaptations necessary for individual success in various situations.	**The adult will:** • Define fairness. • Create fair/not fair scenarios for students. • Introduce texts that discuss fairness. • Introduce students to character education web links. • Provide students with the accommodations or adaptations necessary to attain success in various situations. • Model acceptance of diversity in the classroom community.

D. DOCUMENTS AND IDEALS THAT SHAPE PENNSYLVANIA AND U.S. GOVERNMENT

Standard	Concepts and Competencies	Supportive Practices
5.1 2.D **Explain why school rules are written and posted.**	**The learner will:** • Explain the importance of having written rules that are posted. • Refer to written, posted rules as part of community interactions. • Contribute to making the classroom rules. • Model knowledge of rules through interactions with peers and adults.	**The adult will:** • Show students where school rules are posted. • Refer to written school rules as a way to inform all students of expected behavior. • Involve students in creating school rules posters to display. • Consistently cite and enforce the created rules. • Dialog with students on why the rule is in place. • Post all rules which guide students and review regularly with them.

E. INDIVIDUAL RIGHTS

Standard	Concepts and Competencies	Supportive Practices
5.1 2.E **Describe citizens' responsibilities to the state of Pennsylvania and to the nation.**	**The learner will:** • Explain qualities of a good citizen. • Illustrate how citizens can help their community. • Explain the difference between a right and a responsibility either through examples or definition.	**The adult will:** • Define the term responsibility. • Read books about responsibility and citizenship. • Define that a right cannot be taken from an individual. [In a school, students have the right to learn and the responsibility to do so. In the community, individuals have the right to free speech, worship, etc (refer to the Bill of Rights).] • Assist students in determining what is a right and what is a responsibility in the classroom and how that extends to the community and the state and vice versa.

F. SYMBOLS

Standard	Concepts and Competencies	Supportive Practices
5.1 2.F **Identify state symbols.**	**The learner will:** • Name state symbols found locally. • Use illustrations to replicate Pennsylvania's state symbols.	**The adult will:** • Define the term symbol. • Provide pictures of Pennsylvania's state symbols. • Provide literature that relates to symbols of Pennsylvania and discuss their significance.

5.2 RIGHTS AND RESPONSIBILITIES OF CITIZENSHIP

A. CIVIC RIGHTS AND RESPONSIBILITIES

Standard	Concepts and Competencies	Supportive Practices
5.2 2.A **Identify and explain the importance of responsibilities at school, at home, and in the community.**	**The learner will:** • Participate in classroom responsibilities. • List own responsibilities (e.g., at home, school). • Discuss responsibilities of being a community member (e.g., recycling, bicycle safety, speed limits). • Demonstrate independent actions which support a positive learning environment. • Demonstrate independent actions for being a member of the community.	**The adult will:** • Define expectations of responsibilities (e.g., in the classroom, at school). • Brainstorm a list of responsibilities students have (e.g., at home, school, in the community). • Read texts about the importance of responsibility. • Support students in their varying levels of independence for learning with visual, verbal, and physical cues. • Establish classroom expectations for responsibilities of materials and learning. • Provide models of what responsible actions look like in various situations or places.

B. CONFLICT AND RESOLUTION

Standard	Concepts and Competencies	Supportive Practices
5.2 2.B **Identify a problem and a probable solution.**	**The learner will:** • Use role-play to solve problems and disagreements. • Brainstorm various strategies to solve a problem. • Solve problems independently.	**The adult will:** • Provide instruction on conflict resolution strategies. • Read texts about getting along. • Provide support as children work together to resolve a problem. • Use questions with students to enhance and expand children's thinking about problems.

C. LEADERSHIP AND PUBLIC SERVICE

Standard	Concepts and Competencies	Supportive Practices
5.2 2.C **Identify community projects/activities that support leadership and public service.**	**The learner will:** • Brainstorm ways to help the school or community. • Participate in a public service project (e.g., food drive, school-wide clean up, collect mittens and scarves). • Demonstrate actions which assist others when needed. • Demonstrate positive behavior within the community. • Demonstrate acceptance of others leadership roles.	**The adult will:** • Initiate a public service project (e.g., food drive, school-wide clean up, collect mittens and scarves). • Read books about helping those in need. • Provide opportunities for students to provide assistance to teacher or other students. • Provide collaborative learning opportunities within the school community. • Dialog with students concerning acceptance of others leadership roles.

D. COMPETENT AND RESPONSIBLE CITIZENS

Standard	Concepts and Competencies	Supportive Practices
5.2 2.D **Explain responsible community behavior.**	**The learner will:** • Demonstrate ways to be a leader/role model in the classroom and community. • Identify characteristics of responsible behavior.	**The adult will:** • Invite members of the community to speak about ways they can get involved. • Provide the supports for students to have independent routines to meet expectations of community. • Reinforce appropriate behavior. • Model and dialog with students concerning appropriate actions and words during learning events and classroom and school activities.

5.3 HOW GOVERNMENT WORKS

A. BRANCHES OF GOVERNMENT

Standard	Concepts and Competencies	Supportive Practices
5.3 2.A **Identify the role government plays in the community (e.g., education, transportation).**	**The learner will:** • Identify managed organizations within the local community (e.g., schools, bus transportation, libraries). • Identify government in the community (e.g., mayor).	**The adult will:** • Introduce and discuss managed organizations found in the local community (e.g., schools, libraries). • Invite members of managed organizations as guest speakers. • Provide instruction on the services needed to help and protect members of the community.

B. STRUCTURE, ORGANIZATION, AND OPERATION OF GOVERNMENTS

Standard	Concepts and Competencies	Supportive Practices
5.3 2.B **Identify local government leaders.**	**The learner will:** • Identify leaders in the community by job, position, or name. • Identify the mayor. • Participate in discussion on responsibilities of a mayor. • Participate in discussions about city council.	**The adult will:** • Instruct on the services provided by local government which help or protect the members of the community. • Read books about local government leaders. • Invite government leaders to be guest speakers.

C. GOVERNMENT SERVICES

Standard	Concepts and Competencies	Supportive Practices
5.3 2.C **Identify other types of services provided by local government.**	**The learner will:** • Identify services provided by government to the community (e.g., animal control, road maintenance, hospitals, education).	**The adult will:** Invite service providers into the classroom to discuss their roles in the community and how they serve the public. • Connect to literature about people who support and serve the family and community.

D. LEADERSHIP AND POLITICAL ELECTIONS

Standard	Concepts and Competencies	Supportive Practices
5.3 2.D **Identify positions of authority at school.**	**The learner will:** • Identify positions of authority at school (e.g., principal, assistant principal, teacher).	**The adult will:** • Talk about the role of adults who direct the actions of others in the school community that support their right to learn. • Use materials from an "Anti-Bullying" curriculum to assist students in understanding the difference between "authority" and "authoritarian." • Model respect for authority. • Reinforce appropriate respect given to people in authority by students.

E. ELEMENTS OF THE ELECTION PROCESS

Standard	Concepts and Competencies	Supportive Practices
5.3 2.E **Describe situations in the state or nation when it is beneficial to have an elected official represent the people.**	**The learner will:** • Participate in discussions that define elected officials (e.g., how officials become elected). • Discuss roles elected officials perform. • Participate in a voting activity. • Participate in compiling voting results.	**The adult will:** • Facilitate discussions on elected officials (e.g., process of electing, roles, responsibilities). • Provide texts that highlight the electoral process. • Invite an elected official to serve as a guest speaker (e.g., talk about roles and responsibilities). • Provide opportunities for students to vote on various topics. • Provide various voting options (e.g., show of hands, secret ballot). • Involve students in compiling voting results.

F. CONFLICT AND THE COURT SYSTEM

Standard	Concepts and Competencies	Supportive Practices
5.3 2.F **Identify and explain behaviors for responsible school citizens and possible consequences for inappropriate action.**	**The learner will:** • Identify consequences for not following school rules and expected behaviors.	**The adult will:** • Facilitate discussions on elected officials (e.g., process of electing, roles, responsibilities). • Provide text that highlights the electoral process. • Invite an elected official to serve as a guest speaker (e.g., talk about roles and responsibilities). • Provide opportunities for students to vote on various topics. • Provide various voting options (e.g., show of hands, secret ballot). • Involve students in compiling voting results.

H. MEDIA INFLUENCES

Standard	Concepts and Competencies	Supportive Practices
5.3 2.H **Identify different forms of media.**	**The learner will:** • Contribute information during class learning activities and identify the source. • Define media. • Participate in discussions on various types of media. • Draw different forms of media. • Explore media (e.g., writing, taking digital photos, recording).	**The adult will:** • Dialog with students on how information is received in the community. • Encourage students to identify the source of information they share and how they received it. • Define the term media through pictures. • Show inventions that changed how people communicate (e.g., telegraph, telephone, radio, TV, Internet, Pony Express, mail, email, cell phones). • Invite a local expert on media as a guest speaker.

I. TAXES

Standard	Concepts and Competencies	Supportive Practices
5.3 2.I **Define taxes and why they are paid.**	**The learner will:** • Identify services provided by local government and if the services are paid or volunteer. • Explain taxes pay for the services provided. • Draw a picture of things that taxes help pay for. • Research information on local tax. • Explain taxes and why people pay them.	**The adult will:** • Instruct on the services provided by government and if they are volunteer positions or paid positions. • Provide instruction on how taxes levied by the government provide for goods and services to communities and individuals. • Explain why people pay taxes. • Provide examples of goods and services that are paid with taxes (e.g., roads, parks, playgrounds). • Facilitate discussion on different types of taxes (e.g., income, sales, property). • Explain the basic process of collecting taxes. • Read books that explain taxes.

J. SYSTEMS OF GOVERNMENT

Standard	Concepts and Competencies	Supportive Practices
5.3 2.J **Identify the responsibilities of voters after the vote.**	**The learner will:** • Understand a vote as a choice that is counted. • Understand voting as a right. • Participate in classroom voting experiences. • Participate in compiling voting results. • Recognize voting experiences may not result in the choice made by an individual. • Demonstrate acceptance of the vote through positive behavior.	**The adult will:** • Explain that voting is an individual's right to make a choice. • Provide classroom voting opportunities. • Provide various voting options (e.g., show of hands, secret ballot). • Involve students in compiling voting results. • Discuss how a majority determines a decision. • Support the losing parties in acceptance of the winning vote. • Introduce voting vocabulary (e.g., ballot, cast, ticket, poll, majority, minority). • Facilitate discussions on the voting process (e.g., casting votes, counting, announcing decision, acceptance).

5.4 HOW INTERNATIONAL RELATIONSHIPS FUNCTION

A. COUNTRIES AND CONFLICTS

Standard	Concepts and Competencies	Supportive Practices
5.4 2.A **Explain examples of conflict in the community, state, and nation.**	**The learner will:** • Research current conflicts (e.g., community, state, nation). • Participate in discussions on current conflicts. • State emotions relating to current conflict (e.g., fear, sad).	**The adult will:** • Provide opportunities to research conflict (e.g., community, state, nation). • Read books about people involved in conflict. • Encourage students to share emotions relating to current conflicts. • Use questions with students to enhance and expand children's thinking about conflict. • Model problem-solving dialog throughout the day.

B. TOOLS OF FOREIGN POLICY

Standard	Concepts and Competencies	Supportive Practices
5.4 2.B **Identify ways that countries can work together.**	**The learner will:** • Participate in group decision-making and consensus building. • Work cooperatively with other classrooms to achieve a common goal. • Research countries that support one another. • Share how countries support one another (e.g., trade, financial).	**The adult will:** Provide cooperative learning activities with other classrooms or grade levels. Provide opportunities for students to experience working with others to a common goal. • Define ally. • Provide opportunities to research countries that are allies. • Brainstorm ways countries can support one another.

C. STRUCTURE, ORGANIZATION, AND OPERATION OF GOVERNMENTS

Standard	Concepts and Competencies	Supportive Practices
5.4 2.C **Explain why nations need to work together for peace.**	**The learner will:** • Work cooperatively with peers to achieve a common goal. • Explain conflict/resolution steps and the importance of practicing cooperation and resolution. • Explain the benefits of working together (e.g., less conflict, work done faster, build friendships). • Brainstorm reasons nations should work together.	**The adult will:** • Engage children in class meetings and decision-making. • Actively model and reinforce conflict resolution at the individual level. • Support students who display difficulty accepting others' leadership, or consensus. • Define peace. • Define nations. • Show examples of countries working together. • Brainstorm consequences of nations that don't work together.

D. MEDIA AND ITS INFLUENCE

Standard	Concepts and Competencies	Supportive Practices
5.4 2.D **Identify the different types of media.**	**The learner will:** • Practice making compromises. • Participate in classroom experiences that involve compromise. • Research community compromises resulting from challenges. • Participate in group decision-making and consensus building. • Work cooperatively with other children to achieve an outcome. • Demonstrate acceptance of final consensus.	**The adult will:** • Offer opportunities to practice making compromises. • Support students in making a compromise. • Provide texts on compromise. • Offer opportunities to research community compromises resulting from challenges. • Actively model and reinforce conflict resolution at the individual level. • Support students who display difficulty accepting others' leadership, or consensus. • Invite a community member to discuss challenges and compromises agreed upon.

E. HOW FOREIGN POLICY IS INFLUENCED

Standard	Concepts and Competencies	Supportive Practices
5.4 2.E **Explain how a community reaches compromise.**	**The learner will:** • Practice making compromises. • Participate in classroom experiences that involve compromise. • Research community compromises resulting from challenges. • Participate in group decision-making and consensus building. • Work cooperatively with other children to achieve an outcome. • Demonstrate acceptance of final consensus.	**The adult will:** • Offer opportunities to practice making compromises. • Support students in making a compromise. • Provide texts on compromise. • Offer opportunities to research community compromises resulting from challenges. • Actively model and reinforce conflict resolution at the individual level. • Support students who display difficulty accepting others' leadership, or consensus. • Invite a community member to discuss challenges and compromises agreed upon.

Economics

BIG IDEAS: Money can be used to purchase goods and services, or can be saved. People make choices about how to spend money based on different influences.
ESSENTIAL QUESTIONS: How can I use money? What influences the choices I make about spending what I have earned?

6.1 SCARCITY AND CHOICE

A. SCARCITY AND CHOICE

Standard	Concepts and Competencies	Supportive Practices
6.1 2.A **Identify scarcity of resources within the school community.**	**The learner will:** • Understand that wants cannot be met all the time. • Identify resources that are scarce within the school. • Participate in discussions on how limited resources influence a classroom/school.	**The adult will:** • Talk about times scarcity impacts the choices schools make. • Read or tell a story in which a character cannot get something because of limited resources. • Explain how limited choices can lead to conflict.

B. LIMITED RESOURCES

Standard	Concepts and Competencies	Supportive Practices
6.1 2.B **Identify community needs and wants.**	**The learner will:** • Distinguish between wants and needs in a community setting (e.g., housing, roads, stop signs, sidewalks, police, grocery store, movie theatre).	**The adult will:** • Provide maps of a community and engage students in identifying which parts of the community are wants versus needs. • Use graphic organizers to visually represent wants and needs. • Discuss what impacts whether something is a community want or need (e.g., distance, type of community).

C. OPPORTUNITY COSTS

Standard	Concepts and Competencies	Supportive Practices
6.1 2.C **Explain how choice has consequences.**	**The learner will:** • Identify the impact of choices (e.g., self, others, environment). • Explain how spending money impacts saving money and vice versa. • Explain the decision-making process. • Explain what is given up by making a choice.	**The adult will:** • Provide students with multiple choices and demonstrate how choosing one means not getting the other. • Model decision-making process with "think-a-louds" and encourage its use. • Support students in accepting the consequences of their choices. • Create opportunities to practice spending and saving pretend money in the classroom. • Examine reasons people choose to spend money certain ways.

D. INCENTIVES AND CHOICE

Standard	Concepts and Competencies	Supportive Practices
6.1 2.D **Identify a choice based on community interest.**	**The learner will:** • Describe how wants and needs influence choice. • Make a choice or cast a vote in a community situation. • Research and share choices communities make. • Explain why a community would make a given choice (e.g., deciding between building a park or a community center).	**The adult will:** • Provide opportunities for children to make decisions and choices. • Model decision-making thought process (think-a-louds) and encourage its use. • Engage children in discussions about making choices. • Support students in accepting the consequences of their choices. • Share examples of choices communities face including local issues. • Invite a mayor, council member, township supervisor, or urban planner to talk to the class about choices made.

6.2 MARKETS AND ECONOMIC SYSTEMS

A. GOODS AND SERVICES

Standard	Concepts and Competencies	Supportive Practices
6.2 2.A **Identify goods, services, consumers, and producers in the local community.**	**The learner will:** • Identify and define goods used in the community. • Identify and define consumers as people who use goods. • Sort and classify goods and services. • Show how goods, services, consumers, and producers are interconnected through the development of an interdependence web graphic organizer. • Examine products to determine what company made them. • Write about the role as consumers of goods and services.	**The adult will:** • Provide examples of goods. • Support students in listing goods used (e.g., classroom, home, business). • Invite local businessowners to visit the class (e.g., share what goods and/or services are produced by their business). • Provide a field trip (e.g., real or virtual) to a grocery store, mall, or community and allow students to identify goods and services and their consumers and producers.

B. MARKET COMPETITION

Standard	Concepts and Competencies	Supportive Practices
6.2 2.B **Differentiate between markets and competition.**	**The learner will:** • Identify similar goods and services in the market and how they compete for consumers. • Give examples of markets in which buyers and sellers meet face-to-face (e.g., grocery store, farmer's market) and other markets in which buyers and sellers never meet (e.g., online).	**The adult will:** • Provide instruction on how goods and services are available to consumers in a market. • Explain competition is when there are identical goods and services offered by multiple vendors. • Provide examples of marketplaces in which buyers and consumers meet face-to-face, and others that never meet. • Prompt students to identify companies and then their competition. • Encourage students to consider the producers of goods they use.

C. ADVERTISING AND MEDIA

Standard	Concepts and Competencies	Supportive Practices
6.2 2.C **Define personal choice as related to buying an item.**	**The learner will:** • Describe the decision-making process involved in making a personal choice with limited resources available. • Describe why people make different buying choices (e.g., personal interests). • Make choices about how to spend money given a specific budget. • Describe ways in which families save and spend money.	**The adult will:** • Create opportunities to practice spending pretend money in the classroom and make choices based on personal preferences. • Model decision-making thought process (think-a-louds) and encourage its use.

D. PRICE DETERMINATION

Standard	Concepts and Competencies	Supportive Practices
6.2 2.D **Explain how demand for a consumer good impacts price.**	**The learner will:** • Identify items that are in high demand (e.g., certain game, shoe). • Explain how higher demand impacts the price of an item.	**The adult will:** Create a classroom marketplace where students must pay for supplies for a project using pretend money or tokens. Vary the number of items available to increase their demand (e.g., have fewer green and blue crayons). • Show advertisements for items and ask students whether they are in high demand.

E. ECONOMIC HEALTH

Standard	Concepts and Competencies	Supportive Practices
6.2 2.E **Identify the impact on a community when a business closes.**	**The learner will:** • Identify businesses in the community and describe the impact if one or more were to close.	**The adult will:** • Provide opportunities to research businesses within the local community. • Facilitate discussions on the benefits or drawbacks of various businesses within the local community. • Provide descriptions of various businesses in the community. • Discuss any new or recent businesses and how they benefit the community. • Brainstorm how the closing of a business impacts the local community.

F. PRIVATE ECONOMIC INSTITUTIONS

Standard	Concepts and Competencies	Supportive Practices
6.2 2.F **Describe the role of financial institutions as related to consumers' financial needs.**	**The learner will:** • Describe how money is saved at home. • Compare places to keep money safe (e.g., piggy bank, wallet, bank, credit union). • Identify basic services provided by financial institutions (e.g., checking and savings accounts, loans, safety deposit boxes).	**The adult will:** • Introduce and discuss services provided by financial institutions. • Create a classroom bank and allow students to keep play money earned in class in the bank. • Invite a speaker from a bank or credit union to visit the class and discuss the services offered.

G. ECONOMIC SYSTEMS

Standard	Concepts and Competencies	Supportive Practices
6.2 2.G **Identify examples of an economic system.**	**The learner will:** • Explore ways of distributing items (e.g., command—teacher or some other authority decides; equal shares—everyone gets certain amount; contest—play a game or flip a coin to decide; lottery—pick a number; majority rule—take a vote).	**The adult will:** • Provide opportunities for items or time to be distributed amongst students. • Facilitate discussions on the pros and cons of each system. • Provide texts exploring different world economic systems.

6.3 FUNCTIONS OF GOVERNMENT

A. GOODS AND SERVICES

Standard	Concepts and Competencies	Supportive Practices
6.3 2.A **Identify examples of goods and services provided by the private sector.**	**The learner will:** • Research businesses that are part of the "private sector." • Identify goods or services provided by specific businesses. • Describe goods and services consumed (e.g., self, family, school).	**The adult will:** • Provide a list/or logos of local businesses for students to describe and compare the goods and services provided by each. • Introduce and define "private sector." (e.g., the part of the economy that is not state-controlled, and is run by individuals and companies for profit). • Describe and discuss familiar businesses. • Create a KWL chart with information about businesses. • Use visual graphics to compare and contrast goods and services provided by businesses.

C. TAXATION

Standard	Concepts and Competencies	Supportive Practices
6.3 2.C **Define taxes and who pays them.**	**The learner will:** • Research and identify items that are taxed at the state level (e.g., toys, electronics, gas). • Identify items (e.g., home, school) that are taxed. • Identify different ways people pay taxes. • Identify how taxes support goods and services in the community.	**The adult will:** • Introduce and define "tax." (e.g., a contribution for the support of a government required of persons, groups, or businesses). • Explain where the money comes from to pay for the services that are taxed. • Give examples of the various taxes people pay in the community, state, and nation. • Facilitate discussions on how taxes are collected (e.g., point of sale, income). • Talk about the benefits of paying taxes (e.g., schools, police, roads)

D. GOVERNMENT'S ROLE IN INTERNATIONAL TRADE

Standard	Concepts and Competencies	Supportive Practices
6.3 2.D **Identify products produced outside the United States.**	**The learner will:** • Identify the "Made in America" logo. • Identify products produced in the United States. • Research how to determine a product's country of origin.	**The adult will:** • Encourage students to examine items at home or in the classroom and brainstorm their country of origin. • List items and research the countries in which they were made. • Create a graph showing the number of items students found made in various countries. • Color a map showing the countries items come from. • Discuss why certain items cannot be produced in the United States (e.g., due to a lack of certain natural resources).

6.4 ECONOMIC INDEPENDENCE

A. SPECIALIZATION

Standard	Concepts and Competencies	Supportive Practices
6.4 2.A **Identify local examples of specialization of work.**	**The learner will:** • Describe how people in the community perform specialized services (e.g., work done by postal workers is very different from bankers). • Identify stores that specialize in selling certain goods. • Compare stores that specialize in selling certain goods or services (e.g., video game store versus department store).	**The adult will:** • Provide a list of local businesses for students to describe and compare the goods and services provided by each. • Share examples of local businesses that specialize in a specific good.

C. MULTINATIONAL AND NON-GOVERNMENTAL ORGANIZATIONS

Standard	Concepts and Competencies	Supportive Practices
6.4 2.C **Identify products that come from many different countries.**	**The learner will:** • Read labels on products and see where items are made. • Describe why certain products cannot be produced locally (e.g., geographic location, climate, culture). • Identify products produced in the United States. • Describe how to determine a product's country of origin.	**The adult will:** • Encourage students to examine items at home or in the classroom and determine their country of origin. • Collect items from school or home that were made in different countries. • Provide maps, globes, or pictures to illustrate and make connections to countries where goods and services originate. • Read stories about items that come from places around the world.

D. FACTORS CONTRIBUTING TO ECONOMIC INTERDEPENDENCE

Standard	Concepts and Competencies	Supportive Practices
6.4 2.D **Identify buyers and sellers and how their wants and needs are addressed.**	**The learner will:** • Make connections between the needs and wants of buyers and the choices producers make in meeting their wants and needs. • Identify a want or need people have and brainstorm a new invention or service to help meet the need. • Explain how inventors and entrepreneurs create goods and services that meet people's needs and wants. • Describe how famous inventors and entrepreneurs met people's needs or wants (e.g., Albert Einstein, Milton Hershey).	**The adult will:** • Use cause-and-effect charts to explain how consumer needs and wants influence the production of goods and services. • Discuss businesses in the area and why some get more economic activity than others. • Read fiction and nonfiction books about entrepreneurs and inventors. • Identify where the goods or services would come from to meet the want or need. • Provide opportunities to brainstorm and create a new invention to help a need or want.

6.5 INCOME, PROFIT, AND WEALTH

A. FACTORS INFLUENCING WAGES

Standard	Concepts and Competencies	Supportive Practices
6.5 2.A **Explain how money earned by individuals is used to meet needs and wants.**	**The learner will:** • Make the connection between earning and spending money. • List reasons people work. • Understand that money cannot be spent until it is earned. • Describe ways individuals use money that is earned to buy things they want and need. • Prioritize purchases based on the level of need or want. • Discuss/write about ways they would spend money if earned.	**The adult will:** • Discuss with students how wages are money earned by producing a good or service. • Discuss how wages provide income for families to use to meet their wants and needs. • Reinforce the connection between earning, spending, and saving money. • Create cause-and-effect charts showing the relationship between earning and spending money. • Provide opportunities to explore how much work someone would need to do to earn enough money to purchase a want.

B. LABOR PRODUCTIVITY

Standard	Concepts and Competencies	Supportive Practices
6.5 2.B **Describe how different job skills impact earnings.**	**The learner will:** • Research and report upon a profession of interest. • Participate in discussions on the connection of skill sets and income level (e.g., higher education can equate to higher income).	**The adult will:** Provide opportunities to research a job interest (e.g., write about and discuss steps needed to reach a goal). Provide materials and opportunities for students to research responsibilities, education levels, and average incomes for different jobs. Provide a variety of texts that support varying job types.

C. TYPES OF BUSINESSES

Standard	Concepts and Competencies	Supportive Practices
6.5 2.C **Describe the roles of local businesses.**	**The learner will:** • Identify local businesses. • Identify goods and services provided by local businesses. • Identify roles local businesses play in the community. • Categorize local businesses by their industry (e.g., retail, travel, health services).	**The adult will:** Invite a variety of businesses as guest speakers (e.g., talk about jobs, roles, purposes). • Use a map of the community and identify local businesses. • Review a phone book or online directory to see categories of businesses. • Provide texts on various jobs found locally. • Facilitate discussions on how local businesses benefit the community.

D. PROFITS AND LOSSES

Standard	Concepts and Competencies	Supportive Practices
6.5 2.D **Describe money-saving behaviors.**	**The learner will:** • Describe factors that influence whether or not people save money and how much. • Brainstorm what is needed to save money (e.g., patience, time, earnings). • Identify short- and long-term savings goals. • Discuss/write about a personal savings goal.	**The adult will:** • Read and discuss books with characters that save money towards a goal. • Brainstorm reasons people save money. • Categorize savings goals as short-term or long-term. • Discuss the importance of setting realistic goals and ways people can track their progress towards a goal (e.g., graph, chart). • Provide opportunities to save (e.g., token system within the classroom).

E. DISTRIBUTION OF WEALTH

Standard	Concepts and Competencies	Supportive Practices
6.5 2.E **Describe the qualities that may be necessary to complete a task.**	**The learner will:** • Choose a task and identify what is needed to complete. • Identify character traits that make people likely to be able to complete certain tasks. • Discuss ways their personal qualities make them well suited to complete certain tasks.	**The adult will:** Provide opportunities to complete a task and identify what is needed to do so. Discuss the importance of positive character traits (e.g., perseverance, organization) on one's ability to perform tasks. Talk about how some jobs require special talents or skills.

F. ENTREPRENEURSHIP

Standard	Concepts and Competencies	Supportive Practices
6.5 2.F **Explain the responsibilities of a business owner.**	**The learner will:** • Explain the term entrepreneurship. • Make connections of an entrepreneur to business owner. • Identify the characteristics of an entrepreneur (e.g., risk taker, leader, creativity). • Name famous entrepreneurs and the businesses they are known for starting (e.g., Bill Gates, Milton Hershey).	**The adult will:** • Explain the roles and responsibilities of businessowners. • Discuss and/or read stories about famous entrepreneurs. • Make connections between people who own and run businesses and principals or superintendents in the school or district.

G. COSTS AND BENEFITS OF SAVING

Standard	Concepts and Competencies	Supportive Practices
6.5 2.G **Identify how saving for a purchase occurs over time.**	**The learner will:** • Explain the connection between earning and saving money. • Describe how tracking savings over time towards a goal helps people to continue saving.	**The adult will:** • Facilitate discussions on how people save money towards a goal and track progress. • Share long-term savings (e.g., saving money for college or a home) and why it is necessary to do this in small steps over time. • Engage students in a class saving event or collection of items over time (e.g., make a goal and track the progress to meeting the goal).

H. INTEREST RATES

Standard	Concepts and Competencies	Supportive Practices
6.5 2.H **Describe why people save money in the local bank.**	**The learner will:** • Identify how money is saved at home (e.g., piggy bank). • Describe how some places are safer than others to save money. • Explain interest is how banks pay you for keeping money with them. • Identify the characteristics of a bank or credit union that makes it a safe place to keep money.	**The adult will:** • Invite someone from a bank or credit union to discuss how they keep people's money safe. • Provide opportunities for students to visit a bank or credit union.

Geography

BIG IDEA: Location can be represented using a variety of tools.
ESSENTIAL QUESTIONS: What tools help me to understand the location of places and things? How can I represent the location of places and things?

7.1 BASIC GEOGRAPHIC LITERACY

A. GEOGRAPHIC TOOLS

Standard	Concepts and Competencies	Supportive Practices
7.1 2.A **Identify how basic geographic tools are used to organize information.**	**The learner will:** • Recognize that a map contains specific elements (e.g., title, symbols, legend/map key, grids, compass rose, scale). • Explain the purpose of the legend/map key. • Explain how scale is used to measure distance on a map. • Use a grid to locate places on a map.	**The adult will:** • Identify and describe the purpose of the following on a map—title, symbols, legend/map key, grids, compass rose, and scale. • Provide opportunities to work with various kinds of maps (e.g., road map, physical map, political map, thematic maps). • Provide activities that reinforce using a grid to find places on a map.

B. LOCATION OF PLACES AND REGIONS

Standard	Concepts and Competencies	Supportive Practices
7.1 2.B **Describe regions in geographic reference using physical features.**	**The learner will:** • Identify and interpret the features of a map. • Label the seven continents and four oceans on a map.	**The adult will:** • Model and give examples of spatial directions for location identification. • Provide maps for interpretation of location in the state, nation, and world. • Read nonfiction books about the continents and oceans.

7.2 PHYSICAL CHARACTERISTICS OF PLACES AND REGIONS

A. PHYSICAL CHARACTERISTICS

Standard	Concepts and Competencies	Supportive Practices
7.2 2.A **Identify the physical characteristics of places.**	**The learner will:** • Identify the physical features of given places or regions. • Define the term landform. • Identify and describe various landforms (e.g., ocean, river, lake , island, peninsula, mountain, desert, plain). • Create a model showing landforms or create a book with descriptions and pictures of landforms.	**The adult will:** • Define natural physical characteristics and give examples. • Define manmade physical characteristics and give examples. • Provide photographs and descriptions depicting landforms (e.g., ocean, river, lake, island, peninsula, mountain, desert, plain) • Read fiction and/or nonfiction books about various landform features.

B. PHYSICAL PROCESSES

Standard	Concepts and Competencies	Supportive Practices
7.2 2.B **Identify the basic physical processes that affect the physical characteristics of regions.**	**The learner will:** • Explain why various towns and cities of the state or region are located where they are. • Identify and describe the effects of natural disasters (e.g., tornadoes, blizzards, hurricanes, tsunamis, floods, earthquakes) on the environment. • Create a project on natural disasters (e.g., tornadoes, blizzards, hurricanes, tsunamis, floods, and earthquakes).	**The adult will:** • Read fiction and/or nonfiction texts about the effects of natural disasters (e.g., tornadoes, blizzards, hurricanes, tsunamis, floods, earthquakes) on the environment. • Provide an opportunity for research on natural disasters.

7.3 HUMAN CHARACTERISTICS OF PLACES AND REGIONS

A. HUMAN CHARACTERISTICS

Standard	Concepts and Competencies	Supportive Practices
7.3 2.A **Identify the effect of local geography on the residents of the region (e.g., food, clothing, industry, trade, types of shelter, etc.).**	**The learner will:** • Explain the location of where people work, live, or play in the region or community. • Explain how the local geography impacts decisions in their daily life. • Identify the type of community and give examples why it is a rural, urban, or suburban. • Compare and contrast the three kinds of communities. • Participate in discussions on how the geography of the type of community affects its residents (e.g., rural—further to travel for services, urban—not much land).	**The adult will:** • Provide materials and resources for students to use in determining where people live, work, and play. • Provide explanation for why various businesses, homes, or parks are located where they are geographically. • Provide examples of suburban, rural, and urban communities. • Create a vocabulary chart for suburban, rural, and urban characteristics. • View or read fiction and/or nonfiction books that depict urban, rural, and suburban communities. • Facilitate discussions on how the geography of the type of community effects its residents (e.g., rural—further to travel for services; urban—not much land).

7.4 INTERACTIONS BETWEEN PEOPLE AND THE ENVIRONMENT

A. IMPACT OF PHYSICAL SYSTEMS ON PEOPLE

Standard	Concepts and Competencies	Supportive Practices
7.4 2.A **Identify how environmental changes can impact people.**	**The learner will:** • Describe the various things people do to impact the environment (e.g., positively and negatively). • Research how the environment can impact people (e.g., water pollution).	**The adult will:** • Identify how people have created structures to accommodate or adapt the physical features for business, recreation, or residential purposes. • Discuss relevant topics during Earth Day (e.g., protecting air, water, land; using natural resources wisely). • Read stories that relate to the environment. • Provide opportunities to research how the environment affects people (e.g., positively and negatively).

History

BIG IDEA: Past experiences and ideas help us make sense of the world.
ESSENTIAL QUESTIONS: In what ways can events be sequenced? How do I use past experiences and events to understand the present?

8.1 HISTORICAL ANALYSIS AND SKILLS DEVELOPMENT

A. CONTINUITY AND CHANGE OVER TIME

Standard	Concepts and Competencies	Supportive Practices
8.1 2.A **Read and interpret information on simple timelines.**	**The learner will:** • Create and use a timeline to record events over time. • Create a timeline of own life events (e.g., use pictures when appropriate). • Answer questions based on information from a timeline.	**The adult will:** • Create a variety of timelines of events over various lengths of time. • Reference timelines for tasks accomplished or in planning tasks.

B. FACT/OPINION AND POINTS OF VIEW

Standard	Concepts and Competencies	Supportive Practices
8.1 2.B **Identify documents relating to an event.**	**The learner will:** • Identify the source of information relating to an event or occurrence. • Identify if the source was a primary or secondary document. • Research documents relating to an event. • Participate in discussions on the documents (e.g., what is fact versus opinion).	**The adult will:** • Provide various sources of information concerning an event or occurrence from eyewitness to second and third accounts. • Model use of primary documents for original information or interpretation of events. • Provide documents (e.g., map, newspaper headline, photograph, artifact) that relate to a story.

C. RESEARCH

Standard	Concepts and Competencies	Supportive Practices
8.1 2.C **Apply sources of historical information.**	**The learner will:** • Use primary and secondary documents/ informational text or oral history to convey information of event(s) or happenings. • Interview an older relative or older family friend to learn about their childhood. • Create a Venn diagram comparing their childhood with the person they interviewed. • Research a famous American. • Create a visual presentation (e.g., bio poem, bio bag, poster).	**The adult will:** • Provide opportunities for students to use various documents (e.g., artifacts, informational texts, oral histories) to convey information on various events, actions, or happenings from the immediate or historic perspective. • Brainstorm questions with students to be used during the interview. • Model how to create a Venn diagram comparing own childhood with the class's childhood. • Encourage students to share own history (e.g., with peer, class).

8.2 PENNSYLVANIA HISTORY

A. CONTRIBUTIONS OF INDIVIDUALS AND GROUPS (PA)

Standard	Concepts and Competencies	Supportive Practices
8.2 2.A **Identify historical figures in the local community.**	**The learner will:** • Identify groups and individuals who contributed to the founding and building of the local community. • Research and share a historical figure from the community. • Identify and discuss the contribution (e.g., how did the community benefit).	**The adult will:** • Provide information on the groups and individuals necessary to build a community. • Use local resources to identify groups and individuals who were involved in building the community over time. • Model researching local historical figures. • Introduce PAHistory.org. • Invite a local historical figure as a guest speaker. • Provide texts on local historical figures.

B. HISTORICAL DOCUMENTS, ARTIFACTS, AND PLACES (PA)

Standard	Concepts and Competencies	Supportive Practices
8.2 2.B **Identify important buildings, statues, and monuments associated with the state's history.**	**The learner will:** • Research and identify important buildings, statues, and monuments in Pennsylvania. • Share research findings with peers (e.g., orally, pictorially).	**The adult will:** • Collect and display photographs, artifacts, documents, and items from events in the community or state. • Explain how the collection of items from events documents a story over time. • Provide opportunities to research and identify important buildings, statues, and monuments in Pennsylvania. • Ask students to think about important places in their community and state that they have visited. • Create a visual of Then and Now pictures of Pennsylvania. • Use PAHistory.org for assistance.

C. IMPACT OF CONTINUITY AND CHANGE ON PA HISTORY

Standard	Concepts and Competencies	Supportive Practices
8.2 2.C **Identify how commerce and industry and social organizations have changed over time in Pennsylvania.**	**The learner will:** • Identify local businesses, communities, and organizations that no longer exist in Pennsylvania. • Identify local businesses, communities, and organizations that are still in existence from a long time ago. • Research and identify major industries that developed in Pennsylvania (e.g., steel; coal; food processing—Heinz; candy—Hershey). • Share research findings (e.g., peer, class). • Create a visual of Then and Now of transportation in Pennsylvania. • Research and identify social organizations in Pennsylvania (e.g., Masons, Kiwanis).	**The adult will:** • Provide materials and resources which support continuity and change over time. • Define commerce (e.g., buying and selling of goods on a large scale involving transportation from place to place). • Provide pictures of transportation that was used in Pennsylvania (e.g., steamboats, canal boats, Conestoga wagons, cargo ships, cars, trains). • Define industry and give examples of industries in Pennsylvania. • Provide opportunities to research and share (e.g., peers, class).

D. CONFLICT AND COOPERATION (PA)

Standard	Concepts and Competencies	Supportive Practices
8.2 2.D **Identify how conflict is impacted by ethnicity and race, working conditions, immigration, military conflict, and economics.**	**The learner will:** • Identify how classroom conditions impact collaboration versus conflict (e.g., encouragement versus competition, enough materials). • Research conflict (e.g., local, research, state) and discuss possible influences.	**The adult will:** • Provide instruction in conflict resolution strategies. • Provide support as children work together to resolve a problem. • Use questions with students to enhance and expand children's thinking about problems. • Define the terms conflict and cooperation. • Read easy picture book biographies about people who have overcome conflict or pushed for cooperation. • Provide opportunities to research and identify conflict (e.g., local, regional, state)

8.3 UNITED STATES HISTORY

A. CONTRIBUTIONS OF INDIVIDUALS AND GROUPS (U.S.)

Standard	Concepts and Competencies	Supportive Practices
8.3 2.A **Identify groups and organizations and their contributions to the United States.**	**The learner will:** • Identify groups and individuals who contributed to the founding and building of the United States. • Research important individuals in United States history and their contributions (e.g., textbooks, the library, computers). • Make a chart or develop a written text about an individual's or individuals' contribution to United States history. • Complete a graphic organizer identifying major contributions of a group or organization.	**The adult will:** • Provide information on the groups and individuals who built America. • Use local resources to identify groups and individuals who were involved in building the community over time and their contribution to America. • Lead a discussion and research activity about some important groups and organizations in United States history. • Provide simple biographies about important groups in United States history. • Model the research process.

B. HISTORICAL DOCUMENTS, ARTIFACTS, AND PLACES (U.S.)

Standard	Concepts and Competencies	Supportive Practices
8.3 2.B **Identify American artifacts and their importance in American history.**	**The learner will:** • Use resource materials to identify American artifacts. • Create a model, picture, drawing, or other representation of a selected artifact. • Complete an activity matching a picture of the artifact with its historical significance (e.g., picture of the White House—home of the President). • Explore symbols of the United States.	**The adult will:** • Lead activities demonstrating how the monument/artifact/landmark serves as a reminder of the event or group or individual being celebrated in building America. • Define the term artifact. • Provide examples of artifacts for students to examine. • Show examples of artifacts relating to American history (e.g., Statue of Liberty, Mt. Rushmore, U.S. flag). • Provide text on important American artifacts.

C. IMPACT OF CONTINUITY AND CHANGE ON U.S. HISTORY

Standard	Concepts and Competencies	Supportive Practices
8.3 2.C **Identify facts related to how different people describe the same event at different time periods.**	**The learner will:** • Describe a classroom event. • Compare and contrast own description of an event to a peer's description of that same event. • Participate in discussions on how people perceive events differently (e.g., based on prior knowledge, experience, culture). • Give examples of change over time.	**The adult will:** • Dialog with students concerning events that happen over time. • Assist students in identifying the small or large changes that happened over time in America. • Provide opportunities to explore different perspectives. • Provide opportunities to compare descriptions of the same event for two different time periods (e.g., 4th of July 100 years ago to present).

D. CONFLICT AND COOPERATION (U.S.)

Standard	Concepts and Competencies	Supportive Practices
8.3 2.D **Demonstrate an understanding of how different groups describe the same event or situation.**	**The learner will:** • Describe a classroom event. • Compare and contrast own description of an event to a peer's description of that same event. • Participate in discussions on how people perceive events differently (e.g., based on prior knowledge, experience, culture).	**The adult will:** • Provide opportunities to explore different perspectives. • Provide opportunities to compare descriptions of the same event from two different groups.

8.4 WORLD HISTORY

A. CONTRIBUTIONS OF INDIVIDUALS AND GROUPS (WORLD)

Standard	Concepts and Competencies	Supportive Practices
8.4 2.A **Explain why cultures have commemorations and remembrances.**	**The learner will:** • Celebrate events or successes in a variety of ways. • Identify holidays and celebrations from around the world. • Identify American commemorations and remembrances. • Research an American commemoration and discuss its meaning (e.g., peers or with classroom).	**The adult will:** • Celebrate international, national, state, and local holidays and events in the classroom and school community. • Define commemoration. • Provide opportunities to research American commemorations. • Read books about significant political and cultural contributors to world history (e.g., Columbus).

B. HISTORICAL DOCUMENTS, ARTIFACTS, AND SITES (WORLD)

Standard	Concepts and Competencies	Supportive Practices
8.4 2.B **Explain the significance of historical documents on world history.**	**The learner will:** • Research and identify historical documents in world history. • Describe why the documents are important. • Brainstorm how life could be different if the documents were never written.	**The adult will:** • Lead activities demonstrating how the monument/artifact/landmark serves as a reminder of the event or group or individual being celebrated. • List and provide important historical documents. • Facilitate discussions on the importance of these documents.

C. IMPACT OF CONTINUITY AND CHANGE ON WORLD HISTORY

Standard	Concepts and Competencies	Supportive Practices
8.4 2.C **Identify how cultures have commemorations and remembrances.**	**The learner will:** • Identify the variety of reasons and ways groups and individuals from around the world celebrate. • Compare and contrast cultural commemorations on the same event.	**The adult will:** • Celebrate international, national, state, and local holidays and events in the classroom and school community in a variety of ways. • Read books about various cultural celebrations. • Compare cultural commemorations (e.g., How is Christmas celebrated around the world?).

D. CONFLICT AND COOPERATION (WORLD)

Standard	Concepts and Competencies	Supportive Practices
8.4 2.D **Identify global issues that require cooperation among nations.**	**The learner will:** • Research and identify past and current global issues. • Explain why it is important for nations to get along and cooperate on these issues. • Brainstorm consequences of nations not cooperating.	**The adult will:** • Select a global issue that 2nd grade students could understand (e.g., pollution, shrinking of the rainforest). • Read a book that relates to the global issue. • Identify various organizations that promote cooperation (e.g., United Nations, Red Cross, Peace Corps). • Invite a member from the Red Cross to serve as a guest speaker.

Social Studies Thinking Glossary

CIVICS AND GOVERNMENT

Authority—Right to control or direct the actions of others, legitimized by law, morality, custom, or consent.

Citizen—Member of a political society who therefore owes allegiance to and is entitled to protection by and from the government.

Civic Rights—The rights belonging to an individual by virtue of citizenship.

Community—A group of people who share a common social, historical, regional, or cultural heritage.

Conflict—Inherent incompatibility between two or more people or two or more choices.

Conflict Resolution—Process by which issues arising from a disagreement or clash between ideas, principles, or people are settled.

Country—The acceptable political boundaries or borders recognized throughout the world.

Decision-Making Process—An organized approach to making choices.

Government—Institutions and procedures through which a territory and its people are ruled.

Law—The system of rules that a particular country or community recognizes as regulating the actions of its members.

Leadership—State or condition of one who guides or governs.

Public Service—Community service; a service that is performed for the benefit of the public.

State—A commonwealth; a nation; a civil power.

ECONOMICS

Community Helpers—Any group or individual who plays a role in the community such as doctors, nurses, dentists, teachers, parents, firefighters, police officers, trash collectors, animal control officers.

Competition—The rivalry among people and/or business firms for resources and/or consumers.

Consumer—One who buys or rents goods or services and uses them.

Cost—What is given up when a choice is made; monetary and/or non-monetary.

Demand—The different quantities of a resource, good, or service that potential buyers are willing and able to purchase at various prices during a specific time period.

Goods—Objects that can satisfy people's wants.

Household—The group of people living together under one roof; a group of individuals whose economic decision-making is interrelated.

Money—A medium of exchange.

Natural Resource—Anything found in nature that can be used to produce a product (e.g., land, water, coal)

Price—The amount people pay in exchange for a particular good or service.

Producer—One who makes goods.

Profit—Total revenue minus total costs.

Scarcity—A small and inadequate amount.

Services—Actions that are valued by others.

Supply—The different quantities of a resource, good, or service that potential sellers are willing and able to sell at various prices during a specific time period.

Wage—A fixed regular payment, typically paid on a daily or weekly basis by an employer.

Wants—Desires that can be satisfied by consuming goods, services, or leisure activities.

GEOGRAPHY

Climate—Long-term patterns and trends in weather elements and atmospheric conditions.

Culture—The way of life of a group of people, including customs, beliefs, arts, institutions, and worldview. Culture is acquired through many means and is always changing.

Environment—Everything in and on earth's surface and its atmosphere within which organisms, communities, or objects exist.

Geographic Tools—Tools used by geographers to organize and interpret information. Tools range from the very simple (maps and globes) to the complex (Geographic Information Systems, population pyramids, satellite images, and climate graphs).

Place—An area with distinctive human and physical characteristics; these characteristics give it meaning and character and distinguish it from other areas.

Resource—An aspect of the physical environment that people value and use to meet a need for fuel, food, industrial product, or something else of value.

HISTORY

Document—A formal piece of writing that provides information or acts as a record of events or arrangements.

Media Sources—Various forms of mass communication such as television, radio, magazines, newspapers, and Internet.

Creative Thinking and Expression

Communicating through the Arts

9.1.M Production and Performance – Music and Movement

9.1.D Production and Performance – Dramatic and Performance Play

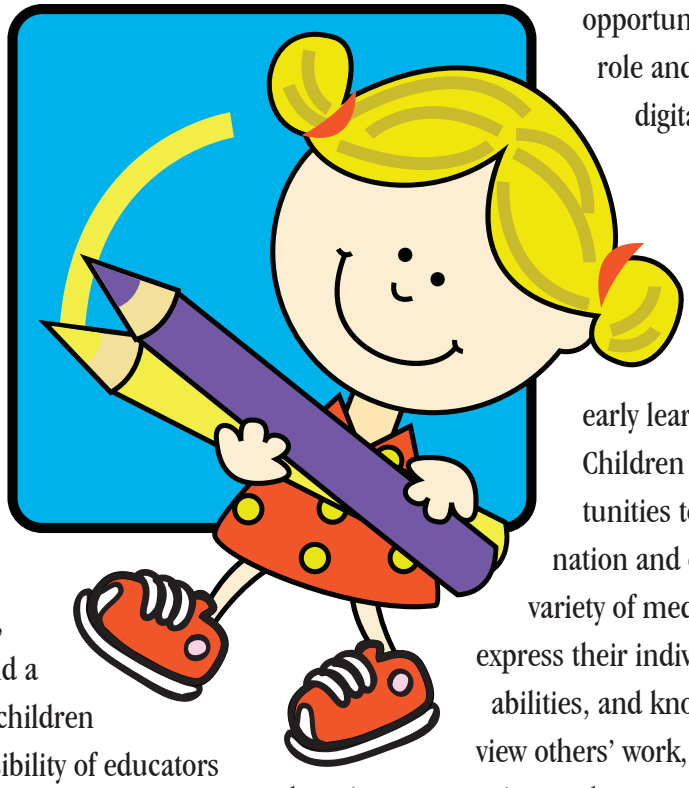
9.1.V Production and Performance – Visual Arts

9.2 Historical and Cultural Context of Works of Art

9.3 Critical Response to Works of Art

9.4 Aesthetic Response to Works of Art

Digital Media Literacy



Media literacy includes competencies that enable people to analyze, evaluate, and create messages in a variety of forms. Children today are growing up in a digital age and are faced with increasingly new types of digital media and technology. Some current examples include electronic tablets, computers, digital cameras, video recorders, and a variety of assistive technologies for children with special needs. It is the responsibility of educators and families to understand that digital media can be a valuable instructional tool when used appropriately. Appropriate media use should not replace concrete experiences and personal interactions, but can be used to extend play and interactions. For example, use of video conferences can be used during the school day to connect a parent with his/her child. Educators and families are encouraged to engage in professional development opportunities to understand the role and instructional uses of digital media.

Creative thinking and expression is an important component of children's early learning experiences. Children who are given opportunities to develop their imagination and creativity through a variety of media are learning to express their individuality in interests, abilities, and knowledge. When they view others' work, children are also learning to appreciate and respect differences in culture and viewpoint. Creative expression influences children's growing competence as creative problem-solvers and provides insight about their world around them. Teachers support creative learning by providing concrete, process-oriented play experiences that encourage children to use their imagination and to experiment with new ideas and materials.

9.1.M Production and Performance – Music and Movement

BIG IDEA: Music can be used to express and initiate aesthetic and physical responses.
ESSENTIAL QUESTION: How can I express my thoughts, feelings, and ideas through music and movement?

A. ELEMENTS AND PRINCIPLES

Standard	Concepts and Competencies	Supportive Practices
9.1.M 2.A **Know and use basic elements and principles of music and movement.**	**The learner will:** • Explore rhythms in different forms of music and dance. • Explore rhythm instruments. • Participate in music and movement activities. • Participate in group movement activities demonstrating an awareness of shared space. • Demonstrate an understanding of "fast," "slow," "loud," and "soft."	**The adult will:** • Explicitly use vocabulary for elements and principles of music and movement (e.g., rhythm, space, tempo, pitch). • Model appropriate use of instruments. • Call attention to the changes in music as students are listening. • Provide experiences through large and small group activities that focus on movement elements and principles. • Include music vocabulary (e.g., high/low, up/down, fast/slow, short/long).

B. DEMONSTRATION

Standard	Concepts and Competencies	Supportive Practices
9.1.M 2.B **Create and perform different forms of music and dance.**	**The learner will:** • Participate in music and movement activities. • Create and perform an individual or group music or movement piece. • Sing familiar songs, chants, and finger plays. • Express self through movement while listening to different types of music. • Discuss music and movement experiences.	**The adult will:** • Provide a variety of materials to use in creating and performing music and dance. • Assure a safe, welcoming environment where students feel encouraged to create and perform music and dance. • Allow students to experiment with musical instruments and voices to create new sounds. • Play a variety of music types for listening and participation. • Introduce students to a variety of musicals, and rhythms. • Encourage students to discuss experiences. • Provide large and small group activities that focus on movement and music participation.

E. REPRESENTATION

Standard	Concepts and Competencies	Supportive Practices
9.1.M 2.E **Use imagination and creativity to design and perform music and dance.**	**The learner will:** • Initiate music and movement activities. • Improvise songs and rhythmic patterns. • Change words or tone of familiar songs to make new songs. • Use body to represent form in space. • Work with partner to represent form in space. • Use imagination and creativity to design and perform music and dance. • Incorporate a variety of materials in performance to enhance creativity.	**The adult will:** Create opportunities to express through a variety of music forms, dance, or body movements. • Encourage students to be creative during singing by changing words and song endings. • Share stories that students can represent using their bodies. • Provide props to use when dancing (e.g., ribbons, hoops, sticks). • Demonstrate movement using time, space, and locomotion. • Provide various objects that can be used to represent sound (e.g., wooden bowls, metal spoons). • Provide space for performing improvised dance. • Discuss and model appropriate audience behavior.

J. TECHNOLOGIES

Standard	Concepts and Competencies	Supportive Practices
9.1.M 2.J **Use a variety of technologies for producing or performing works of art.**	**The learner will:** • Explore musical instruments. • Use instruments to accompany music. • Use instruments to demonstrate the melody of a song. • Use age-appropriate digital media applications to create music. • Use a variety of props to enhance movement activities (e.g., scarves, beanbags, ribbons). • Use recording devices (e.g., voice recorder, video recorder) to capture music and/or movement performances.	**The adult will:** Provide guidance during digital media application exploration. Demonstrate use of technologies in music. • Provide opportunities to explore a variety of musical instruments. • Provide a variety of props for musical expression and movement. • Engage a local expert (e.g., high school music student, college professor, musician, dance instructor) as a guest speaker.

9.1.D Production and Performance – Dramatic and Performance Play

BIG IDEA: Dramatic and performance play is a way to act out reality and fantasy.
ESSENTIAL QUESTION: How can I express my thoughts, feelings, and ideas through dramatic play?

B. DEMONSTRATION

Standard	Concepts and Competencies	Supportive Practices
9.1.D 2.B **Create and perform plays and productions.**	**The learner will:** • Create various voice inflections and facial expressions in dramatic role-play. • Change voice inflections when recreating various characters. • Direct peers or follow peers' instructions about dramatic play schemes. • Use vocabulary to discuss play activities (e.g., character, role, setting, story).	**The adult will:** • Provide props and costumes associated with favorite stories. • Participate in dramatic play events as the audience. • Model appropriate audience behavior. • Provide opportunities for dramatic play (e.g., acting out a story, performing a short play for a special event). • Use appropriate vocabulary as students create plays and performances.

E. REPRESENTATION

Standard	Concepts and Competencies	Supportive Practices
9.1.D 2.E **Identify the difference between a play designed to teach the facts and one designed to communicate a story, emotion, or theme.**	**The learner will:** • Use nonconforming objects to create representations of real-life objects or activities. • Distinguish between drama based on facts or fiction. • Identify the main idea of a story, emotion, or theme involved in a play. • Represent fantasy and real-life experiences through dramatic play. • Imitate roles of people, animals, or objects observed in life experiences. • Use props and costumes during dramatic play. • Create props from available materials. • Use appropriate tone, actions, and speech to represent characters, setting, and plot in a play.	**The adult will:** Create situations where students can role-play familiar roles or situations (e.g., home living, grocery store, restaurants). Ask open-ended questions to extend students' knowledge of the meanings of various types of plays. • Provide opportunities for students to distinguish between plays that teach facts and ones that communicate a variety of emotions. • Provide dramatic play opportunities both indoors and outdoors. • Provide clothing, materials, and props that facilitate performances. • Model voices and facial expressions of characters while reading aloud.

9.1.V Production and Performance – Visual Arts

BIG IDEA: Visual arts allow expression of interests, abilities, and knowledge.
ESSENTIAL QUESTION: How can I express my thoughts, feelings, and ideas through visual arts?

A. ELEMENTS AND PRINCIPLES

Standard	Concepts and Competencies	Supportive Practices
9.1.V 2.A **Know and use basic elements of visual arts.**	**The learner will:** • Participate in visual arts activities. • Demonstrate an understanding of "color," "shape," "line," "tone," and "hue." • Create a work of art using different media and materials. • Use paints to create new shades and colors. • Begin using detail when creating a work of art.	**The adult will:** Explicitly use vocabulary for elements of visual arts (e.g., color, shape, line). Provide a variety of art materials. • Model appropriate use of art materials. • Point out basic elements of visual arts in a variety of artwork. • Provide experiences through large and small group activities that focus on the elements of visual arts.

B. DEMONSTRATION

Standard	Concepts and Competencies	Supportive Practices
9.1.V 2.B **Create works of art inspired by the styles and materials of other artists.**	**The learner will:** • Participate in visual arts activities. • Respond to the works of famous artists by creating personal artwork. • Begin to identify the focal point in works of art. • Identify his/her own work and the works of others (e.g., "My painting is the style of Picasso because …"). • Use a variety of materials (e.g., chalk, paint, crayons, pencils, markers, wood, playdough). • Draw to explore and extend themes in the classroom. • Create simple sculptures using clay and various tools to create texture. • Use paints to create new shades and colors.	**The adult will:** Provide a variety of art materials. Provide opportunities to use three-dimensional materials (e.g., clay, playdough, wood). Allow for individual or group projects to extend over several days. Display students' artwork. • Provide prints of famous artworks (real or virtual) and facilitate discussions about the qualities of these works (e.g., compare and contrast). • Rotate art materials to provide a variety of experiences.

E. REPRESENTATION

Standard	Concepts and Competencies	Supportive Practices
9.1.V 2.E **Use imagination and creativity to express self through visual arts.**	**The learner will:** • Participate in visual arts activities. • Create self-portraits. • Create a work of art to represent a real or imagined object, animal, or person. • Use a growing number of details and make more realistic representations. • Choose different art materials to represent different types of thoughts or feelings. • Create works of art that define mood. • Recognize and discuss own and others' artwork using appropriate vocabulary (e.g., color, shape, line, texture).	**The adult will:** Allow for individual or group projects to extend over several days. Relate art activities to other classroom experiences. • Provide a variety of art materials. • Encourage age-appropriate imagination and creativity in depictions. • Rotate art materials to provide a variety of experiences. • Provide multicultural art materials for use in self-representation. • Encourage students to use materials for individual expression of feelings or thoughts. • Encourage students to talk about their artwork. • Display students' artwork.

J. TECHNOLOGIES

Standard	Concepts and Competencies	Supportive Practices
9.1.V 2.J **Use a variety of technologies for producing works of art.**	**The learner will:** • Explore a variety of art materials and tools. • Participate in visual arts activities. • Use art materials and tools as intended. • Manipulate materials in a variety of ways (e.g., pounding, squeezing, cutting, rolling). • Use age-appropriate digital media applications to create works of art. • Use recording devices (e.g., digital camera, video recorder, application) to capture work in progress and finished work of art.	**The adult will:** Use recording devices (e.g. digital camera, video recorder, application) to capture and share the creative process and finished works of art. • Make art materials and technologies (e.g., iPad, tablet) accessible to students. • Model and discuss use of technologies when producing works of art. • Rotate art materials to provide a variety of experiences.

9.2 Historical and Cultural Context of Works of Art

BIG IDEA: Every culture has its own art forms.
ESSENTIAL QUESTION: Can I identify instruments and/or art forms from another culture?

D. PERSPECTIVE

Standard	Concepts and Competencies	Supportive Practices
9.2 2.D **Describe the historical and cultural context of works of art.**	**The learner will:** • Participate in discussions relating to the historical and cultural context of art. • Explore instruments from different cultures. • Distinguish between ancient and modern forms of art. • Know and use appropriate vocabulary connecting social studies and the arts. • Participate in discussions about where various instruments and art forms originate. • Identify cultures represented by various art forms. • Relate works of art specific to the North American region. • Identify works of art related to Pennsylvania local history.	**The adult will:** • Display works of art from a variety of cultures. • Share a variety of music and movement forms, explicitly using appropriate vocabulary to label the forms (e.g., jazz, classical, hip-hop, folk). • Provide connections between the arts and cross-curricular classroom studies. • Play many types of music. • Display (real or virtual) and discuss works of art related to North American and Pennsylvania history. • Discuss the cultures represented by art forms and instruments (e.g., quilting, pottery, basket weaving). • Read books about a variety of cultures, pointing out similarities and differences in art forms.

9.3 Critical Response to Works of Art

BIG IDEA: People evaluate art based upon a variety of characteristics.
ESSENTIAL QUESTION: Can I explain how I feel about a particular art form? Can I provide reasons that explain my feelings about a particular art form?

F. IDENTIFICATION

Standard	Concepts and Competencies	Supportive Practices
9.3 2.F **Use critical processes (e.g., compare, contrast) to examine works of art.**	**The learner will:** • Identify works of art (e.g., photo, painting, drawing, dance, songs). • Name music by type (e.g., jazz, country, folk, rock and roll). • Identify the difference between live and recorded performances. • Identify the difference between live/real and virtual/digital/recreated art exhibits. • View an artwork or performance and articulate its subject and/or theme.	**The adult will:** • Display students' and professional works of art. • Provide artistic, theatrical, and musical examples that have clear meaning for class discussion. • Compare and contrast the various types and characteristics of works of art (e.g., photography, painting, dance, performance). • Provide live and recorded examples of performances. • Facilitate discussions on characteristics of original works of art versus reproductions. • Take a virtual field trip to explore works of art (e.g., museum, artist in action).

G. CRITICAL RESPONSE

Standard	Concepts and Competencies	Supportive Practices
9.3 2.G **Recognize that works of art have meaning.**	**The learner will:** • Gather information about works of art. • Identify the meaning in works of art based on personal reflections. • Share an opinion about artwork when asked. • Make comparative statements (e.g. "This painting means _____ to me and is different than what it meant to the artist.").	**The adult will:** Model and encourage students to comment on works of art. • Provide information and background on artists and works of art. • Provide text (e.g., informational) on various artists and their work. • Provide opportunities to explore increasingly more complex art forms throughout the year. • Model and discuss appropriate ways to share opinions. • Facilitate discussions about the meaning of various forms of art.

9.4 Aesthetic Response to Works of Art

BIG IDEA: Artwork can mean different things to different people.
ESSENTIAL QUESTION: How do I express my response to a work of art?

B. EMOTIONAL RESPONSE

Standard	Concepts and Competencies	Supportive Practices
9.4 2.B **Examine and communicate an informed individual opinion about the meaning of works of art.**	**The learner will:** • Respond through appropriate body movement, facial expression, or oral language (e.g., swaying, tapping foot, smiling). • Respond (e.g., laugh, sigh) at appropriate times to others' performances. • Respect others' interpretations of works of art. • Respond to works of art by communicating feelings (e.g., "This makes me feel happy because …" "This makes me feel sad because …"). • Respond to dramatic performances by communicating feelings about characters and actions.	**The adult will:** • Display students' and professional art. • Provide a wide variety of materials for students' use (e.g., art, music, movement, dramatic play, performance play). • Encourage students to communicate an emotional response about works of art (e.g., art, music, movement, performances). • Model appropriate ways to share opinions about the meanings of works of art.

Creative Thinking and Expression Glossary

Aesthetics—A branch of philosophy that focuses on the nature of beauty, the nature and value of the arts, and the inquiry processes and human responses they produce.

Aesthetic Response—A philosophical reply to works of art.

Artistic Choices—Selections made by artists to convey meaning.

Arts Resource—An outside community asset (e.g., performances, exhibitions, performers, artists).

Assess—To analyze and determine the nature and quality of the process/product through means appropriate to the art form.

Community—A group of people who share a common social, historical, regional, or cultural heritage.

Create—To produce works of art using materials, techniques, processes, elements, principles, and analysis.

Culture—The way of life of a particular social, ethnic, or age group of people which includes beliefs, customs, arts, and behaviors.

Elements—Core components that support the principles of the arts.

Genre—A type of category (e.g., music—opera, oratorio; theater—tragedy, comedy; dance—modern, ballet; visual arts—pastoral, scenes of everyday life).

Humanities—The branch of learning that connects the fine arts, literature, languages, philosophy and cultural science. The humanities are concerned with the understanding and integration of human thought and accomplishment.

Multimedia—The combined use of media, such as movies, CD-ROMs, television, radio, print, and the Internet, for entertainment and publicity.

Original Works of Art—Dance, music, theatre, and visual arts pieces created by performing or visual artists.

Style—A distinctive or characteristic manner or expression.

Technique—Specific skills and details employed by an artist, craftsperson, or performer in the production of works of art.

Timbre—A unique quality of sound.

Visual Arts—Art forms which are primarily visual in nature, such as ceramics, drawing, painting, sculpture.

Health, Wellness, and Physical Development

Learning about My Body

10.1 Concepts of Health

10.2 Healthful Living

10.3 Safety and Injury Prevention

10.4 Physical Activity – Gross Motor Coordination

10.5 Concepts, Principles, and Strategies of Movement – Fine Motor Coordination

Get Up and Move!

Obesity is a growing concern even for very young children. Research indicates that even children are eating inappropriate foods with too many calories. Early childhood settings have a unique opportunity to influence children's healthy eating and physical activity habits. Teachers need to plan adequate opportunities for children to exercise and engage in movement activities including outdoor play. Including active movement games and songs as part of the indoor routine can also extend the amount of time children are exercising each day. Menus must be carefully planned that offer healthy foods and limit snacks and extras, like dessert, to nutritionally-appropriate selections. Adults should work together to introduce and sustain healthy choices and habits influence children's ongoing development and school success.

Teachers should model healthy and safe practices and promote healthy lifestyles for children. In addition, opportunities to experience active indoor and outdoor play in which children use their bodies provide a foundation for lifelong healthy habits. Children's health, safety, and ability to learn are inextricably linked. Health and safety activities, integrated throughout the day, provide a means to support children's cognition.

10.1 Concepts of Health

BIG IDEA: Awareness of health concepts provides a foundation for healthy decision-making.
ESSENTIAL QUESTIONS: Do I have a basic understanding of my body? Can I identify basic health concepts that help my body develop?

B. INTERACTION OF BODY SYSTEMS

Standard	Concepts and Competencies	Supportive Practices
10.1 2.B **Identify and describe functions of major body organs and systems.**	**The learner will:** • Name and point to organs. • Draw pictures that include some body parts and organs. • Participates in discussions about the functions of specific body parts, organs, and systems. • Describe functions of basic body parts, organs, and systems.	**The adult will:** • Read books about the body organs. • Introduce major body systems (e.g., digestive, circulatory, skeletal, muscular, respiratory). • Introduce specific organs and discuss function (e.g., brain, heart). • Make outline of body and add details to body parts and organs. • Provide experiences (e.g., real or virtual) that highlight the functions of body parts and organs (e.g., health care professional to demonstrate a beating heart or virtual experience).

C. NUTRITION

Standard	Concepts and Competencies	Supportive Practices
10.1 2.C **Identify foods and the roles they have in keeping our bodies healthy.**	**The learner will:** • Identify healthy and non-healthy foods. • Explain how food provides fuel and energy for the body. • Classify foods by food groups using *MyPlate* (e.g., fruits, vegetables, dairy). • Make healthy food choices. • Identify foods to include in specific food groups. • Provide examples of healthy meals. • Design a meal using foods from several groups. • Classify food as high or low in fats and sugars.	**The adult will:** • Discuss the importance of making healthy food choices. • Discuss the benefits of specific foods as they relate to parts of the body (e.g., teeth, heart). • Model healthy eating. • Display and discuss *MyPlate* to encourage healthy portioning of food. • Provide opportunities to sort food (e.g., food groups, high- and low-fat). • Offer opportunities to log food choices for monitoring and discussion.

D. ALCOHOL, TOBACCO, AND CHEMICAL SUBSTANCES

Standard	Concepts and Competencies	Supportive Practices
10.1 2.D **Distinguish between healthy and unhealthy behaviors.**	**The learner will:** • Describe healthy behaviors. • Identify unhealthy behaviors (e.g., smoking). • Discuss times when medicine is needed versus misuse of medication. • Discuss safety practices related to proper medicine use and storage (e.g., out of reach, locked cabinet, refrigerator). • Demonstrate how to say "No" to drugs. • Identify trusted adults who can give medicine (e.g., family members, school nurse).	**The adult will:** • Provide opportunities to discuss what happens when we are sick and what we do to feel better. • Discuss what constitutes a drug (e.g., makes your body feel and act differently). • Read related literature (e.g., decision-making, refusal skills, healthy choices, risk-taking). • Use role-play situations to develop competence in using basic refusal skills. • Discuss positive and negative aspects of medicine use. • Remind students to only take medicine from a trusted adult (e.g., family member, school nurse). • Discuss what to do when unhealthy substances are found (e.g., medicine, tobacco). • Model proper use of medicine (e.g., proper storage in first aid kits, double-checking medicine is going to appropriate child).

E. HEALTH PROBLEMS AND DISEASE PREVENTION

Standard	Concepts and Competencies	Supportive Practices
10.1 2.E **Identify and discuss common health problems and risk factors.**	**The learner will:** • Participate in discussions about infectious (e.g., colds, flu, chicken pox, pink eye) and non-infectious illnesses (e.g., asthma, allergies). • Discuss the concept of "germs." • Participate in activities that exemplify the spread of germs to learn healthy practices. • Describe ways that germs can spread. • Explain how germs can make someone ill. • Explain how rest, exercise, and good nutrition keep us healthy. • Demonstrate respect for the health problems of others. • Identify signs of illness (e.g., fever, headache, stomach ache, vomiting, diarrhea)	**The adult will:** • Use teachable moments (e.g., many students absent due to flu, students needing an inhaler) to discuss different types of illnesses. • Model healthy practices that prevent the spread of germs (e.g., cough into elbow, wash hands). • Promote understanding of the importance of food restrictions. • Provide instruction on a variety of health issues (e.g., pertaining to the classroom population). • Discuss illness prevention. • Engage students in hands-on experiences that exemplify the spread of germs to encourage healthy practices. • Use resources (e.g., books, video) to teach about specific illnesses and illness prevention.

10.2 Healthful Living

BIG IDEA: Children need to make healthy choices to optimize their learning potential.
ESSENTIAL QUESTION: What are things I can do to keep myself healthy?

A. HEALTH PRACTICES, PRODUCTS, AND SERVICES

Standard	Concepts and Competencies	Supportive Practices
10.2 2.A **Identify personal hygiene practices and community helpers for good health.**	**The learner will:** • Practice basic hygiene routines (e.g., hand washing, covering nose and mouth when sneezing). • Identify people who help keep us healthy (e.g., doctor, nurse, dentist, gym teacher). • Identify tools and practices that doctors and dentists use to keep us healthy. • Identify specific practices that support body development and function (e.g., exercise, good nutrition, rest). • Discuss the role hygiene plays in keeping us healthy.	**The adult will:** Invite local health experts (e.g., dentist, doctor, nurse, physical trainer) to the classroom to discuss how they help keep us healthy. • Provide daily opportunities to practice hygiene routines. • Display *MyPlate* near mealtime area to encourage healthy portioning of food. • Encourage students to rest to help their bodies stay healthy. • Model and encourage exercise and active play. • Use a variety of resources to review healthy practices (e.g., books, videos, songs, applications).

E. HEALTH AND THE ENVIRONMENT

Standard	Concepts and Competencies	Supportive Practices
10.2 2.E **Identify environmental factors that affect health.**	**The learner will:** • Discuss plants, insects, and animals that could be harmful (Share personal experiences when relevant). • Identify harmful substances. • Describe ways to protect oneself from harmful factors in the environment. • Describe things in the environment that can be harmful (e.g., loud noise, smoke, pollution, temperature, insects, plants).	**The adult will:** Engage a local expert (e.g., pest control professional, high school or college professional, florist) as a guest speaker. • Read books about plants, insects, and animals that might be harmful. • Explicitly label plants as "nontoxic" and explain. • Talk about harmful substances and objects. • Recognize and use teachable moments (e.g., avoiding insect nest on playground, avoiding stray dog, locking up cleaners) to discuss how to stay safe in the natural environment.

10.3 Safety and Injury Prevention

BIG IDEA: Awareness of safe and unsafe practices provides a foundation for healthy decision-making.
ESSENTIAL QUESTION: What are things I can do to keep myself and others safe?

A. SAFE AND UNSAFE PRACTICES

Standard	Concepts and Competencies	Supportive Practices

10.3 2.A
Recognize safe and unsafe practices.
	The learner will:
	• Identify and follow basic safety rules.
	  ▫ School (e.g., on playground, in classroom, on field trip, crossing street).
	  ▫ Home (e.g., poison, electrical outlets, Internet).
	  ▫ Community (e.g., strangers, motor vehicle, bicycle).
	• Identify consequence of an unsafe behavior.
	• Identify and avoid unsafe practices (e.g., playing with matches, talking to strangers).
	• Explain how community workers (e.g., firefighter, police officer) keep us safe.
	• Identify behaviors to assure safe practice (e.g., looking both ways when crossing the street, not talking to strangers, wearing a helmet when riding the bike).
	• Demonstrate and describe the importance of rules.
		The adult will:
		• Display and discuss classroom safety rules.
		• Discuss basic safety rules (e.g., crossing street, stranger danger, car seat safety, water safety, bike safety, Internet).
		• Use a variety of resources to review safe and unsafe practices (e.g., videos, songs).
		• Use natural consequences as teachable moments to reinforce safe practices.
		• Discuss consequences and outcomes of choices.
		• Engage local experts (e.g., police officers, firefighters, emergency management personnel) as guest speakers.

B. EMERGENCY RESPONSES

Standard	Concepts and Competencies	Supportive Practices
10.3 2.B **Recognize emergency situations and discuss appropriate responses.**	**The learner will:** • Identify procedures for a variety of emergencies (e.g., fire, tornado, intruder, medical emergency). • Participate in discussions that differentiate between emergencies and non-emergencies. • Practice emergency procedures in school and at home. • Identify personal identifying information (e.g., name, phone number, address). • Demonstrate appropriate fire safety practices and emergency procedures.	**The adult will:** • Define what constitutes an emergency. • Practice making 911 calls. • Practice sharing personal identifying information in case of emergency. • Demonstrate and practice "STOP, DROP, ROLL" and other emergency procedures. • Practice fire and emergency evacuation procedures. • Use a variety of resources to discuss emergency situations (e.g., books, applications). • Engage local experts (e.g., police officers, firefighters, emergency management personnel) as guest speakers. • Provide specific feedback after practicing emergency procedures.

10.4 Physical Activity – Gross Motor Coordination

BIG IDEA: Children gain control over their bodies and body movements through active experiences and exploration.
ESSENTIAL QUESTION: How do I control and coordinate my body during large motor activities and games?

A. CONTROL AND COORDINATION

Standard	Concepts and Competencies	Supportive Practices
10.4 2.A **Demonstrate coordination of purposeful body movements.**	**The learner will:** • Combine large motor movements with the use of equipment (e.g., use feet to pedal, catch a ball, throw a beanbag or ball overhand with aim, kick a ball). • Move and stop with control. • Use outdoor gross motor equipment. • Engage in gross motor games (e.g., Four Square). • Perform a variety of movements alongside and with a partner. • Participate in games that emphasize one or more of the game components (e.g., soccer, baseball). • Participate in group games (e.g., Follow the Leader, Tag, Kickball) to use skills. • Hit a stationary target with an overhand throw. • Demonstrate quick reaction time in catching.	**The adult will:** • Review safety rules prior to large motor activities. • Provide targets to throw toward (e.g., hula hoops or baskets). • Include materials and equipment that encourage active play (e.g., balls, climbers and slides, ramps). • Provide daily outdoor time. • Provide instruction on varying roles pertaining to a type of game/sport (e.g., goalie/soccer). • Provide educational experiences that emphasize cooperative games. • Create opportunities to participate in large motor movement games that involve partners. • Engage in gross motor play with students.

B. BALANCE AND STRENGTH

Standard	Concepts and Competencies	Supportive Practices
10.4 2.B **Exhibit balance, strength, stamina, and agility.**	**The learner will:** • Use gross motor movements to learn new skills and engage in new activities. • Engage in large motor activities that require strength and balance (e.g., marching, hopping, skipping, running, jumping on one foot, dancing, walking tip toe). • Walk on a balance beam forward and backward. • Climb stairs using alternating feet. • Participate in an obstacle course going through tunnels or over/under equipment. • Identify why regular, active participation may help skills (e.g., balance, strength, stamina, agility) improve.	**The adult will:** • Provide opportunities to participate in a variety of motor activities (e.g., sway, stretch, pull, push, bend, squat). • Introduce terms related to exercise (e.g., frequency, intensity, time, type). • Provide space and opportunities daily for students to walk, run, and climb. • Provide different amounts of time for practicing motor skills. • Discuss how short- and long-term practices affect students' motor skill performance. • Provide daily opportunities to engage in gross motor activities inside (e.g., games, dancing and moving to music). • Create obstacle courses to practice gross motor movements.

10.5 Concepts, Principles, and Strategies of Movement – Fine Motor Coordination

BIG IDEA: Fine motor practice helps children develop eye-hand coordination, strength, and controlled use of tools.
ESSENTIAL QUESTIONS: How do I use my hands and fingers to manipulate objects? How do I develop eye-hand coordination?

A. STRENGTH, COORDINATION, AND MUSCLE CONTROL

Standard	Concepts and Competencies	Supportive Practices
10.5 2.A **Use dexterity and strength to manipulate objects.**	**The learner will:** • Engage in self-help skills with independence. • Manipulate smaller objects (e.g., eye droppers, tweezers). • Demonstrate strength when manipulating objects.	**The adult will:** • Provide opportunities to manipulate objects.

B. EYE/HAND COORDINATION

Standard	Concepts and Competencies	Supportive Practices
10.5 2.B **Coordinate eye and hand movements to perform an advanced task.**	**The learner will:** • Manipulate smaller objects. • Use lined paper during daily writing experiences.	**The adult will:** • Provide opportunities to use scissors. • Provide a variety of smaller objects to manipulate. • Provide opportunities for writing across the curriculum.

C. USE OF TOOLS

Standard	Concepts and Competencies	Supportive Practices
10.5 2.C **Use tools with control and skill to perform tasks.**	**The learner will:** • Demonstrate control with writing and drawing implements. • Choose appropriate tool for a specific task. • Use writing and drawing implements with appropriate grip. • Practice keyboarding skills.	**The adult will:** • Provide a variety of materials and experiences that offer manipulative practice (e.g., art, writing, puzzles). • Introduce students to keyboarding. • Encourage students to create letters using proper letter formation and sizing. • Maintain a writing center with a variety of writing implements and art tools.

Health, Wellness, and Physical Development Glossary

Agility—A component of physical fitness that relates to the ability to rapidly change the position of the entire body in space with speed and accuracy.

Balance—A skill-related component of physical fitness that relates to the maintenance of equilibrium while stationary or moving.

Body Systems—A group of organs that work together to perform a certain task.

Coordination—A skill-related component of physical fitness that relates to the ability to use the senses together with body parts in performing motor tasks smoothly and accurately.

Developmental Differences—Learners are at different levels in their motor, cognitive, emotional, social, and physical development. The learners' developmental status will affect their ability to learn or improve.

Developmentally Appropriate—Motor skill development and change that occur in an orderly, sequential fashion and are age- and experience-related.

Directions—Forward, backward, left, right, up, down.

Fine Motor—Action involving the small muscles of the hands and wrists.

Flexibility—A health-related component of physical fitness that relates to the range of motion available at a joint.

Food Guide Pyramid—A visual tool used to help people plan healthy diets according to the Dietary Guidelines for America.

Health—A state of complete physical, mental, and social well-being; not merely the absence of disease or infirmity.

Health Education—Planned, sequential PK-12 program of curricula and instruction that helps students develop knowledge, attitudes, and skills related to the physical, mental, emotional, and social dimensions of health.

Gross Motor—The abilities required to control the large muscles of the body for walking, running, sitting, crawling, and other activities.

Locomotor Movement—Movements producing physical displacement of the body, usually identified by weight transference via the feet. Basic locomotor steps are the walk, run, hop, and jump, as well as the irregular rhythmic combinations of the skip, slide, and gallop.

Manipulate—Handle or control, typically in a skillful manner.

Motor Skills—Non-fitness abilities that improve with practice and relate to one's ability to perform specific sports and other motor tasks (tennis serve, shooting a basketball).

Movement Skills—Proficiency in performing non-locomotor, locomotor, and manipulative movements that are the foundation for participation in physical activities.

My Plate—A visual cue to help consumers adopt healthy eating habits by encouraging them to build a healthy plate, consistent with the 2010 dietary guidelines for Americans.

Non-Locomotor Movement—Movements that do not produce physical displacement of the body.

Nutrition—The sum total of the processes involved in the taking in and the use of food substances by which growth, repair, and maintenance of the body are accomplished.

Physical Activity—Bodily movement produced by the contraction of the skeletal muscle and which substantially increases energy expenditure.

Physical Education—Planned, sequential, movement-based program of curricula and instruction that helps students develop knowledge, attitudes, motor skills, self-management skills, and confidence needed to adapt and maintain a physically active life.

Physical Fitness—A set of attributes that people have or achieve that relate to their ability to perform physical activity.

Strength—The quality or state of being strong; bodily or muscular power; vigor.

Safety Education—Planned, sequential program of curricula and instruction that helps students develop the knowledge, attitudes, and confidence needed to protect them from injury.

Resources

APPROACHES TO LEARNING THROUGH PLAY

Berk, L., Hirsh-Pasek, K., Michnick Golinkoff, R., & Singer, D (2008). *A Mandate for Playful Learning in Preschool: Presenting the Evidence.* New York, N.Y.: Oxford University Press.

Bush, D., Drew, W. & Neil, M (2013). *From Play to Practice: Connecting Teachers' Play to Children's Learning.* Washington, D.C.: National Association for the Education of Young Children.

Duncan, J. & Lockwood, M (2008). *Learning through Play: A Work-Based Approach for the Early Years Professional.* New York, N.Y.: Continuum.

Gonzalez-Mena, J., & Eyer, D.W (2011). *Infants, Toddlers, and Caregivers: A Curriculum of Respectful, Responsive, Relationship-Based Care and Education.* New York: McGraw-Hill.

Jones, E. & Reynolds, G (2011). *The Play's the Thing: Teachers' Roles in Children's Play* (2nd Edition). New York, N.Y.: Teacher's College Press.

National Scientific Council on the Developing Child National Forum on Early Childhood Policy and Programs. *Building the Brain's "Air Traffic Control" System: How Early Experiences Shape the Development of Executive Function.* Working Paper 11. February, 2011. Retrieved from www.developingchild.harvard.edu.

Parten, M (1932). "Social participation among preschool children." *Journal of Abnormal and Social Psychology 28* (3): 136–147.

Roopnarine, J. & Johnson, J (2012). *Approaches to early childhood education* (6th ed.). Columbus, Ohio: Prentice Hall.

Rouse, Longo, Trickett. *Fostering Resilience in Children,* Bulletin #875-99; Retrieved 7/09 from Ohioline.ag.ohio-state.edu.

White, J (2008). *Being, Playing and Learning Outdoors: Making Provision for High Quality Experiences in the Outdoor Environment.* New York, N.Y.: Routledge.

SOCIAL AND EMOTIONAL DEVELOPMENT

Bailey, B.A (2011). *Managing Emotional Mayhem: The Five Steps for Self-Regulation.* Oviedo, Fla.: Loving Guidance, Inc.

Center for Social and Emotional Foundations for Early Learning, www.vanderbilt.edu/csefel/index.html.

CASEL: Collaborative for Academic, Social and Emotional Learning: www.casel.org.

Technical Assistance Center on Social and Emotional Intervention (TACSEI), www.challengingbehaviors.org.

Blair, K., Lee, I., Cho, S., & Dunlap, G (2010). "Positive behavior support through family-school collaboration for young children." *Topics in Early Childhood Special Education,* 31, 22–36.

Bowman, B. & Moore, E (2012). *School Readiness and Social-Emotional Development: Perspectives on Cultural Diversity.* Washington, D.C.: National Association for the Education of Young Children.

Derman-Sparks, L. & Olsen Edwards, J (2010). *Anti-Bias Education for Young Children and Ourselves.* Washington, D.C.: National Association for the Education of Young Children.

Epstein, A (2009). *Me, You, Us Social-Emotional Learning in Preschool.* Ypsilanti, Mich.: High Scope Press.

Galinsky, E (2010). *Mind in the Making: The Seven Essential Life Skills Every Child Needs.* New York, N.Y.: Harper Studio.

Jones, Stephanie. M., & Bouffard, Suzanne. M (2012). "Social and Emotional Learning in Schools From Programs to Strategies." *Social Policy Report,* v. 26 (4).

"Role of Relationships." *Young Children Journal.* November 2012.

Vance, E. & Jimenez Weaver, P (2009). *Class Meetings: Young Children Solving Problems Together.* Washington, D.C.: National Association for the Education of Young Children.

LANGUAGE AND LITERACY DEVELOPMENT

Literacy and Head Start http://curry.edschool.virginia.edu/go/wil/home.html.

Florida Center for Reading Research http://www.fcrr.org/.

World-Class Instructional Design and Assessment (WIDA) Consortium http://www.wida.us/.

Collins, M. "Sagacious, Sophisticated, and Sedulous: The Importance of Discussing 50-Center Words with Preschoolers." *Young Children Journal.* National Association for the Education of Young Children, November 2012.

Collins, M. & Schickedanz, J (2013). *So Much More than the ABCs: The Early Phases of Reading and Writing.* Washington, D.C.: National Association for the Education of Young Children.

Halgunseth, L.C. & Peterson, A (2009). *Family engagement, diverse families, and early childhood education programs: An integrated review of the literature*. Washington, D.C.: National Association for the Education of Young Children.

Hutton, Thaashida L. "Three Tiers of Vocabulary and Education." *Super Duper Handy Handouts* (2008) Number 182. Retrieved from www.superduperinc.com.

Milner, H.R (Ed.). *Diversity and education: Teachers, teaching, and teacher education.* Springfield, Illinois: Charles C. Thomas Publishers, Ltd.

Nemeth, K (2012). *Basics of Supporting Dual Language Learners: An Introduction for Educators of Children from Birth through Age 8.* Washington, D.C.: National Association for the Education of Young Children.

Nilles, V. & Rios, F (2009). *Principles of practice for working with English Language Learners.*

Otto, Beverly. *Language Development in Early Childhood* (3rd Edition). Prentice-Hall. February 2009.

Tabors, P (2008). *One Child, Two Languages.* Baltimore, Md.: Brookes Publishing.

MATHEMATICAL THINKING AND EXPRESSION

Brenneman, K., Stevenson-Boyd, J., & Frede, E (March 2009). *Math and Science in Preschool: Policies and Practice.* National Institute for Early Education Research. Retrieved from http://nieer.org/resources/policybriefs/20.pdf

Carruthers, E. & Worthington, M (2011). *Developing Children's Mathematical Graphics: Supporting Early Mathematical Thinking.* New York, N.Y.: Open University Press.

Charlesworth, R. & Lind, K (2009). *Math & Science for Young Children.* Belmont, Calif.: Wadsworth.

Charlesworth, R (2011). *Experiences in Math for Young Children* (6th Edition). Boston, Mass.: Wadsworth.

Copley, J (2010). *The Young Child and Mathematics* (2nd Edition). Washington, D.C.: National Association for the Education of Young Children.

Cross, C., Woods, T., & Schweingruber, H (2009). *Mathematics Learning in Early Childhood: Paths Toward Excellence and Equity.* Committee on Early Childhood Mathematics; National Research. Washington, D.C.: National Academies Press.

Foundation for the Future. *Strengthening STEM Education in the Early Years: A Plan for Increasing the Number of Skilled Pre-K-6 STEM Educators in the Greater Boston Region.* Wheelock College Aspire Institute, 2010.

Moomaw, S (2013). *Teaching STEM in the Early Years: Activities for Integrating Science, Technology, Engineering, and Mathematics.* St. Paul, Mn.: Red Leaf Press.

National Institute for Early Education Research (2009). *Yet More Evidence: It's Time to Strengthen Math, Science in Pre-K.* Retrieved from http://nieer.org/.

Pollman, M.J (2010). *Blocks and Beyond: Strengthening Early Math and Science Skills through Spatial Learning.* Baltimore, Md.: Brookes Publishing.

Rogow, F. & Scheibe, C (2012). *The Teacher's Guide to Media Literacy Critical Thinking in a Multimedia World.* Thousand Oaks, Calif.: Corwin.

Sarama, J. & Clements, D (2009). *Early Childhood Mathematics Education Research: Learning Trajectories for Young Children.* New York, N.Y.: Routledge.

Shillady, A (2012). *Spotlight on Young Children: Exploring Math.* Washington, D.C.: National Association for the Education of Young Children.

Shillady, A. & Schoenberg Muccio, L (2012). *Spotlight on Young Children and Technology.* Washington, D.C.: National Association for the Education of Young Children.

Mathematics in the Early Years. Young Children Journal, May 2009.

Technology and Young Children. Young Children Journal. May 2012.

SCIENTIFIC THINKING

Pennsylvania Science, Technology & Engineering, Environmental Literacy & Sustainability (STEELS) Standards https://www.education.pa.gov/Teachers%20-%20Administrators/Curriculum/Science/Pages/Science-Standards.aspx

Chard, S., Katz, L., & Kogan, Y (2013). *Engaging Children's Minds: The Project Approach* (3rd Edition). Westport, Conn.: Praeger.

DeVries, R. & Sales, C (2011). *Ramps & Pathways: A Constructivist Approach to Physics with Young Children.* Washington, D.C.: National Association for the Education of Young Children.

Foundation for the Future. *Strengthening STEM Education in the Early Years: A Plan for Increasing the Number of Skilled Pre-K-6 STEM Educators in the Greater Boston Region.* Wheelock College Aspire Institute, 2010.

Pica, R (2009). *Jump into science: Active learning for preschool children.* Beltsville, Md.: Gryphon House.

Saracho, O. & B. Spodek, Eds (2008). *Contemporary Perspectives on Science and Technology in Early Childhood Education.* Charlotte, N.C.: Information Age Publishing.

Shillady, A (2011). *Spotlight on Young Children and Nature Books.* Washington, D.C.: National Association for the Education of Young Children.

SOCIAL STUDIES THINKING

National Council for the Social Studies: www.ncss.org

Gartrell, D (2011). *Education for a Civil Society: How Guidance Teaches Young Children Democratic Life Skills.* Washington, D.C.: National Association for the Education of Young Children.

Koralek, D. & Mindes, G (2012). *Spotlight on Young Children and Social Studies.* Washington, D.C.: National Association for the Education of Young Children.

Social Studies in Early Childhood Education: Designing Curriculum to Meet Standards with Evidence-Based Practices (DVD). Arlitt Instructional Media.

CREATIVE THINKING AND EXPRESSION

Copeland, S. & Schwartz, S (2010). *Connecting Emergent Curriculum and Standards in the Early Childhood Classroom: Strengthening Content and Teaching Practice.* New York, N.Y.: Teacher's College Press.

Edwards, C., Gandini, L., & Forman, G (2011). *The Hundred Languages of Children: The Reggio Emilia Experience in Transformation* (3rd Edition). Westport, Conn.: Praeger.

Grennon Brooks, J (2011). *Big Science for Growing Minds: Constructivist Classrooms for Young Thinkers.* New York, N.Y.: Teacher's College Press.

Harris Helm, J., Katz, L (2011). *Young Investigators: The Project Approach in the Early Years* (2nd Edition). New York, N.Y.: Teacher's College Press, Washington, D.C.: National Association for the Education of Young Children.

Lewin-Benham, A (2011). *Twelve Best Practices for Early Childhood Education: Integrating Reggio and Other Inspired Approaches.* New York, N.Y.: Teacher's College Press.

Mulcahey, C (2009). *The Story in the Picture: Inquiry and Art making with Young Children.* New York, N.Y.: Teacher's College Press.

Vea Vecchi (2010). *Art and Creativity in Reggio Emilia: Exploring the Role and Potential of Ateliers in Early Childhood Education.* New York, N.Y.: Routledge.

HEALTH, WELLNESS, AND PHYSICAL DEVELOPMENT

Caring for Our Children: National Health and Safety Performance Standard; Guidelines for Early Care and Education Programs (3rd Edition) (2011).

Keystone Kids Go http://panen.org/keystone-kids-go.

http://www.nrckids.org/CFOC3/PREVENTING OBESITY/index.htm.

Model Child Care Health Policies (MCCHP). Retrieved from www.ecels-healthychildcarepa.org.

My Plate http://www.choosemyplate.gov/.

Nutrition and Physical Activity Self-Assessment for Child Care (NAPSACC).

http://www.centert.org/index.cfm?fa=opinterventions.intervention&intervention=napsacc&page=intent.

Aronson, S (2012). *Healthy Young Children: A Manual for Programs* (5th Edition). Washington, D.C.: National Association for the Education of Young Children.

Preventing Childhood Obesity in Early Care and Education Programs (2nd Edition) (2012). Auroro, Col.: American Academy of Pediatrics.

Office of Child Development and Early Learning

Pennsylvania
Department of Human Services

Pennsylvania
Department of Education

CD 331 08/2024