New York State Prekindergarten Foundation for the Common Core

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http://www.p12.nysed.gov/ciai/common_core_standards/pdfdocs/nyslsprek.pdf

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INTRODUCTION

"Early childhood education for all children ages birth through grade 3 is an integrated system designed to ensure that each child receives a healthy start and attains the skills and concepts to have a successful academic experience in developmentally-appropriate programs. Components of the system include standards based programs that start early, instruction by highly qualified persons and an environment that coordinates comprehensive services and provides information and support to families."

New York State Board of Regents
Early Childhood Policy
(2006)

The New York State Prekindergarten Foundation for the Common Core

Carefully developed early learning expectations linked to K-12 standards contribute to a more cohesive, unified approach to young children's education. Adopted and approved by the Board of Regents in January 2011, the original version of the New York State Prekindergarten Learning Standards[1] provided a framework that focuses on the learning and development of the whole child and was inclusive of the broad academic concepts of the newly adopted New York State P-12 Common Core Learning Standards for English Language Arts and Literacy, as well as for Mathematics. The New York State Prekindergarten Learning Standards also aligned with the existing New York State K-12 learning standards in science, social studies, and the arts. In an effort to provide a clear, comprehensive, and consolidated resource for early childhood professionals, the New York State Prekindergarten Learning Standards have been revised to fully encompass the New York State P-12 Common Core Learning Standards for English Language Arts and Literacy, as well as for Mathematics at the Prekindergarten level. The revision process has resulted in one document, the New York State Prekindergarten Foundation for the Common Core.

The New York State Prekindergarten Foundation for the Common Core is organized into five broad developmental and interrelated domains. The five distinct, but highly interrelated domains provide the structure for the New York State Prekindergarten Foundation for the Common Core. A brief description of each domain appears below:

- **Approaches to Learning** – How children become involved in learning and acquiring knowledge.
- **Physical Development and Health** – Children's physical health and ability to engage in daily activities.
- **Social and Emotional Development** – The emotional competence and ability to form positive relationships that give meaning to children's experiences in the home, school, and larger community.
- **Communication, Language, and Literacy** – How children understand, create, and communicate meaning.
- **Cognition and Knowledge of the World** – What children need to know and understand about their world and how they apply what they know. This domain is a direct reflection of the content competencies and knowledge of the Common Core Learning Standards.

[1] For a complete, detailed history of the creation of the New York State Prekindergarten Learning Standards and the genesis of the New York State Prekindergarten Foundation for the Common Core, please see the attachment labeled, "Appendix".

The introduction to each domain sets the context for understanding its connection to how young children learn and develop. The benchmarks and benchmark indicators in each domain represent the standards for what prekindergarten students should know and be able to do in order to be successful learners. Indicators are observable and demonstrative and can be accomplished through the play and active engagement of four year olds within a rich and well designed environment. The lists of indicators are not exhaustive, but are samples of observable behaviors a child may exhibit in meeting the benchmarks.

Prekindergarten and preschool teachers, caregivers, and parents can determine what children are learning, what they enjoy, and what they have mastered, through careful observation of their play, work, and interactions with others, both in the classroom and in other environments. Listening and conversing with children, as well as examining and commenting on their creations and explorations, provides valuable information about each child's individual learning and development. The New York State Prekindergarten Foundation for the Common Core will provide an essential beginning for developing and implementing high quality curriculum, creating meaningful and appropriate learning experiences for four-year-olds across New York State, and informing other critical processes such as designing learning environments, planning standards based instruction and assessment, as well as pre-service and in-service training for administrators and teachers, and results-oriented parent engagement.

The New York State Prekindergarten Foundation for the Common Core and Success for All Students

The primary purpose of prekindergarten standards is to ensure that all children, including children with disabilities, students with Limited English Proficiency (LEP), and English Language Learners (ELLs) have rich and varied early learning experiences that prepare them for success in school and lay the foundation for college and career readiness.

Preschool Children with Disabilities

The New York State Prekindergarten Foundation for the Common Core will assist all early childhood professionals in setting high expectations for children. Preschool children with disabilities and their typically developing peers are all capable of learning, achieving, and making developmental progress. Preschool children with disabilities need specially designed instruction and related services designed to address their disability and ensure their participation in age appropriate activities with nondisabled peers. Each preschool child with a disability has an individualized educational program (IEP) which documents his/her individual goals, supports, and services as determined by his/her needs, strengths, and abilities. These individual supports, accommodations, and services are designed to assist the child to meet the goals in his/her IEP as well as to achieve the learning standards. With the appropriate services and supports, children with disabilities can participate in prekindergarten experiences with their nondisabled peers and be held to the same high standards and expectations as those without disabilities.

English Language Learners

Early childhood education plays an essential role in preparing young English language learners (ELLs) for later success in school. It provides children with the opportunity to develop basic foundational skills in language and literacy before they enter kindergarten ready to learn. Young English language learners can begin to develop these essential foundational skills even before they have developed strong English language skills. It is, therefore, essential to encourage continued first language development in our

children by providing them with appropriate education settings such as a bilingual classroom or integrated English as a Second Language (ESL) program, which support language and literacy learning in English. Those children who have had rich first language experiences seem to learn a second language, such as English, more easily than children who have had limited experience with the language they have used in their homes since birth. Like other skills, children develop language along a continuum with many factors contributing to the language acquisition process. The background knowledge that each child brings to the task of learning English has to be respected and acknowledged as part of the ongoing learning process.

The New York State Prekindergarten Foundation for the Common Core acknowledges the central role of language in the achievement of benchmarks as laid out for each of the domains and highlights the needs of learners who are still developing proficiency in English. These standards use students' first languages and cultures as the foundation for developing academic language proficiency, and encourage the education of young English language learners in a bilingual setting. The New York State Prekindergarten Foundation for the Common Core envisions language proficiency that builds on language complexity, cognitive engagement, and context within the key areas of language development (speaking, listening, viewing, representing, reading, and writing). The contexts of interaction, as defined by the benchmarks and performance indicators, are found within each of the domains of this document. These contexts allow for a range of language complexity and varying degrees of cognitive engagement as young English language learners interact with peers and adults in an encouraging and supportive environment for the purpose of negotiating meaning as well as exploration and discovery.

Guiding principles were developed by the original workgroup and were upheld throughout all work in the development of the New York State Prekindergarten Learning Standards as well as the New York State Prekindergarten Foundation for the Common Core. They are as follows:

GUIDING PRINCIPLES FOR THE DEVELOPMENT OF THE NEW YORK STATE PREKINDERGARTEN FOUNDATION TO THE COMMON CORE

1. All children are capable of learning, achieving and making developmental progress. The Prekindergarten Learning Standards are intended for all children regardless of economic, linguistic, and cultural differences or physical, learning, and emotional challenges.
2. Children develop at different rates and each child is unique in his/her own development, growth, and acquisition of skills. Appropriate and reasonable supports and accommodation must be provided to enable all children to succeed.
3. Children are active learners. A primary approach to learning is through purposeful play. Intentional planning promotes rich learning experiences that invite participation, involve multiple contexts, and engage the senses that help children explore their environment.
4. Early learning and development are multi-dimensional. Children's learning is integrated and occurs simultaneously across all domains, which are interrelated and interactive with one another.
5. Children learn in the context of interactions and relationships with family members, caregivers, teachers, and other children in their immediate environment and in their community.
6. The family is a significant contributor to children's lifelong learning and development. Actively engaging parents in the early education of their children is essential to children's success in the elementary classroom and later learning.
7. These Learning Standards may be used as tools to empower parents, teachers, and caregivers to better support and enhance young children's learning and development.
8. These Learning Standards acknowledge and respect children's rich backgrounds, their heritage, cultures, and linguistic differences.
9. The content of these Learning Standards is guided by research and effective practice to strengthen instruction and educational experiences across all settings. These Learning Standards are systemically aligned with New York State Common Core Learning standards, performance indicators for bilingual and preschool special education, Head Start outcomes, and the National Association for the Education of Young Children guidelines. They build upon provisions of quality set forth in child-care licensing requirements.

The following summary statements reinforce the guiding principles, relevant literature on early learning standards, and developmentally appropriate practice in early childhood programs.

The New York State Prekindergarten Foundation for the Common Core is:

- A resource for guiding the design, selection and implementation of a high quality curriculum.
- A guide for planning experiences and instructional activities that enable children to meet the standards.
- A guide for selecting assessment tools appropriate for children with differing abilities and challenges.
- A framework for all prekindergarten children regardless of language, background, or diverse needs.
- A bridge between the learning expectations of children birth through three and the standards for those attending K-12 in public schools.
- A focus for discussions regarding the education of young children by educators, policy makers, families and community members.
- A template for planning professional development opportunities.

The New York State Prekindergarten Foundation for the Common Core is *not*:

- Intended to be used as a checklist, but can inform the development or selection of screening and progress monitoring tools.
- Intended to be used as an assessment tool.
- Intended to be used as a curriculum.
- Meant to bar children from kindergarten entry.
- Meant to stifle the creativity of teachers, caregivers or parents.
- Intended to mandate specific teaching practices or materials.

Domain 1: Approaches to Learning

Approaches to Learning: Foundational Skills

NOTE: In prekindergarten, children are expected to demonstrate increasing awareness and competence in the areas that follow.

Engagement

1. Actively and confidently engages in play as a means of exploration and learning.
   a) Interacts with a variety of materials through play.
   b) Participates in multiple play activities with same material.
   c) Engages in pretend and imaginative play – testing theories, acting out imagination.
   d) Self-selects play activity and demonstrates spontaneity.
   e) Uses "trial and error" method to figure out a task, problem, etc.
   f) Demonstrates awareness of connections between prior and new knowledge.
2. Actively engages in problem solving.
   a) Identifies a problem and tries to solve it independently.
   b) Attempts multiple ways to solve a problem.
   c) Communicates more than one solution to a problem.
   d) Engages with peers and adults to solve problems.

Creativity and Imagination

3. Approaches tasks, activities and problems with creativity, imagination and/or willingness to try new experiences or activities.
   a) Chooses materials/props and uses novel ways to represent ideas, characters, and objects.
   b) Identifies additional materials to complete a task.
   c) Experiments to further his/her knowledge.
   d) Seeks additional clarity to further his/her knowledge.
   e) Seeks out connections, relations and assistance from peers and adults to complete a task.
   f) Communicates more than one solution to a problem.

Curiosity and Initiative

4. Exhibits curiosity, interest, and willingness in learning new things and having new experiences.
    a) Asks questions using who, what, how, why, when, where, what if.
    b) Expresses an interest in learning about and discussing a growing range of ideas.
    c) Actively explores how things in the world work.
    d) Investigates areas of interest.
    e) Takes objects and materials apart and attempts to reassemble them (e.g., puzzles, models, nuts and bolts).
    f) Seeks out activities and materials that support his/her curiosity.
    g) Willingly engages in new experiences and activities.

Persistence

5. Demonstrates persistence.
    a) Maintains focus on a task.
    b) Seeks assistance when the next step seems unclear or appears too difficult.
    c) Modifies strategies used to complete a task.

Domain 2: Physical Development and Health

Physical Development and Health: Foundational Skills

NOTE: In prekindergarten, children are expected to demonstrate increasing awareness and competence in the areas that follow.

Physical Development

1. Uses senses to assist and guide learning.
   a) Identifies sights, smells, sounds, tastes and textures.
   b) Compares and contrasts different sights, smells, sounds, tastes, and textures.
   c) Uses descriptive words to discuss sights, smells, sounds, tastes, and textures.
2. Uses sensory information to plan and carry out movements.
   a) Demonstrates appropriate body awareness when moving in different spaces.
   b) Exhibits appropriate body movements when carrying out a task.
   c) Demonstrates awareness of spatial boundaries and the ability to work within them.
3. Demonstrates coordination and control of large muscles.
   a) Displays an upright posture when standing or seated.
   b) Maintains balance during sitting, standing, and movement activities.
   c) Runs, jumps, walks in a straight line, and hops on one foot.
   d) Climbs stairs using alternating feet.
   e) Puts on age appropriate clothing items, such as shirts, jackets, pants, shoes, etc.
4. Combines a sequence of large motor skills with and without the use of equipment.
   a) Navigates age appropriate playground equipment.
   b) Peddles a tricycle.
   c) Throws, catches or kicks a large, light-weight ball (8" - 10").
   d) Participates in a series of large motor movements or activities such as, dancing, follow the leader, or Simon Says.
5. Demonstrates eye-hand coordination and dexterity needed to manipulate objects.
   a) Uses pincher grasp (index finger and thumb).
   b) Demonstrates ability to engage in finger plays.
   c) Uses materials such as pencils, paint brushes, eating utensils and blunt scissors effectively.

d) Manipulates small objects with ease (fits objects into holes, strings wooden beads, stacks mini blocks, uses geo boards, etc.).

e) Uses buttons, zippers, snaps, and hook and loop tape successfully.

Physical Fitness

6. Engages in a variety of physical fitness activities.

a) Engages in large motor activities (e.g., marching, hopping, running, jumping, dancing) in increasingly longer periods of time as skill and endurance develops.

b) Explores, practices, and performs skill sets: throwing, pushing, pulling, catching, balancing, etc.

c) Participates in activities designed to strengthen major muscle groups.

d) Participates in activities to promote balance and flexibility.

Health and Well Being

7. Demonstrates personal care and hygiene skills.

a) Demonstrates growing independence in using personal hygiene skills (e.g., washing hands, brushing teeth, toileting, etc.)

b) Exhibits self help skills when dressing, cleaning up, participating in meals, etc.

c) Recognizes and communicates when experiencing symptoms of illness.

8. Demonstrates awareness and understanding of healthy habits.

a) Recognizes the importance of good nutrition, water, rest and sleep in order to be healthy.

b) Talks about food choices in relationship to allergies and overall health.

c) Relates healthy behaviors to good personal health (milk for strong bones, spinach for strong muscles).

d) Describes the role of doctors, dentists and other health care workers in keeping him/herself healthy.

Health and Safety

9. Demonstrates awareness and understanding of safety rules.

a) Verbalizes and demonstrates safety rules such as holding an adult's hand when walking on sidewalks or near a street.

b) Communicates to peers and adults when observing unsafe behavior (e.g., Tommy is throwing rocks).

c) Understands that some practices could be unsafe (e.g., playing with matches, playing near a busy street, not wearing a bike helmet).

d) Demonstrates knowledge of bus safety (e.g., crosses in front of the bus after the driver signals, wears seatbelt).

e) Participates in fire evacuation drills, understands what the alarm bell is and the need to go to a safe location, etc.

f) Explains how to get help in emergency situations.

Domain 3: Social and Emotional Development

Social and Emotional Development: Foundational Skills

Note: In prekindergarten, children are expected to demonstrate increasing awareness and competence in the areas that follow.

Self Concept and Self Awareness

1. Recognizes himself/herself as a unique individual having his/her own abilities, characteristics, feelings and interests.
   a) Describes himself/herself using several different characteristics.
   b) Identifies self as being part of a family and identifies being connected to at least one significant adult.
   c) Demonstrates knowledge of his/her own uniqueness (talent, interests, preferences, gender, culture, etc.).
   d) Exhibits self confidence by attempting new tasks independent of prompting or reinforcement.
   e) Compares and/or contrasts self to others (e.g., physical characteristics, preferences, feelings, abilities).
   f) Identifies the range of feelings he/she experiences, and that his/her feelings may change over time, as the environment changes, and in response to the behavior of others.
   g) Displays accomplishment, contentment, and acknowledgement when completing a task or solving a problem by himself/herself (e.g., wants to show a peer or adult).

Self Regulation

2. Regulates his/her responses to needs, feelings and events.
   a) Expresses feelings, needs, opinions and desires in a way that is appropriate to the situation.
   b) Appropriately names types of emotions (e.g., frustrated, happy, excited, sad) and associates them with different facial expressions, words and behaviors.
   c) Demonstrates an ability to independently modify his/her behavior in different situations.

Relationships with Others

3. Demonstrates and continues to develop positive relationships with significant adults (primary caregivers, teachers and other familiar adults).
    a) Interacts with significant adults.
    b) Seeks guidance from primary caregivers, teachers and other familiar adults.
    c) Transitions into unfamiliar setting with the assistance of familiar adults.
4. Develops positive relationships with their peers.
    a) Approaches children already engaged in play.
    b) Interacts with other children (e.g., in play, conversation, etc.).
    c) Shares materials and toys with other children.
    d) Sustains interactions by cooperating, helping, and suggesting new ideas for play.
    e) Develops close friendship with one or more peers.
    f) Offers support to another child or shows concern when a peer seems distressed.
5. Demonstrates pro-social problem solving skills in social interactions.
    a) Seeks input from others about a problem.
    b) Uses multiple pro-social strategies to resolve conflicts (e.g., trade, take turns, problem solve).
    c) Uses and accepts compromise, with assistance.

Accountability

6. Understands and follows routines and rules.
    a) Displays an understanding of the purpose of rules.
    b) Engages easily in routine activities (e.g., story time, snack time, circle time).
    c) Uses materials purposefully, safely and respectfully as set by group rules.
    d) With assistance, understands that breaking rules have a consequence.
    e) Applies rules in new, but similar situations.
    f) Demonstrates the ability to create new rules for different situations.

Adaptability

7. Adapts to change.
    a) Easily separates himself/herself from parent or caregiver.
    b) Transitions with minimal support between routine activities and new/unexpected occurrences.
    c) Adjusts behavior as appropriate for different settings and /or events.
    d) Uses multiple adaptive strategies to dope with change (e.g., seeking social support from and adult or peer, taking deep breaths, engaging in another activity).

Domain 4: Communication, Language, and Literacy

PART A: APPROACHES TO COMMUNICATION

Note: In prekindergarten, children are expected to demonstrate increasing awareness and competence in the areas that follow.

Motivation

1. Demonstrate that they are motivated to communicate.
   a) Participates in small or large group activities for story telling, singing or finger plays.
   b) Asks questions.
   c) Listens attentively for a variety of purposes (e.g., for enjoyment; to gain information; to perform a task; to learn what happened; to follow directions).
   d) Initiates conversations, both verbally and nonverbally, about things around them.
   e) Nods or gives non verbal cues that he is understanding.
   f) Maintains eye contact when trying to interact with a peer or adult.
   g) Makes choices about how to communicate the ideas he wants to share (e.g., gestures, scribbles, sign language, speaking).

Background Knowledge

2. Demonstrates he/she is building background knowledge.
   a) Asks questions related to a particular item, event or experience.
   b) Correctly identifies meanings of words in read alouds, in conversation, and in the descriptions of everyday items in the world around them.
   c) Uses new vocabulary correctly.
   d) Makes comparisons to words and concepts already known.

Viewing

3. Demonstrates that he/she understand what they observe.
   a) Uses vocabulary relevant to observations.
   b) Identifies emotions by observing faces in pictures and faces of peers and adults.
   c) Asks questions related to visual text and observations.
   d) Makes inferences and draws conclusions based on information from visual text.

e) Begins to identify relevant and irrelevant information, pictures, and symbols related to a familiar topic.

Representing

4. Demonstrates his/her ability to express ideas using a variety of methods.
   a) Uses facial expressions, body language, gestures, and sign language to express ideas.
   b) Uses existing objects to represent desired or imagined objects in play or other purposeful way (e.g., plastic banana for a telephone).
   c) Uses visual media to represent an actual experience.
   d) Reviews and reflects on his/her own representations.
   e) Writes and draws spontaneously to communicate meaning with peers or adults during play.

Vocabulary

5. Demonstrates a growing receptive vocabulary.
   a) Understands and follows spoken directions.
   b) Identifies pictures related to words (show me the white dog).
   c) Responds/reacts to questions/comments indicating he understands meaning (e.g., body language, gestures, facial expressions, and words).
   d) Identifies meanings of words used in read-alouds, in conversation and in descriptions of everyday items in the world around him.
6. Demonstrates a growing expressive vocabulary.
   a) Uses facial expressions, body language, gestures, and sign language to engage in reciprocal conversation.
   b) Uses more complex words in conversation.
   c) Makes use of new and rare words introduced by adults or peers.
   d) Correctly names picture when asked, "What is this?"
   e) Begins to use appropriate volume and speed so spoken message is understood.
   f) Initiates conversations about a book, situation, event or print in the environment.

PART B: ENGLISH LANGUAGE ARTS AND LITERACY

(From the NYS Common Core Learning Standards)

Reading Standards for Literature

Key Ideas and Details

1. With prompting and support, ask and answer about detail(s) in a text.
2. With prompting and support, retell familiar stories.
3. With prompting and support, ask and answer questions about characters and major events in a story.

Craft and Structure

4. Exhibit curiosity and interest in learning new vocabulary (e.g., ask questions about unfamiliar vocabulary).
5. Students interact with a variety of common types of texts (e.g., storybooks, poems, songs).
6. With prompting and support, can describe the role of an author and illustrator.

Integration and Knowledge of Ideas

7. With prompting and support, students will engage in a picture walk to make connections between self, illustrations, and the story.
8. Not applicable to literature.
9. With prompting and support, students will compare and contrast two stories relating to the same topic.
    a) With prompting and support, students will make cultural connections to text and self.

Range of Reading and Level of Text Complexity

10. Actively engage in group reading activities with purpose and understanding.

Responding to Literature

1. With prompting and support, make connections between self, text, and the world around them (text, media, social interaction).

Reading Standards for Informational Text

Key Ideas and Details

1. With prompting and support, ask and answer questions about details in a text.
2. With prompting and support, retell detail(s) in a text.
3. With prompting and support, describe the connection between two events or pieces of information in a text.

Craft and Structure

4. Exhibit curiosity and interest in learning new vocabulary (e.g., ask questions about unfamiliar vocabulary).
5. Identify the front cover, back cover; displays correct orientation of book, page turning skills.
6. With prompting and support, can describe the role of an author and illustrator.

Integration and Knowledge of Ideas

7. With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing or idea in the text an illustration depicts).
8. Not applicable to prekindergarten.
9. With prompting and support, identify basic similarities and differences between two texts on the same topic (e.g., illustrations, descriptions or procedures).

Range of Reading and Level of Text Complexity

10. With prompting and support, actively engage in group reading activities with purpose and understanding.

Reading Standards: Foundational Skills

NOTE: In prekindergarten, children are expected to demonstrate increasing awareness and competence in the areas that follow.

Print Concepts

1. Demonstrate understanding of the organization and basic features of print.
    a) Follow words from left to right, top to bottom, and page by page.
    b) Recognize that spoken words are represented in written language by specific sequences of letters.
    c) Understand that words are separated by spaces in print.
    d) Recognize and name some upper /lowercase letters of the alphabet, especially those in own name.
    e) Recognize that letters are grouped to form words.
    f) Differentiate letters from numerals.

Phonological Awareness

2. Demonstrate an emerging understanding of spoken words, syllables and sounds (phonemes).
    a) Engage in language play (e.g., alliterative language, rhyming, sound patterns).
    b) Recognize and match words that rhyme.
    c) Demonstrate awareness of relationship between sounds and letters.
    d) With support and prompting, isolate and pronounce the initial sounds in words.

Phonics and Word Recognition

3. Demonstrate emergent phonics and word analysis skills.
    a) With prompting and support, demonstrate one-to-one letter-sound correspondence by producing the primary sound of some consonants.
    b) Recognizes own name and common signs and labels in the environment.

Fluency

4. Displays emergent reading behaviors with purpose and understanding (e.g., pretend reading).

Writing Standards

Text Types and Purposes

1. With prompting and support, use a combination of drawing, dictating, or writing to express an opinion about a book or topic (e.g., I like…. because…)
2. With prompting and support, use a combination of drawing, dictating, or writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.
3. With prompting and support, use a combination of drawing, dictating, or writing to narrate a single event and provide a reaction to what happened.

Production and Distribution of Writing

4. Not applicable to prekindergarten (begins in grade 3).
5. With guidance and support, respond to questions and suggestions and add details to strengthen illustration or writing, as needed.
6. With guidance and support, explore a variety of digital tools to produce and publish writing; collaborate with peers.

Research to Build and Present Knowledge

7. With guidance and support, participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them).
8. With guidance and support, recall information from experiences or gather information from provided sources to answer a question.
9. Not applicable to prekindergarten (begins in grade 4).

Range of Writing

10. Not applicable to prekindergarten (begins in grade 3).

Responding to Literature

11. Create and present a poem, dramatization, art work, or personal response to a particular author or theme studied in class, with prompting and support as needed.

Speaking and Listening Standards

Comprehension and Collaboration

1. With guidance and support, participate in collaborative conversations with diverse partners about *pre- kindergarten topics and texts* with peers and adults in small and large groups.
    a) Engage in agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion).
    b) Engage in extended conversations.
    c) Communicate with individuals from different cultural backgrounds.
2. With guidance and support, 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.
3. With guidance and support, ask and answer questions in order to seek help, get information, or clarify something that is not understood.

Presentation of Knowledge and Ideas

4. Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.
5. Add drawings or other visual displays to descriptions as desired to provide additional detail.
6. Demonstrate an emergent ability to express thoughts, feelings and ideas.

Language Standards

Conventions of Standard English

1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
    a) Print some upper- and lower-case letters.(e.g., letters in their name).
    b) Use frequently occurring nouns and verbs (orally).

c) With guidance and support, form regular plural nouns orally by adding /s/ or /es/ (e.g., *dog*, *dogs*; *wish*, *wishes*).

d) Understand and use question words (interrogatives) (e.g., *who*, *what*, *where*, *when*, *why*, *how*).

e) In speech, use the most frequently occurring prepositions (e.g., *to*, *from*, *in*, *out*, *on*, *off*, *for*, *of*, *by*, *with*).

f) With guidance and support, produce and expand complete sentences in shared language activities.

2. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

a) Capitalize the first letter in their name.

b) Attempt to write a letter or letters to represent a word.

c) With guidance and support, attempt to spell simple words phonetically, drawing on knowledge of sound-letter relationships.

Knowledge of Language

3. Use knowledge of language and how language functions in different contexts.

Vocabulary Acquisition and Use

4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *pre-kindergarten reading and content*.

a) Identify new meanings for familiar words and apply them accurately (e.g., knowing *duck* is a bird and learning the verb *to duck*).

5. With guidance and support, explore word relationships and nuances in word meanings.

a) Sort common objects into categories (e.g., shapes, foods) for understanding of the concepts the categories represent.

b) Demonstrate understanding of frequently occurring verbs and adjectives by relating them to their opposites (e.g., up, down, stop, go, in, out).

c) Identify real-life connections between words and their use (e.g., note places at school that are *colorful*).

d) Distinguish shades of meaning among verbs describing the same general action (e.g., *walk*, *march*, *strut*, *prance*) by acting out the meanings.

6. With prompting and support, use words and phrases acquired through conversations, reading and being read to, and responding to texts.

Domain 5: Cognition and Knowledge of the World

Cognition and Knowledge of the World

Mathematics

(From the NYS Common Core Learning Standards)

NOTE: In prekindergarten, children are expected to demonstrate increasing awareness and competence in the areas that follow.

Mathematical Practices

a. Make sense of problems and persevere in solving them.
b. Reason abstractly and quantitatively.
c. Construct viable arguments and critique the reasoning of others.
d. Model with mathematics.
e. Use appropriate tools strategically.
f. Attend to precision.
g. Look for and make use of structure.
h. Look for and express regularity in repeated reasoning.

Overview

Counting and Cardinality

- Know number names and the count sequence.
- Count to tell the number of objects.
- Compare numbers.

Operations and Algebraic Thinking

- Understand addition as adding to, and understand subtraction as taking from.
- Understand simple patterns.

Measurement and Data

- Describe and compare measurable attributes.
- Sort objects and count the number of objects in each category.

Geometry

- Identify and describe shapes (squares, circles, triangles, rectangles).
- Analyze, compare, and sort objects.

Counting and Cardinality

Know number names and the count sequence

1. Count to 20.
2. Represent a number of objects with a written numeral 0 – 5 (with 0 representing a count of no objects).

Count to Tell the Number of Objects

3. Understand the relationship between numbers and quantities to 10; connect counting to cardinality.
   a) When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
   b) Understand that the last number name said tells the number of objects counted. The number of objects is the same.
   c) Regardless of their arrangement or the order in which they were counted.
   d) Understand that each successive number name refers to a quantity that is one larger.
4. Count to answer "how many?" questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as any as 5 things in a scattered configuration; given a number from 1 – 10, count out that many objects.

Compare Numbers

5. Identify whether the number of objects in one group is more, less, greater than, fewer, and/or equal to the number of objects in another group, e.g., by using matching and counting strategies (up to 5 objects).
6. Identify "first" and "last" related to order or position.

Operations and Algebraic Thinking

Understand addition as adding to, and understand subtraction as taking from.

1. Demonstrate an understanding of addition and subtraction by using objects, fingers, and responding to practical situations (e.g., if we have 3 apples and add 2 more, how many apples do we have all together?).

Understand simple patterns.

2. Duplicate and extend (e.g., what comes next?) simple patterns using concrete objects.

Measurement and Data

Describe and compare measurable attributes.

1. Identify measurable attributes of objects, such as length, and weight. Describe them using correct vocabulary (e.g., small, big, short, tall, empty, full, heavy, and light).

Sort objects and count the number of objects in each category.

2. Sort objects into categories; count the numbers of objects in each category (limit category counts to be less than or equal to 10).

Geometry

Identify and describe shapes (squares, circles, triangles, rectangles).

1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as top, bottom, up, down, in front of, behind, over, under, and next to.
2. Correctly name shapes regardless of size.

Analyze, compare, and sort objects.

1. Analyze, compare, and sort two- and three-dimensional shapes and objects, in different sizes, using informal language to describe their similarities, differences, and other attributes (e.g., color, size, and shape).
2. Create and build shapes from components (e.g., sticks and clay balls).

SCIENCE

NOTE: In prekindergarten, children are expected to demonstrate increasing awareness and competence in the areas that follow.

Scientific Thinking

1. Asks questions and makes predictions based on observations and manipulation of things and events in the environment.
   a) Uses senses to gather, explore, and interpret information.
   b) Manipulates and observes objects in his or her surroundings to develop conclusions.
   c) Makes observations and describes changes in objects, living things, and natural events in the environment.
   d) Organizes his or her observations of objects and events by identifying, classifying, etc.
   e) Asks "why," "how," and "what if" questions and seeks answers through experimentation and investigation.
   f) Makes predictions based on background knowledge, previous scientific experiences, and observations of objects and events in the world.
2. Tests predictions through exploration and experimentation.
   a) Gives oral, written or graphic explanations of what he/she wants to learn.
   b) Uses a variety of tools and materials to test predictions through active experimentation (child uses magnifying glass to examine pine needles; child puts large paper clip on water to see if it floats.)
   c) Replicates or changes the experimental approach.
   d) Records and organizes data using graphs, charts, science journals, or other means of recording.
3. Generates explanations and communicates conclusions regarding experiments and explorations.
   a) Compares and contrasts attributes of objects, living things, and events in the environment to organize what they have learned.
   b) Identifies cause and effect relationships.
   c) Verifies predictions by explaining "how" and "why."
   d) Makes age appropriate, logical conclusions about investigations.

e) Shares ideas about objects, living things and other natural events in the environments through words, pictures, and other representations.

Earth and Space

4. Observes and describes characteristics of earth and space.

   a) Investigates and identifies properties of soil, rocks, and minerals.
   b) Investigates and identifies physical properties and characteristics of water (solid, liquid, and gas).
   c) Makes simple observations of the characteristics and movements of sun, moon, stars, and clouds.
   d) Observes and discusses changes in weather and seasons using common weather related vocabulary (e.g., rainy, sunny, snowy, windy, cloudy, etc.).
   e) Expresses ways the environment provides natural resources that are needed by people (e.g., wood for lumber to build shelter, water for drinking).
   f) Demonstrates ways that each person is responsible for protecting our planet (e.g., recycling plastic, glass, and cardboard, reusing a plastic container sandwich box, mending clothing rather than throwing away, etc.).

Living Things

5. Observes and describes characteristics of living things.

   a) Observes and discusses similarities, differences, and categories of plants and animals.
   b) Identifies things as living or non-living based on characteristics, such as breathes, moves by itself, grows.
   c) Explains why plants and animals need water and food.
   d) Observes and discusses similarities, differences, and categories of plants and animals.
   e) Identifies things as living or non-living based on characteristics, such as breathes, moves by itself, grows.
   f) Explains why plants and animals need water and food.
   g) Describes simple life cycles of plants and animals.
   h) Describes and identifies the different structures of familiar plants and animals. (Plants have stems, roots, leaves; animals have eyes, mouths, ears, etc.)
   i) Recognizes that plants and animals have some characteristics of their "parents."
   j) Observes, describes, and compares the habitats of plants and animals.
   k) Observes, records, and explains how plants and animals respond to changes in the environment and changes in seasons.

Physical Properties

6. Acquires knowledge about the physical properties of the world.

   a) Describes, compares, and categorizes objects based on their properties.

   b) Uses senses to explore different environments (classroom, playground, field trips).

   c) Recognizes and describes the effect of his/her own actions on objects.

   d) Describes tools and their specific functions (e.g., hammer for pounding nails).

   e) Uses a variety of tools to explore the world and learn how things work (such as magnifiers and balance scales).

   f) Investigates common interactions between matter and energy (butter melting in cooking activities; cream turning to butter; peanuts becoming peanut butter, etc.)

   g) Describes and compares the effects of common forces (pushes and pulls) on objects, such as those caused by gravity, magnetism, and mechanical forces.

   h) Explores and discusses simple chemical reactions with teacher assistance (e.g., baking soda and water, mixing oil and water).

SOCIAL STUDIES

NOTE: In prekindergarten, children are expected to demonstrate increasing awareness and competence in the areas that follow.

Geography

1. Develops a basic awareness of self as an individual, self within the context of family, and self within the context of community.
    a) Identifies him/herself by using characteristics such as gender, ethnicity, race, religion, language and culture.
    b) Describes how each person is unique and important.
    c) Identifies family members, family characteristics and functions.
    d) Identifies as a member of a family.
    e) States how families are similar and different.
    f) Describes his own community and/or cultural group.
    g) Describes how people within a community are alike and different (e.g., eat different foods, wear different clothing, speak different languages).
    h) Recognizes some community workers and describes what they do.
2. Demonstrates awareness and appreciation of their own culture and other cultures.
    a) Talks about and/or shows items related to his/her family and cultural traditions to others.
    b) Questions why and/or how people are similar/different.
    c) Describes some of the holidays, dances, foods, costumes and special events, related to his/her own culture.
    d) Demonstrates an understanding of similarities and differences between and among individual people and families.
3. Demonstrates knowledge of the relationship between people, places, and regions.
    a) Identifies features of own home and familiar places.
    b) Names the street, neighborhood, city or and town where he/she lives.
    c) Uses words that indicate direction, position and relative distance.
    d) Describes topographical features of familiar places (hill, river, roads, mountains, etc.).

e) Creates representations of topographical features in art work, and/or while playing with blocks, sand or other materials.

f) Is aware of his/her surroundings.

History

4. Develops an understanding of how people and things change over time and how to relate past events to their present and future activities.

   a) Identifies routines and common occurrences in his/her life.

   b) Identifies changes over time in him/herself, his/her families, and in his/her wider community.

   c) Retells important events in sequential order.

   d) Demonstrates interest in current events that relate to family, culture, and community.

   e) Uses words and phrases that differentiate between events that happen in the past, present and future, e.g., uses phrases like "when I was a baby…" or "before I moved to my new house."

Civics, Citizenship and Government

5. Demonstrates an understanding of roles, rights, and responsibilities.

   a) Recognizes that all children and adults have roles, rights, and responsibilities at home, school, in the classroom and in the community.

   b) Expresses that rules are for everyone.

   c) Identifies rules that protect him/herself and others.

   d) Explains that rules affect children and adults.

   e) Describes possible consequences when rules are not followed.

6. Begins to learn the basic civic and democratic principles.

   a) Participates in making group rules and/or rules for daily routines and transitions.

   b) Follows rules and may remind others of the rules.

   c) Applies the skills of communication, cooperation, respect and empathy with others.

   d) Demonstrates preferences and choices by participating when the class votes to make simple decisions.

Economics

7. Develops a basic understanding of economic concepts within a community.

   a) Demonstrates an understanding that money is needed to exchange for some goods and services.

b) Demonstrates understanding that money comes in different forms, i.e., coins and paper money.

c) Recognizes the roles/contributions of community workers as they produce goods/services that people need.

d) Recognizes that goods and services may be purchased using different forms of payment, (e.g., coins, paper money, checks, electronic payment, credit cards).

Career Development

8. Demonstrates interest and awareness about a wide variety of careers and work environments.

a) Asks questions about and shows an interest in the jobs of his/her family members and/or "community helpers."

b) Recognizes that people depend on "community helpers" to provide goods and services.

c) Identifies the tools and equipment that correspond to various roles and jobs.

d) Takes on the role of a "community helper", e.g., dramatic play or in acting out a story or song.

e) Indicates an interest in a future career by making statements like, "I want to be a firefighter when I grow up."

f) Talks about a parent's, a relative's or a neighbor's job.

THE ARTS

NOTE: In prekindergarten, children are expected to demonstrate increasing awareness and competence in the areas that follow.

Visual Arts

1. Expresses oneself and represents what he/she knows, thinks, believes and feels through visual arts.
    a) Experiments with a variety of mediums and methods of using art materials (such as using a big brush to paint broad strokes, combining colors, etc.).
    b) Shows an interest in what can be created with tools, texture, color and technique.
    c) Uses materials to build and create "pieces" that represent another item (blocks become a castle; clay becomes a snake).
    d) Chooses materials and subjects with intent and purpose.
    e) Paints, draws and constructs models based on observations.
2. Responds and react to visual arts created by themselves and others.
    a) Expresses an interest in drawings, sculptures, models, paintings, and art creations of others.
    b) Identifies similarities and differences among samples of visual art.
    c) Shares opinions about visual arts, creations, and experiences.

Music

3. Expresses oneself by engaging in musical activities.
    a) Participates with increasing interest and enjoyment in a variety of music activities including listening to music, singing songs, performing finger plays, and experimenting with various musical instruments.
    b) Enjoys singing, making up silly and rhyming verses, imitating rhythmic patterns, and using music to tell stories and express feelings.
    c) Engages in music activities having different moods, tempos, and rhythms.
    d) Uses and explores traditional and non-traditional sound sources including those that are electronic.
    e) Creates sounds using traditional instruments (bells, drums, recorders, etc) and non-traditional instruments (tin cans, oatmeal boxes, containers filled with water).

4. Responds and reacts during musical activities.
    a) Observes a variety of musical performances, both vocal and instrumental.
    b) Moves and keeps rhythm to different kinds of music.
    c) Reacts to music through oral, written or visual expression.
    d) Compares and contrasts different samples of music.
    e) Expresses his/her preference for certain kinds of music.
    f) Repeats, responds and/or reacts to lyrics and/or melodies.

Theatre / Dramatic Play

5. Participates in a variety of dramatic play activities to represent fantasy and real life experiences.
    a) Represents fantasy, real-life, imagination, and literature through dramatic play.
    b) Assumes the role of something or someone else and attempts to speak in the appropriate manner and tone.
    c) Participates in teacher-guided and/or spontaneous dramatic play activities such as acting out a story.
    d) Uses basic props, and costume pieces to establish time, setting, and character.
6. Responds and reacts to theater and drama presentations.
    a) Demonstrates age-appropriate behavior when observing theatre and drama.
    b) Expresses his/her feelings about theatrical or dramatic productions or experiences through oral, written or visual expressions.

Dance / Creative Movement

7. Expresses what he/she knows, thinks, feels and believes through dance and creative movement.
    a) Demonstrates concepts (feelings, directions, words, ideas, etc.) through creative movement.
    b) Uses movement to interpret or imitate feelings, animals, and such things as plants growing, or a rainstorm.
    c) Uses creativity using his/her body (dance, march, hop, jump, sway, clap, snap, stomp, twist, turn, etc.).
    d) Uses creative movement props such as crepe paper, streamers, hoops, and scarves to create special movements and dances.
    e) Demonstrates a wide variety of movements and positions.
    f) Learns simple, repetitive dance steps and routines.
    g) Moves in spontaneous and imaginative ways to music, songs, rhythm, and silence.
8. Responds and reacts to dance and creative movement.
    a) Imitates parts of dance or movement activity that he/she enjoys.
    b) Compares and contrasts different forms of dance.

c) Demonstrates age appropriate audience behavior when observing dance and creative movement productions.

d) Describes interpretations and reactions to dance and movement experience (e.g., drawing a picture, acting it out, retelling a story).

Cultural Differences

9. Expresses an understanding of artistic difference among cultures.

a) Compares his/her artistic creations with those from other cultures.

b) Describes similarities and differences in dance and creative movements from other cultures.

c) Distinguishes between different sounds of music and types of instruments from other cultures.

d) Discusses dances and dramatizations from various cultures.

TECHNOLOGY

NOTE: In prekindergarten, children are expected to demonstrate increasing awareness and competence in the areas that follow.

Foundations to Technology

1. Describes types of materials and how they're used.
   a) Discusses or describes characteristics of materials in the environment.
   b) Explains some uses for materials, e.g., wood, fur, plastic.
   c) Creates structures with various materials to determine which do/don't work to achieve the desired purpose, (e.g., glue, tape; paper, cardboard, foam, plastic, wood; straws, spools).
2. Explores and uses various types of tools appropriately.
   a) Identifies the functions of certain tools (e.g., cell phone, pulley, hammer, hearing aid, and microwave).
   b) Follows simple directions for appropriate use of tools and demonstrates how they are used (e.g., computer, hammer, digital media or simple machine).
   c) Describes and uses a variety of tools independently or with assistance (e.g., scissors, nut and bolt, incline plane, or lever).
   d) Uses common tools to create simple objects or structures.
   e) Invents and/or constructs simple objects or structures using common tools and materials in a safe manner (e.g., wood, glue, rulers, sandpaper, hammer, etc.).
3. Expresses an understanding of how technology affects them in daily life, and how it can be used to solve problems.
   a) Identifies examples of technology used in daily life (e.g., telephone, computers, car).
   b) Describes how technology can make finding information, completing tasks and solving problems faster and easier.
   c) Identifies examples of how technology affects the environment, including home and school environments.

Using Technology

4. Understands the operation of technology systems.
    a) Uses input and output devices to successfully operate technology systems (e.g., keyboard, monitor, printer, vending machine).
    b) Begins using appropriate vocabulary when describing the nature and operation of a technological system (e.g., pedal power moves a bicycle, gas moves a car, batteries operate a toy).
    c) Gives examples of how technological systems are used (e.g., internet, cameras, cell phones).
5. Uses the knowledge of technology to increase learning.
    a) Uses computer to write, draw and explore concepts.
    b) Learns basic skills by using age appropriate computer programs.
    c) Uses technology tools independently (e.g., instructional media games, digital cameras).

RESEARCH AND SUPPORTING MATERIAL

DOMAIN 1: APPROACHES TO LEARNING

While all of the domains are undoubtedly equal in importance, *Approaches to Learning* captures the very essence of children: their inclinations, their dispositions, their attitudes, and their personal styles. *Approaches to Learning* is influenced by such profound constants as gender, temperament, family expectations, and cultural values – constants present at birth and increasingly significant throughout the school years.[2]

Approaches to Learning was formally recognized as a separate and distinct domain integral to the development of children to their full potential almost twenty years ago. In 1989, the National Education Goals Panel (NEGP) was established to help improve the quality of education in the United States. Its very first national goal, "all children will start school ready to learn," prompted the release of *Reconsidering Children's Early Development and Learning.* This widely accepted and still highly regarded work brought together the input of over 350 scholars on what exactly young children should know and be able to do. To the four domains historically associated with children's development – physical, socio-emotional, language, and cognitive – was added a fifth, somewhat new, domain that required explanation:

> *Learning styles [how children approach learning situations] are composed of aggregated variables that characterize ways of responding across situations. Learning styles, in contrast to dispositions, are malleable and include variables that affect how children attitudinally address the learning process: their openness to and curiosity about new tasks and challenges; their initiative, task persistence, and attentiveness; their approach to reflection and interpretation; their capacity for invention and imagination; and their cognitive approaches to tasks.*[1]

Since then, *Approaches to Learning* has clearly infiltrated the mainstream thinking of educators. Most State educational agencies that have established early learning standards – what children should know and be able to do before kindergarten entry – have either included *approaches to learning* as a distinct domain or have folded aspects of it, such as curiosity or persistence, into their standards. Studies of school readiness, and even of later success in school, now specifically address *approaches to learning.* For example, the nation-wide *Early Childhood Longitudinal Study, Kindergarten Class of 1998-99* directly assessed the developmental status of children entering kindergarten across five domains, one of which was *approaches to learning.*

Since its debut, *Approaches to Learning* has been regarded as the less well-defined of the domains. As scholars debate and policy makers try to implement, the burning question is, "What does it mean for teachers? . . . for parents? . . . for children?" The answer: teachers and parents must intentionally design learning environments that foster children's natural curiosity, initiative, engagement, persistence, and creativity. The environments must be safe for students to ask questions, to embark on and embrace new tasks, to persevere, and to suggest original solutions. It is absolutely essential that such learning

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[2] National Education Goals Panel, 2002.

environments are not contrived, but rather, engaging and relevant to the child and reflective of the child's interests. Learning what motivates each child will help teachers, parents and caregivers support individual differences and help children discover their own learning style.

Curiosity

"Why?" "How come?" "What if …?"

As any caregiver of young children knows, the preschool years are peppered with seemingly endless questions. Preschoolers are curious about themselves, about their relationships with others, and about the worlds they are encountering. But, even before the pre-school stage, children are expressing their curiosity, albeit nonverbally. A new-born visually tracks interesting objects. An older baby "tastes" anything and everything – edible or not – to find out more about it.

Throughout the early years, children's curiosity prompts exploration and experimentation. They take it upon themselves to learn more – by mimicking, questioning – about whatever has piqued their interest. Research shows, in fact, that self-initiated activity "makes it possible for young children to be involved in intrinsically interesting experiences that help them to construct understandings of their world, remain focused during activity, and develop a love for learning."[3] By observing where children's natural curiosity leads them, caregivers can create environments in which children can direct their own learning. Scholars in early education concur that "preschool curriculum is most effective when it takes advantage of children's own interests and curiosity."[4]

Initiative

Whereas curiosity may be a characteristic universal to all children, the degree and manner in which that curiosity is acted upon by each child varies tremendously. Initiative is the willingness to take on tasks or reasonable risks to learn more. Consider, for example, two children playing with race cars. Their pre-school teacher comments "Look at those cars move! What do you think makes them go?" The seed thus planted, one child is content to independently look at a book describing the parts of a car, while another's curiosity isn't satisfied until an adult or peer helps disassemble the car and put it back together again. Both children have taken the initiative to find out more; at the same time, they may have revealed clues to their preferred learning styles – print-oriented and independent in one instance, kinesthetic and small group in the other.

It is easy to fall into assumptions about learning styles based on a child's temperament: "Of course, our print-oriented friend chose a book, he's so shy." And, there is some validity to this connection between personality and approaches to learning. One pilot study of doctoral students used a five factor model (extraversion, agreeableness, conscientiousness, neuroticism, and openness) to explore the relationship between personality and learning. It found statistical evidence that certain personalities adopt either a strategic, surface, or deep approach to learning.[5] However, other research keeps alive the decades-old argument of nature versus nurture. A study of infants' exploration of new objects found that "infants who have spent a lot of time with caregivers who name, show, and demonstrate objects typically spend

[3] Hohmann & Weikart as cited in Alabama Performance Standards for 4-year-olds: Alabama's Pre-Kindergarten Initiative, 2004
[4] Bowman, Donovan, and Burns (2001) *Eager to Learn: Educating Our Preschoolers* as cited in Head Start Child Outcomes Framework, Domain 7: Approaches to Learning
[5] Heinstrom (2000). The Impact of Personality and Approaches to Learning on Information Behavior.

more time with caregivers and objects together," whereas infants who have not received such interaction will spend more time exploring the objects only.[6]

This finding provokes thought about how influential familial values and cultural expectations can be on children's initiative. Among different families and cultures, there is a broad spectrum of belief about the role children play in their own learning, whether expected to learn through "observation, imitation, and non-verbal communication," encouraged to actively engage in discussion with children and adults, or regarded as quiet recipients of parents' instruction.[7] In any case, fostering initiative in children can only be effective within the context of both:

- The children's temperament – Are there different expectations for different temperaments (e.g., quiet and shy versus people-oriented)?
- The style of care they have received – How children are encouraged to learn at home and through their cultural experiences.

Engagement

"Engage," as a transitive verb, means "to obtain and hold the attention of." Transitive verbs express action that is carried from subject to object, such as "To engage her students, the preschool teacher connected the lesson to their holiday celebration." Alternatively, the intransitive meaning of the verb is "to involve oneself," suggesting an internal source of action. "Tamika was so engaged in her play, she lost track of time." For either definition, young children's engagement – in learning, but also in play as a means of learning – is paramount to their development and success.

As noted earlier, self-initiated activity, or learning more about something already of interest, lends itself to a love of learning. It has been noted that "infants and toddlers usually show pleasure when they are successful at manipulating their environment and at overcoming barriers to reach a goal." This prompted at least one early researcher to maintain that young children are motivated to explore their surroundings, overcome obstacles, and master their environment – in other words, to engage.[8]

In the ideal world, all subjects are either so appealing by nature, or presented so appealingly by skillful teachers, that learners' engagement is automatic. Despite educators' best efforts, however, school tasks and activities are not always of intrinsic interest to every child. Learning to engage in challenging or frustrating tasks is an indicator of children's school readiness.

How is engagement encouraged? Start by harnessing the pride and satisfaction children gain from self-chosen play or projects. The natural desire to excel in that which they are interested will propel them to overcome challenges. Point out that hard work and effort, rather than intelligence or luck, powered their success. When this is realized, according to researchers, children become engaged and motivated.[9] When faced with the next challenge – learning something "off the radar" of interest, for example – that sense of accomplishment can be re-invoked.

[6] Wachs and Combs. (1995) as cited in Iowa Early Learning Standards.
[7] NEGP. Reconsidering Children's Early Development and Learning, 1995.
[8] White (1995) as cited in Iowa Early Learning Standards.
[9] Dweck (1999) as cited in Head Start Child Outcomes Framework, Domain 7: Approaches to Learning.

Persistence

Learning how to persevere is not only key to success in school, but an important life skill as well. A recent study found that persistence "is one of the critical elements in successful learning [and] the ability to foster, nourish, and support the development of persistence is a crucial skill set for teachers."[10] When leaders in business were asked about the characteristics needed to guide companies through change, "perseverance" was most often cited.[11]

What does persistence mean for preschoolers? It's maintaining focus on, and investing energy into, a task. It's tuning out distractions and interruptions. It's following a series of steps to create a project. It's knowing when to accept, and when to seek help from an adult or another child when the next step is unclear or too difficult.

As with all of the components associated with approaches to learning, persistence varies among children. This variation may be attributed, in part, to the child's temperament, but other factors have surfaced as being influential as well.[12] Parents and teachers who participated in a longitudinal study of children entering kindergarten reported that "girls persist at tasks more often than boys, older kindergartners persist at tasks more often than the younger, and children not at risk persist at tasks more often than children at risk."[13] Based on the study's definition of "at risk," it appears that persistence can be impacted by the physical (gender), the developmental (age), and the socio-economic status of mothers, particularly single mothers, and/or mothers with less than a high school education.

These findings – that persistence is more than what one is born with – are important for caregivers of young children to understand. Both consciously and unconsciously, parents and early childhood educators are shaping this critical skill. Adults are often overheard expressing encouragement ("Oh, what a beautiful picture you've colored! What can you tell me about it?), but do their actions transmit the same message about persistence? According to researchers Stipek and Greene (2001), "toddlers show more persistence in activities when caregivers promptly respond to their requests for help." If asking for assistance is a signal of a child's desire to persist, it is important that caregivers be responsive to that need. The value of persistence is thereby reinforced.

Creativity

According to Dr. Sharon Lynn Kagan, renowned expert on early learning standards and author of *Young Children and Creativity: Lessons from the National Education Goals Panel*, "creativity in American early childhood education has often been understood as a focus on specific activities associated with creative expression: art, music, and drama." She goes on to say, however, that today's view of creativity, "embraces it as an approach that encourages invention and problem-solving in all aspects of the curriculum: science, social studies, literacy, and numeracy."[14]

Creativity, then, is the ability to solve problems. It is creating new connections from previous experiences and applying familiar strategies to new situations. Creative learners seek one or more solutions to a problem by actively exploring through trial and error and by observing and interacting with others. This

[10] QIA Motivating Skills for Life Learners to Progress, Persist, and Achieve, 2006.
[11] Kotter, John P. (1996) Leading Change. Harvard Business School Press.
[12] Stipek and Greene (2001) as cited in Iowa Early Learning Standards.
[13] U.S. Department of Education (Fall 1998) Early Childhood Longitudinal Study, Kindergarten Class of 1998-99.
[14] Sharon Lynn Kagan, Ed.D (2003) *Young Children and Creativity: Lessons from the National Education Goals Panel*

has been observed in children as young as infants. For example, when unable to reach a toy at the edge of her blanket, a baby might instead tug on the blanket until the toy is in reach. A three-year-old has discovered something stuck in his cup. Having seen his father pry things out with a screwdriver, the boy proceeds to poke his play drumstick into the cup to loosen the object. Both of these children were creative in addressing the task at hand.

Both children were allowed the opportunity to be creative. Had an adult intervened in either case, by handing the toy to the baby or offering to dislodge the object from the cup, the child would have no need to problem-solve.

It is important for caregivers to recognize naturally occurring opportunities for children to problem-solve and to allow children the autonomy to experiment in those opportunities. As concluded by Piaget, caregivers can encourage problem-solving and can promote creativity "by making problem-solving opportunities available with a wide variety of materials, by encouraging infants and toddlers to experiment with solutions, by not interfering too quickly to solve problems for them, and by helping them notice the results of their experiments."

DOMAIN 2: PHYSICAL DEVELOPMENT AND HEALTH

In all of the ways young children develop, perhaps the most dramatic and probably the earliest observed, is physical growth. New parents are astounded at how quickly their infants grow – on average, tripling in weight and doubling in length during their first year. While that rate does slow somewhat, children are still gaining up to 3.5 inches in height, per year, when they enter kindergarten. [15] Furthermore, the first five years mark an amazing transformation in children's bodies. Their bones, muscles, joints, nerves, and synapses learn to work together to produce that first smile, that first "DaDa," that first step – before long the baby is an independent preschooler riding a tricycle.

Information about children's physical milestones is abundant. At wellness visits, pediatricians talk in percentiles, comparing the height and weight of the patient to his or her peers. *Women, Infants, and Children* programs provide information and resources on what constitutes healthy growth to the parents who receive their services. Numerous books, pamphlets, and internet sites feature descriptions of children's ages and expected abilities. Even well-meaning grandmothers are happy to share their opinion on the best age to toilet-train. If parents and caregivers somehow escape this deluge of information, it is nonetheless inevitable that they will – on their own – notice differences between their children and their playmates. "Why can't my daughter form letters as well as her friend does?" "Our Johnny connects with the ball every time, but some of his teammates…"

Expectations that derive from comparing children to their peers – whether formally presented in the guise of height/weight percentiles or informally observed during play – can be both valuable and dangerous. At the first sign of deviance from the "normal," it may be natural for parents to hit the panic button and ask, "What's wrong with my child?" In most cases, there is nothing wrong. Children's growth is highly dependent on many factors, such as genetic potential, quality of prenatal care, and overall nutrition. To expect "by the-book" growth at every checkpoint is unrealistic. On the other hand, repeated occurrences of slower-than-expected growth or patterns of failing to meet physical milestones

[15] M.J. Hockenberry and D. Wilson (2007) "Nursing Care of Infants and Children (8th Ed.) St Louis: MI, Mosby Elsevier

may be cues for investigating further into possible causes, such as infections or chronic disease, psychosocial health, growth hormone deficiency, and other disorders.[16] Many children with delayed growth can also have delays in other areas of development, so it is important to rule out metabolic problems.

It is also important to consider the impact that physical development has on learning. As coordination improves and bones grow, children can undertake increasingly complex physical endeavors. They learn to roll over, to scoot or crawl, to walk, to run, and so on. They progress to the next level of complexity when their bodies are able to support that level. Children learning to write, for example, go through distinct stages based, in part, on physical ability. Scribbling is often recognized as an important precursor to writing, but the process of learning to write actually begins far earlier than the first time the child puts crayon to paper. Being able to hold that crayon requires the fine-motor skill of coordinating index finger and thumb. By their first birthday, babies demonstrate this "pincer grasp" by picking up small objects like cheerios. But, babies are progressing toward this skill from as early as six months, when they pick up large objects by pushing their whole hand over a toy and curling their fingers around it. [17]

Between three and four months, babies begin developing the gross-motor skills that will eventually allow them to control a pencil, which "depends on stability of the shoulder and arm."[18] Babies strengthen their shoulders and arms every time they push up to raise their heads and shoulders during "tummy-time" and later, when they begin crawling. Crawling also reinforces the ability to cross the body's midline, developing directionality, an important skill for writing left to right.[19] Remarkably, even the act of gazing into babies' eyes helps them learn to focus their vision, which develops into the eye-hand coordination necessary for forming letters. Proper sensory development, then, is also integral to the multifaceted process of writing.

Placing objects within reach, providing plenty of tummy-time, and interacting one-on-one, eye-to-eye are but a few of the ways that caregivers can promote the fine-motor, gross-motor, and sensory development of children. Perhaps the greatest gift a caregiver can offer, however, is to respect each child as an individual who will develop at a rate unique to him or herself. For each child, there will be abilities, there will be challenges, and there will be supports for those challenges. A child diagnosed with autism may require occupational therapy to address sensory problems. A preschooler struggling with writing may benefit from a pencil grip. It is important that every child, regardless of physical ability or physical challenge, receives the support necessary to not only engage in daily activities, but also to learn.

Teachers' informal observations of the relationship between children's physical well-being and their ability to learn have been confirmed by numerous studies. For example, research shows that children who don't eat breakfast have trouble concentrating at school, becoming restless by late morning as glucose levels, the brain's basic fuel, drop. This news is made more troubling by a finding in a Carnegie Foundation Report (1990) in which more than half of the teachers surveyed stated that poor nourishment is a problem at their school. Furthermore, "children who suffer from poor nutrition during the brain's formative years score much lower on tests of vocabulary, reading comprehension, arithmetic,

[16] U.S. National Library of Medicine and the National Institutes of Health. *MedLine Plus: Delayed Growth.* http://www.nlm.nih.gov/medlineplus/ency/article/003021.htm
[17] Graham, Janice. Wondertime, "Get a Grip". http://wondertime.go.com/learning/article/get-a-grip-pincer-grasp.html (date retrieved : 10/7/09)
[18] Neuman, Susan B., Carol Copple, & Sue Bredekamp. Learning to Read and Write: Developmentally Appropriate Practices for Young Children (2000) National Association
[19] Shamberg, Shoshana. Preparing Mind and Body for Childhood Development. Simple sensory motor strategies for childcare providers (2009)

and general knowledge."[20] On the other hand, children who do eat a nutritious breakfast not only maintain their attention in late morning, but also display a quicker and more accurate working memory, are better able to perform complex tasks, and make fewer errors in problem-solving activities.[21] It has also been found that regular physical activity can help improve mathematics, reading, and writing test scores, increase concentration, and reduce disruptive behavior, suggesting strongly that the "physical well-being of students has a direct impact on their ability to achieve academically." [22]

How can children be expected to learn if they are depressed, bullied, stressed, or abused? The National Association of State Boards of Education perhaps summarizes it best: "Health and success in school are interrelated" (1998). While proper nutrition and physical fitness are key contributors to good health, other factors impacting a child's sense of well being have also been identified. The United States Department of Education's belief that "[t]oo many of our children start school unready to meet the challenges of learning, and are adversely influenced by… drug use and alcohol abuse, random violence, adolescent pregnancy, AIDS, and the rest," is backed by both state and federal mandates for tobacco-free buildings, drug- and gun-free zones, immunization requirements, and the 2004 Child Nutrition Reauthorization Act.[23,24] The American Cancer Society maintains that children "who face violence, hunger, substance abuse, unintended pregnancy, and despair cannot possibly focus on academic excellence. There is no curriculum brilliant enough to compensate for a hungry stomach or a distracted mind."[25]

DOMAIN 3: SOCIAL AND EMOTIONAL DEVELOPMENT

Historically, the quality of many educational systems has been determined by measures of reading, writing and mathematics. Standardized tests and screening devices may well capture the extent to which students – whether incoming kindergartners, fourth-graders, eighth-graders, or high school graduates – can understand and express ideas or compute figures, but many such tests are less able to portray "non-academic" skills that are the keys to success in school and in life. It is imperative that individuals are able to form positive relationships with others, for it is those relationships that give meaning to their experiences in the home, in school, and in the larger community.

In this increasingly globalized and shrinking world, ensuring the healthy social and emotional development of preschoolers is now more critical than ever. Preschool children must learn to be aware of and comfortable with themselves and others and to recognize and manage their emotions. At this age, engaging in respectful two-way interactions with adults is as important as forming positive relationships with peers. Children should demonstrate trust with familiar adults and cooperation with their peers. They must also know when to seek guidance from adults and how to problem-solve with their peers and

[20] Brown, L and Pollitt, E. 1996 "Malnutrition, poverty, and intellectual development." as cited in Action for Healthy Kids. "The Role of Sound Nutrition and Physical Activity in Academic Achievement."
[21] Dairy Council of California. "Good Nutrition: The First Step in Getting Kids Ready to Learn." (1997)
[22] Shephard, R.J. 2008 "Curricular Physical Activity and Academic Performance" as cited in Action for Healthy Kids. "The Role of Sound Nutrition and Physical Activity in Academic Achievement."
[23] United States Department of Education. "America 2000: An Education Strategy Sourcebook" as cited in Association of State and Territorial Health Officials (ASTHO) and the Society of State Directors of Health, Physical Education and Recreation (SSDHPER). "Making the Connection: Health and Student Achievement." 2002
[24] Marx, E., Wooley, S., and Donica, B. "A Coordinated Approach to Health and Learning." The Healthy Child. Vol 85, No. 3. Jan/Feb 2006. Retrieved 5/28/08 from www.nawsp.org/ContentLoad.do?contentId=1788&action=print
[25] American Cancer Society. "*National Action Plan for Comprehensive School Health Education*" as cited in Association of State and Territorial Health Officials (ASTHO) and the Society of State Directors of Health, Physical Education and Recreation (SSDHPER). "Making the Connection: Health and Student Achievement." 2002

independently. It is with these skills that children will be best prepared to self-regulate and adapt to new situations.

Dr. Edward Zigler, renowned child development expert and one of the architects of Head Start, writes:

> *"…cognitive skills are not the sole determinant of how successful a child will be in school or in life. Nor does intelligence develop independently of social-emotional and other systems of human development. Think about the not-so-simple task of learning how to tie a shoe. A child must have the cognitive ability to memorize the steps involved and their order, the fine motor skills and eyesight needed, and the motivation to want to learn the task and to keep trying until he or she succeeds."*[26]

The measure of social and emotional development has long been the "missing piece" of intelligence testing. Alfred Binet, creator of the first modern intelligence test and so-called "father" of IQ testing, cautioned that his scale was designed to identify children who should be placed in special schools where they would receive more individual attention, not to serve as a definitive statement of a child's intellectual capacity. He, in fact, argued:

> *". . . in intelligence, there is a fundamental faculty, the alteration or the lack of which, is of the utmost importance for practical life. This faculty is judgment, otherwise called good sense, practical sense, initiative; the faculty of adapting one's self to circumstances. Indeed the rest of the intellectual faculties seem of little importance in comparison with judgment."*[27]

David Wechsler, creator of the Wechsler Adult Intelligence Scale (1939), Wechsler Intelligence Scale for Children (1949), and the Wechsler Preschool and Primary Scale of Intelligence (1967), believed that intelligence is "the global capacity to act purposefully, to think rationally, and to deal effectively with [one's] environment."[28]

These early allusions to social and emotional dimensions of child development were formally presented by Howard Gardner in his groundbreaking work on multiple intelligences. He argued that interpersonal intelligence (the capacity to understand the intentions, motivations and desires of other people) and intrapersonal intelligence (the capacity to understand oneself, to appreciate one's feelings, fears and motivations) were as important as the cognitive types of intelligence traditionally measured by IQ tests.

That social and emotional skills are integral to the holistic development of children and to their success in pre-school, as well as in later schooling, has been confirmed by many studies.

In separate studies, researchers established young children's social status (a proxy for social and emotional skills) in very early grades as highly predictive of social and academic performance in the third grade[29] *and* of school success and mental health adjustment in adolescence.[30]

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[26] Zigler, E., Gilliam, W. S. and Jones, S.M., 2006 A vision for universal education. New York: Cambridge Press

[27] Plucker. J.A. (Ed.) (2003). Human Intelligence: Historical influences, current controversies, teaching resources. Retrieved 10/7/09 from http://www.indiana.edu/~int.

[28] Cited in Kaplan & Saccuzzo, Psychological Testing: Principles, Applications, And Issues (2008) Wadsworth Publishing Company. p. 256

[29] Wasik, B.H. 1997. Kindergarten predictors of elementary children's social and academic performance. In *Influences on and Linkages between Children's Social and Academic Performance: A Developmental Perspective*. B.H. Wasik, chair. Symposium conducted at the annual meeting for Social Research in Child Development, Washington, D.C.

[30] Lynch, M. and D. Cicchetti. 1997. Children's relationships with adults and peers: An examination of elementary and junior high school students. *Journal of School Psychology* 35 (1): 81-99.

Raver found that children who are emotionally well-adjusted have a greater chance of early school success.[31] In another study, she and Zigler found that children who are able to build positive relationships with others have a greater chance of academic success.[32]

Joseph and Strain found that problem behaviors decrease and social skills improve when children are taught to understand their own and others' emotions, handle conflicts, problem-solve and to develop relationships with others.[33] This is particularly important for children whose life circumstances may prompt them to be labeled "at-risk." Several "risk factors" have been identified as possible inhibitors of a child's ability to meet society's standards for behavior, including homelessness, maternal depression, abuse, exposure to violence, and negative values in the school or neighborhood. Children who are living with four or more these factors are more likely to have social-emotional difficulties.[34]

Reporting on a series of studies of preschoolers, Rubin and Coplan found that children who were non-social or withdrawn during preschool were more likely to suffer from peer rejection, social anxiety, loneliness, depression, and negative self-esteem in later childhood and adolescence. Negative implications for academic success were also suggested.[35]

The impact of healthy social and emotional development remains strong past the preschool years, extending perhaps to adulthood. A study of over 280 programs addressing "social-emotional learning" (SEL) found that students who receive instruction on recognizing and managing emotions, understanding and interacting with others, making good decisions, and behaving ethically and responsibly experienced an increased 11-percentile-point achievement gain in comparison to students who do not participate in SEL programs.[36] Successful leaders in today's corporate world rely on social and emotional competencies for effective communication, sensitivity, initiative, and interpersonal skills. Economics Nobel Laureate James Heckman notes that the most effective interventions take place during and prior to kindergarten, and that investing in social-emotional skills is a cost-effective approach to increasing the quality and productivity of the workforce through fostering workers' motivation, perseverance, and self-control.

In an analysis of early childhood education research, the Northwest Regional Educational Laboratory (NWREL) confirmed the lifelong influence of social and emotional development. The numerous longitudinal studies reviewed in the analysis showed that children who graduated from preschool, as compared to those who did not participate, generally had a greater degree of success in later schooling and in life. (See Chart A). Indeed, NWREL found "it is in the non-cognitive realm that the greatest benefits of preschool experience occur."

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[31] Raver, C.C. 2002. Emotions matter: Making the case for the role of young children's emotional development for early school readiness. *SRCD Social Policy Report, XVI* (3). Ann Arbor, MI: Society for Research in Child Development. Http: www.srcd.org/spr.html.
[32] Raver, C.C. & Zigler, E.F. 1997. Social competence: An untapped dimension in evaluating Head Start's success. *Early Childhood Research Quarterly*, 12, 363-385.
[33] Joseph, G.E. & P.S. Strain. 2003. Comprehensive evidence-based social-emotional curricular for young children: An analysis of efficacious adoption potential. *Topics in Early Childhood Special Education*. 23 (2):65-76.
[34] Bowman, B. 2006. School readiness and social-emotional development. In B. Bowman & E.K. Moore (Eds.) *School Readiness and Social Emotional Development: Perspectives on Cultural Diversity*. National Black Child Development Institute, Inc.
[35] Rubin, K. & R.J. Coplan. 1998. Social and nonsocial play in childhood: An individual differences perspective. In O.N. Saracho & B. Spodek (Eds.) *Multiple perspectives on play in early childhood.* (pp. 144 – 170). Albany: State University of New York Press.
[36] Durlak, J.A., Weissberg, R.P., Dynmicki, A. B., Taylor, R.D., Schellinger, K.B. *The impact of enhancing students social and emotional learning: meta-analysis of child-based universal interventions.* Child Development (in press).

Chart A: Task-related, Social, and Attitudinal Outcomes Associated with Preschool Participation	
fewer referrals for remedial classes or special education	lower incidents of illegitimate pregnancy, drug abuse, and delinquent acts
less likely to repeat grades	higher employment rates and better earnings
less often absent or sent to detention	fewer arrests and antisocial acts
greater academic motivation, on-task behavior, and capacity for independent work	better relationships with family members
more positive attitudes toward school	higher incidence of volunteer work
more frequent high-school graduations or GED completion	better self-esteem and a greater locus of control

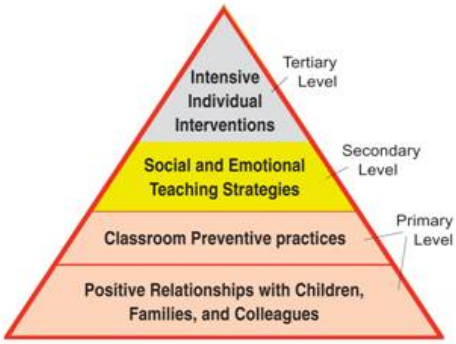
Cotton, K. & Conklin, N.F. 2001. *Research on Early Childhood Education. Topical Synthesis #3 of the School Improvement Research Series.* Northwest Regional Educational Laboratory. http://www.nwrel.org/scpd/sirs/3/topsyn3.html

It is already clear that social and emotional development is paramount to success; it is becoming clearer that such development requires cultivation. The ability to get along with others, to recognize one's own strengths, to adapt, and to self-regulate are not merely natural by products of children maturing and interacting with peers; they are a learned skill set. Increasingly, early educators are finding that children are very much in need of this type of learning. Social-emotional development has been cited by many states as the area in which children are least prepared for kindergarten, and the number of kindergarten-aged children who are considered not "ready to learn" has been reported to be as high as fifty percent.[37] More troubling still, it has been estimated that between 16 and 30 percent of children entering kindergarten have emotional or behavioral problems that pose ongoing problems to teachers.[38] Researchers have also reported that *forty* percent of children in a Head Start program exhibited problem behaviors (such as kicking or threatening others) at least once a day.

[37] Rimm-Kaufman, S.E., Pianta, R.C. and Cox, M.J., 2000 *Teacher's judgement of problems in the transition of kindergarten.* Early Childhood Research Quarterly, 15 (2, 147-166).

[38] National Center for Children in Poverty. 2002. Building Services and Systems to Support the Healthy Emotional Development of Children: Promoting the Emotional Well-being of Children. Volume 12: No. 3 NCCP

How do early educators address these problems? Bodrova and Leong have suggested that the fourth "r" teachers must attend to – along with readin', writin', and 'rithmetic – is regulation. Self-regulation has two dimensions: the ability to control one's impulses (not *grabbing* a coveted toy from a peer's hands) and the capacity to do something because it's needed (*asking* to play with the desired toy and then *waiting* one's turn). According to Bodrova and Leong, self-regulation is used in both social interactions and in thinking, providing the research-based example of having to overcome the desire to focus on the picture of a dog when reading its caption of "cat." Children's self-regulation behaviors in the early years are regarded by researchers as more predictive of school achievement in reading and math than their IQ scores. [39, 40]



The Teaching Pyramid

Critics seeking to minimize the role of self-regulation in a child's development may argue that such behavior can only occur when the child is physiologically ready. There is some truth in this argument, as brain research does indicate that the ability to regulate is tied to the development of the prefrontal cortex, which is also important to controlling one's emotions and focusing one's attention.[41] However, it has also been proven that those necessary neural pathways are constructed and strengthened by positive interactions with others. [42, 43]

One model for promoting the social and emotional development of all children in the classroom extends to teachers the power of positive interactions with others. As depicted in the diagram, the Teaching Pyramid builds upon a base of "positive relationships with children, family, and colleagues." This model urges teachers to focus on their relationships with children and families and to include developmentally appropriate, child-centered classroom environments that promote children's developing independence, successful interactions, and engagement in learning. Such nurturing and responsive caregiving will address the social and emotional needs of most children. For those children whose challenging behavior indicates that these "universal practices" are not adequately addressing their social/emotional status, teachers can reframe the problem behavior into a skill-learning opportunity. The desired behavior is modeled for the child, practiced by the child, and maintained in both familiar and new situations.[44]

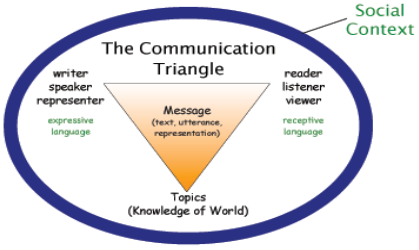
[39] Bodrova, E. & D Leong. 2008. Developing Self-Regulation in Kindergarten – Can We Keep All the Crickets in the Basket?
[40] Blair, C. 2002. School readiness: Integrating cognition and emotion in a neurobiological conceptualization of children's functioning at school entry. *American Psychologist* 57 (2):111-27.
[41] Blair, C & RP Bazza. 2007. Relating effortful control, executive function, and false belief understanding to emerging math and literacy ability in kindergarten. *Child Development*. 78 (2):647-63.
[42] Brodrova, E. & D. Leong. 2005. Self-Regulation as a Key to School Readiness
[43] Eisenberger, N.I., Taylor, S.P., Gable, S.L., Hilmert, C.J., Lieberman, M.D., 2007, *Neural pathways link social support to attenuated neuroendocrine stress responses.* NeuroImage, 35, 1601-1612.
[44] Promoting Children's Social and Emotional Development through Preschool Education; Crockenberg, S. & Leerkes, E. 2003. Infant negative emotionality, caregiving, and family relationships. In A.C. Crouter & A. Booth (eds.). Learning to Read the World: Language and Literacy in the First Three Years. (pp. 557-78). Mahwah, NJ:Erlbaum

Lest educators be overwhelmed by a "fourth r," it is important to remember that fostering social and emotional development should occur within the context of everyday life. Of course, there are plenty of "teachable moments" – when Ben punches Denzel for stealing the ball, when Grace blurts out the answer to the question addressed to Taritha. But, in a more positive approach, the childhood act of play needs to be taken seriously as a very real avenue to social and emotional development. For it is through "activities in which children – and not adults – set, negotiate, and follow the rules" that pre-schoolers are best able to access one of the important gateways to success: self-regulation.[45, 46]

DOMAIN 4: COMMUNICATION, LANGUAGE AND LITERACY

Communication, in its purest form, is neither the telephone nor the computer; it is the ability "to express oneself in such a way that one is readily and clearly understood." Evolving technology: cell phones, instant messaging, email, and teleconferencing has seemingly propelled us into an age of telecommunication, one in which our messages can be instantaneously shared through speech, text, graphics, and video.

The ability to express oneself is displayed from the moment children are born. When infants cry, they are conveying a need arising from hunger, discomfort, pain, or distress. Parents and other caregivers are often soon able to detect exactly what the baby wants by the distinctive sound of the cry. Young babies may also communicate feelings of displeasure by hiccupping, yawning, stretching out their arms, grimacing, or even falling asleep.[47] As early as six weeks, babies begin to express their contentment by cooing, making squeals, gurgling, and even making vowel sounds such as "ah-ah."[48] At around this same time, babies exhibit their first "real" smiles. Although parents often notice their baby smiling earlier – perhaps while sleeping or staring at a picture, those smiles are regarded as spontaneous, not requiring "the complex thought process of a social smile. One of the most special things about the social smile is that it opens up a whole new way of communicating with your baby."[49]



This connection between baby, parents and/or caregiver sets the stage for the "dance" of communication, a dance that becomes increasingly intricate as very young children acquire language. Daniel J. Siegel, a leader in the field of attachment and parenting, has proposed the idea of "contingent communication," in which the mind of one person joins the other. Basically, the child sends a need. The parent perceives the need, interprets the need, and responds promptly and sensitively to it. Babies learn that they can rely on their parents' responsiveness, thereby forming a secure attachment to the parent. Research by Shonkoff and Phillips indicates that infants whose parents respond appropriately and consistently to their efforts to communicate are more advanced on virtually all assessments of

[45] Fox, L. & R.H. Lentini: 2006. "You got it!" Teaching social and emotional skills. *Beyond the Journal.* National Association for the Education of Young Children.
[46] Zigler, E.F., Singer, D.G. and Bishop-Josef, S.J.: 2004 *Children's play: The roots of reading.* Washington D.C., Zero to three.
[47] Reinhartsen, D. & P. Pierce, P. (no date) Developing communication abilities." In *Baby Power: A Guide for Families for Using Assistive Technology with their Infants and Toddlers*, ed. P. Pierce. Chapel Hill, NC: The Center for Literacy and Disabilities Studies, University of North Carolina at Chapel Hill. Retrieved 6/6/08 from www2.edc.og/ NCIP/LIBRARY/ec/Power_7.htm
[48] Papalia, D. & S. Wendkos Olds. 1987. *A Child's World: Infancy through Adolescence*. Fourth Edition. New York: McGraw-Hill Book Company.
[49] *Smiling: What Experts Say*. Retrieved 6/6/08 from http://family.go.com/parentpedia/baby/milestones-development/baby-smiling/

developmental and cognitive status.[50] It has also been noted that mothers with securely attached children of preschool age tend to read more and give more reading instruction than mothers with children who are less securely attached, again suggesting the interactive nature of communication and of language development.[51,52]

That language exists within a social context is not a new idea. In his book, *Closing the Circle: A Practical Guide to Implementing Literacy Reform, K-12*, author Sean Walmsley traces the roots of what is known as the "communication triangle" to Aristotle. The communication triangle "represents the basic relationships among those who create and express ideas (writers, speakers, and representers), those who receive and make sense of them (readers, listeners, and viewers), the topics or ideas themselves, and the actual text. All of these interactions lie within a social context that influences – in some cases, controls – these interactions."[53]

The terms "expressive language" and "receptive language" used in the diagram of the communication triangle have long been used in the study of language acquisition (and are defined below), but the listing of "representer" and "viewer" in their respective categories may be unexpected. To represent is to express ideas in a variety of media. Representing can be regarded a precursor to writing, but interestingly, writing is also one of the many forms of representing. Likewise, children "view" before they are able to read, yet the ability to make sense of what they observe will carry through as a necessary life-long skill in an increasingly visual world. That young children express themselves before knowing how to write, and acquire knowledge before knowing how to read convinces Walmsley that representing is indeed a critical and first component of expressive literacy, viewing a critical and first component of receptive literacy.[54]

If communication is the ability to express oneself, and language is one way in which to do so, what then, is literacy? Traditionally, literacy has meant the ability to read and write, but experts agree that it is much more than that. Since the mid-twenties when the concept of "reading readiness" was introduced, to the early 1970's when noted educator and researcher, Marie Clay, challenged reading readiness with the new idea of "emergent literacy," to Walmsley's present-day argument that viewing and representing are critical components, literacy has come to include a continuum of those early behaviors that lead to actual reading and writing.

Much research confirms the validity of this model. Teale and Sulzby found that literacy development begins before children participate in formal education and other researchers have identified contributors to that development.[55] According to Logue, "nothing is more important [to developing literacy skills] than regular, daily experiences of face-to-face interactions – being read to, talked to, listened to, touched, and comforted."[56] Studies by Purcell-Gates, McGee, Lomax & Head, and Neuman & Roskos found that interacting with print or seeing print on a day-to-day basis helps children learn about written language

[50] Shonkoff, J. and D. Phillips. 2000. *From Neurons to Neighborhoods*. Washington, D.C.: National Academy Press.
[51] Bus, A.G. and M.H. van Ijzendoorn. 1995. Attachment and early reading: A longitudinal study. *Journal of Genetic Psychology* 149: 199-210.
[52] Bus, A.G. and M.H. van Ijzendoorn. 1988. Mother-child interactions, attachment and emergent literacy: A cross-sectional study. *Child Development* 59: 1262-1273.
[53] Walmsley, S. 2008. *Closing the Circle*. San Francisco: Jossey-Bass. pg. 7
[54] Walmsley, S. 2008. *Closing the Circle*. San Francisco: Jossey-Bass.
[55] Teale, W. and E. Sulzby. 1986. *Emergent Literacy: Writing and Reading.* Norwood, NJ: Ablex Publishing Corporation
[56] Logue, M.E. 2000. *Implications for Brain Development Research for Even Start Family Literacy Programs*. Washington, D.C.: United States Department of Education.

and reading, even if they do not already read.[57, 58, 59] Nursery rhymes and rhyming, singing, and word games all promote linguistic awareness, which leads to phonemic awareness.[60, 61] Inventive spelling – when young children attempt to spell a word based on what they hear in the word – appears to Clarke and Ehri to be a step toward alphabetic knowledge.[62, 63]

These studies and many others over decades of research prompted the National Early Literacy Panel to identify characteristics of children, birth to age five, that were most closely linked to later literacy achievement: oral language development, phonological/phonemic awareness, alphabetic knowledge, print knowledge, and invented spelling. Furthermore, the Panel recommended the inclusion of high-quality early language experiences as a means to enhance young children's development.[64] The National Reading Council's recommendations for promoting literacy development in young children also includes instruction designed to "stimulate verbal interaction, to enrich children's vocabularies, to encourage talk about books, and to provide practice with the sound structure of words."[65]

Why the heavy emphasis on oral language skills? Research by Tabors and Dickinson shows language development is crucial in preparing pre-school age children for literacy and that word knowledge is closely linked to reading accomplishments.[66] The National Reading Panel credits oral vocabulary as "the key to learning to make the transition from oral to written forms" of communication. [67] From findings of numerous studies, Whitehurst and Lonigan inferred that "children who have larger vocabularies and greater understanding of spoken language have higher reading scores." A study by Larrick of children with limited language exposure, and therefore fewer words in their vocabulary by school entry, revealed that they did not understand sequence of events basic to stories and had difficulty recalling and anticipating the sequence of events in simple stories.[68]

Before they enter school, children may know and use correctly as many as 32,000 words, most of which are learned indirectly by engaging in daily oral interaction (talking with parents and other caregivers, siblings, and peers), by listening to adults read aloud (bedtime stories), and by being actively involved with books (looking at and talking about books).[69] The quality, frequency, and nature of these interactions are influenced by a great number of factors, not the least of which is the socio-economic status of the family. Hart and Risely determined that an average child in a professional family accumulates experience with 45 million words in the first four years of life, compared to 13 million

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[57] Purcell-Gates, V. 2000. Family literacy. In *Handbook of Reading Research,* eds. Kamil, M., P. B. Mosenthal, P. D. Pearson, & R. Barr. Vol. III (pp. 853-870). Mahwah, NJ: Lawrence Erlbaum

[58] McGee, L., R. Lomax, & and M. Head. 1988. Young children's written language knowledge: What environmental print and functional print reading reveals. *Journal of Reading Behavior* 20: 99-118.

[59] Neuman, S.B. & K. Roskos. 1993. Access to print for children of poverty: Differential effects of adult mediation and literacy-enriched play settings on environmental and functional print tasks. *American Educational Research Journal* 30: 95-122.

[60] Bryant, P.E., M. Maclean, L. Bradley, & J. Crossland. 1990. Rhyme and alliteration, phoneme alliteration, phoneme detection, and learning to read. *Developmental Psychology* 26: 429-438.

[61] Maclean, M., P. Bryant, & L. Bradley. 1987. Rhymes, nursery rhymes, and reading in early childhood." *Merrill-Palmer Quarterly* 33: 255-81.

[62]Clarke, L. 1988. Invented versus traditional spelling in first graders' writings: Effects on learning to spell and read. *Research in the Teaching of English* 22: 281-309.

[63] Ehri, L. 1988. Movement in word reading and spelling: How spelling contributes to reading. In *Reading and Writing Connections*, ed. J. Mason & J. Newton. MA: Allyn & Bacon.

[64] International Reading Association. 2005. *Literacy Development in the Preschool Years: A Position Statement of the International Reading Association* Newark, DE: Author. Available at http://www.reading.org/downloads/ positions/ps1066_preschool.pdf

[65] Snow, C.E., M.S. Burns, & P. Griffin, eds. 1998. *Preventing Reading Difficulties in Young Children*. Washington, D.C.: National Academy Press.

[66] Dickinson, D. & Tabors, P. 2001. *Beginning Literacy with Language*. Baltimore: Paul H. Brookes. pp 139-287

[67] National Reading Panel. Undated. Teaching Children to Read: An Evidence-based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction, Reports of the Subgroups. Rockville, MD: National Institute of Child Health and Human Development. pg. 4-3. Available at http://www.nichd.nih.gov/ publications/nrp/upload/report_pdf.pdf

[68] Larrick, N. 1988. *Literacy Begins at Home*. Claremont, CA: Claremont Reading Conference

[69] Voyager U Reading Academy: NYS Reading Resource Center: www.nysrrc.monroe.edu and www.voyagerlearning.com

words for the child from a family receiving public assistance. This is a concrete example of how social context influences the interactions within the communication triangle and how, as suggested by Walmsley, the players can interact in ways that support – or inhibit – growth in expressive and receptive language.[70]

The connection between vocabulary and prior knowledge is especially intriguing. Drawing on background knowledge helps children understand new words; at the same time, new words serve as tools of access to knowledge of the world around and beyond them. This interrelatedness between vocabulary development and background knowledge suggests that what children already know is as important as the new words they acquire. Studies establishing a connection between vocabulary development and literacy achievement have already been mentioned; research on background knowledge and achievement also exists. Robert Marzano, author of Building Background Knowledge for Academic Achievement, cites seven different studies that confirm that "what students already know about the content is one of the strongest indicators of how well they will learn new information relative to the content." [71,72] The significant contribution that background knowledge plays in learning to read prompted the New York State Department of Education to include it in its implementation of Reading First, an intervention strategy that focuses on improving reading instruction. New York State guidelines for scientifically based reading instruction call for a block of systematic and explicit instruction that includes "activating and building background knowledge."[73]

Clearly, cultural and background knowledge, as well as word knowledge, are key contributors to literacy and to communication, but how is such knowledge best cultivated? Again, the strategies are interrelated. Rare or unusual words can easily be introduced within the context of new experiences, which provide information for future ideas and thoughts. Intentionally engaging children in extended discourse – in meaningful conversation – about these experiences will benefit all children, but particularly those who don't naturally interact in meaningful conversation in their day-to-day lives. Snow and Tabors, in their study of low-income elementary children who were experiencing reading difficulties, found that indirect activities, such as frequency of children's outings with adults, amount of time spent interacting with adults, and other enrichment activities, were more closely related to literacy acquisition than direct activities such as helping with homework.[74]

It is perhaps of little surprise that these same activities can serve as tools of assessment. Conversing with students and observing their literacy behaviors are very real means of assessment that can, and should, be used in conjunction with scientific, evidence-based, standardized measures of achievement. In this way, assessment, as a process, can not only help inform policy makers and school districts on what works, but also fulfills its true intent of guiding instruction. This is keenly important in the preschool years, when each student arrives with very different experiences and backgrounds that affect his/her ability to learn.

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[70] Walmsley, S. 2008. *Closing the Circle*. San Francisco: Jossey-Bass.
[71] Nagy, Anderson, & Herman, 1987; Bloom, 1976; Dochy, Segers, & Buehl, 1999; Tobia, 1994; Alexander, Kulikowich, & Schulze, 1994; Schiefele & Krapp, 1996; Tamir, 1996; and Boulanger, 1981
[72] Marzano, R. 2004. *Building Background Knowledge for Academic Achievement*. Alexandria, VA: Association for Supervision and Curriculum Development. pg. 1
[73] New York State Education Department. 2005. *New York State Guidelines for Scientifically Based Reading Instruction*. Retrieved July 2008 from http://principalsacademy.monroe.edu/files/NYSGuidelinesReading1stInst ruct.pdf
[74] Snow, C. and P. Tabors. 1996. *Intergenerational Transfer of Literacy*. Commissioned Paper for *Family Literacy: Directions in Research and Implications for Practice -- January 1996* National Symposium. (Available at www.ed.gov/pubs/FamLit/transfer.html).

By knowing where students started, where they are now, and where they are going, teachers and other caregivers can determine how to best build literacy.

Receptive Literacy

Receptive language, referred to above, is a component of the more encompassing term "receptive literacy" put forth by Walmsley. Receptive literacy is the ability to understand meaning that originates with others.[75] It is the taking in of information, whether by listening, viewing, or reading. In the first months of life, babies demonstrate receptive language skills when they respond to their mother's voice. Toddlers often recognize logos and understand them to mean a favorite restaurant or activity. Pre-schoolers decipher messages from picture books, and are beginning to pay more attention to print. They may know some words and are starting to make letter-sound associations. As they mature, children are learning how to make sense of what they hear, what they see, and what they read.

A complementary sense of receptive language is the "mental store of words and phrases."[76] As children are repeatedly exposed to a new word, they learn what the word means and how to use it. When this knowledge is securely captured, it is incorporated into the process of building background knowledge to understand more new words and to learn more about the world.

Young children understand more words than they are actually able to produce themselves, partially due to the context in which the message is being sent. In pretend play with food, for example, children may serve food to their adult "customers" who respond, "Oh yum! Doesn't this food taste good? It's so delicious!" While the child understands the connection between "delicious" and something that tastes good, he or she may not use this word until much later. By school age, children use approximately 2,500 words, in contrast to understanding 6,000 and responding to 25,000.[77]

Expressive Literacy

The partner to receptive literacy is expressive literacy, or the ability to create and communicate meaning. If receptive literacy is the taking in of information, so then expressive literacy is the "output" of information through representing, speaking, and writing. As children develop, their ability to express ideas in each of these venues becomes increasingly refined.

Expressive literacy is perhaps easiest to observe through the distinct stages of writing development. Scribbling soon takes the direction of left to right; first letters appear; strings of letters suddenly turn into first "words," words then look like they sound. Before long, and rather remarkably, children are expressing their ideas in conventional writing. Speaking is readily marked, from five-month-old babbling, to toddlers' one-word utterances, to the ensuing explosion of words and phrases, all of which lead to complete sentences by kindergarten entry. Children also express their ideas through their speech.

As a form of expressive literacy, representing warrants further discussion. It may be thought of as what happens before children can speak or before they can write, but it is actually a life-long skill that becomes increasingly sophisticated. Eight-month-babies are representing when they wave bye-bye. Pre-schoolers

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[75] Walmsley, S. 2008. *Closing the Circle*. San Francisco: Jossey-Bass.

[76] Roskos, K.A., P.O. Tabors, & L.A. Lenhart. 2005. *Oral Language and Early Literacy in Preschool: Talking, Reading, and Writing*. Newark, DE: International Reading Association.

[77] Pierce, P. & A. Profio. 2006. From cooing to conversation to *The Carrot Seed*: Oral and written language connections." In *Learning to Read the World: Language and Literacy in the First Three,* eds. Rosenkoetter, S. and J. Knapp-Philo. Washington, D.C.: Zero to Three Press.

are representing when they draw or scribble, work with clay, and play "fire-fighter." Older children – fully able to express themselves through speech and writing – continue to represent when they build models, when they illustrate books, when they perform in a school play. At all ages, children communicate understanding through a variety of media.

As the building blocks of literacy– vocabulary, background knowledge, expressive and receptive language, phonological and phonemic awareness, oral expression, the alphabetic principle come together, children learn to view and represent, to listen and speak, to read and write. They become increasingly sophisticated in expressing themselves in ways that are readily and clearly understood. But, true to the communication triangle, this doesn't come in isolation. Pre-school aged children also are becoming increasingly able to interpret and describe in their own words that which others have expressed, whether the moral of a story, the main point of an argument, the feeling of a poem, or the message of artwork. Pre-schoolers are, in fact, perfecting the dance of communication.

The benchmarks and benchmark indicators in this domain represent the standards for what Prekindergarten children should know and be able to do in order to be successful learners. Indicators are observable and demonstrative and can be accomplished through the play and active engagement of four year olds within a rich and well designed environment.

DOMAIN 5: COGNITION AND KNOWLEDGE OF THE WORLD

Scientific research is beginning to reveal information about the physiology of our brains– nerve cells, circuitry, electrical and chemical processes – that is as fascinating as it is complex. Contrary to long-held beliefs that the brain is "hard-wired" at birth, researchers have confirmed it is actually under constant development and that the period of greatest activity is the early years. Interestingly, the brain attains 90 percent of its adult weight by the time a child reaches age five and develops faster than any other part of the body. The enormity of this physical growth aside, perhaps the most compelling finding for teachers and caregivers of young children is how significantly cognitive development can be influenced by environment and experience.

The National Scientific Council on the Developing Child analogizes cognitive development to building a house. The "blueprint" for building a brain is supplied by genetics, but it is the building materials – in this case, proper nutrition, social interactions with attentive caregivers, and absence of toxins – that brings those plans to optimal fruition. In making the house a home, builders modify blueprints to suit the needs of the family; likewise, children's experiences define which neural connections will thrive and which will be discarded. The Council summarizes by stating:

". . . the quality of a child's early environment and the availability of appropriate experiences at the right stages of development are crucial in determining the strength or weakness of the brain's architecture, which, in turn, determines how well he or she will be able to think and regulate emotions."[78]

The brain's architecture is but one aspect of cognitive development. Historically, the term "cognitive development" is most frequently associated with the work of Jean Piaget, who theorized that children

[78] National Scientific Council on the Developing Child. "The Timing and Quality of Early Experiences Combine to Shape Brain Architecture." (February 2008)

move through distinct stages of cognitive growth as the result of an adaptation process involving assimilation and accommodation. His work forwarded the idea of cognition as both the way a child thinks about something and what the child does. Learning is an active process and occurs when children interact in meaningful ways with the world around them.

Other leaders in the field of children's cognitive development also contributed to our current beliefs about how children learn. Lev Vygotsky asserted that interaction with knowledgeable others and culture are important shapers of cognitive development. Drawing from Piaget's model of cognitive stages and Vygotsky's emphasis on interpersonal communication, Jerome Bruner proposed that children's progress through four socio-cognitive stages is facilitated by interaction with adults and peers.

These models of cognitive development have spawned much discussion and unending research. Interestingly, findings have suggested that, contrary to what all three theorists believed, preschool children are capable of higher-order skills, such as hierarchical classification and quantitative reasoning. Armed with sufficient knowledge and/or experience, they can perform activities that might be considered "developmentally inappropriate" for their age or for their development in other areas. In studies by Gobbo and Chi, preschool children who knew a great deal about dinosaurs sorted them by land-living or not, meat-eating or not, etc. Researchers identified knowledge – in this case, of dinosaurs – as the key determinant of whether the pre-school children studied were able to sort by multiple criteria or not.[79]

Presumably, these young dinosaur "experts" acquired their vast knowledge from their interest in the topic. Parents, teachers, and other caregivers can tap into children's natural interests and their prior knowledge to promote higher-level, abstract, and critical thinking. By facilitating conversation and purposefully asking questions, adults not only provide rich experiences that encourage children to delve deeper into a topic of interest, but also challenge them to reach the next level of thinking – essentially, implementing Vygotsky's strategy of "scaffolding." Open-ended questions, in particular, prompt children to not only use more language, but also require them to recall, and put into sequence, past events.[80] In the course of conversation, asking "Why do you think this dinosaur has such a long tail?" will elicit a far greater response than "Isn't this dinosaur's tail long?"

Teachers must be sure to provide age-appropriate opportunities to engage higher-order thinking. During morning hour, facilitate conversation with children about the day's weather, the clothes they are wearing, and the items they brought to school to help them draw conclusions about the four seasons. Ask children to retell – verbally or dramatically – the story behind their own or others' artwork. When reading aloud to a group of four-year-old children, prompt them to predict what will happen to Henny Penny. "Wonder aloud" with children about how life would be different if they were born at a different time or in a different world. For it is through such supportive, questioning, and attentive environments that children will acquire knowledge about language arts and literacy; mathematics; science; fine arts; social studies; and the world.

[79] Bowman, B.T., Donovan, S.M. and Burns, S.M. *Editors;* Eager to Learn: Educating our Preschoolers, 2000, p.41.
[80] National Scientific Council, Center on the Developing Child at Harvard University. (2007). *The Science of Early Childhood Development: Closing the Gap Between What We Know and What We Do.* Cambridge, MA.

The goal of thinking at a more critical level is infused throughout New York State's learning standards for students in kindergarten through grade twelve. It is equally important for preschool children. It is during these early years that cognitive development and brain development are integrally linked. Young children are able to make sense of their world by acquiring, adapting, practicing, applying and transferring knowledge in order to construct new or expanded concepts. It is through play, active engagement, both linguistically and experientially, experimenting, observing, exploring, manipulating, creating, listening, reflecting, problem solving, and using logic and reasoning that children become capable of more complex thinking.

Cognitive development occurs across all domains and supports children's learning about the world in which they live. This is reflected in the New York State Prekindergarten Foundation for the Common Core Some examples of indicators of cognitive development and where they can be found in this document are illustrated below. (Please note: This list is a selected group of examples and is not inclusive of all cognitive indicators.)

Approaches to Learning

Child actively and confidently engages in play as a means of exploration and learning.

Child uses "trial and error" method to figure out a task, problem, etc.

Physical Development and Health

Child uses description words to discuss sights, smells, sounds, tastes and textures.

Child demonstrates awareness of spatial boundaries and the ability to work within them.

Social/Emotional Development

Child understands that other children have needs and rights

Child demonstrates awareness of similarities and differences in habits, traits, preferences, abilities, motives, etc. among his/her family members and/or peers;

Child understands how his/her own emotions impact choices (likes & dislikes).

Approaches to Communication

Child initiates conversations about things around them.

Child uses words, facial expressions, body language, gestures, and sign language to express ideas.

ELA and Literacy

Child demonstrates understanding of the organization and basic features of print.

Child identifies the front cover, back cover and displays correct orientation of book and page turning skills.

Cognition and Knowledge of the World

Math

Child will understand the relationship between numbers and quantities to 10.

Child identifies measurable attributes of objects such as length and weight.

Science

Child makes predictions based on background knowledge and previous scientific experience.

Child identifies cause and effect relationships.

Child verifies predictions by explaining "how" and "why".

Child makes age-appropriate, logical conclusions about investigations.

Social Studies

Child uses words and phrases that differentiate between events that happen in the past, present and future, e.g., uses phrases like "when I was a baby…" or "before I moved to my new house."

The Arts

Child compares or contrasts different forms of dance and music

Child identifies similarities and differences among samples of visual art.

The sections of the Cognition and Knowledge of the World Domain provide benchmarks and benchmark indicators for specific content areas: science, social studies, the arts, and technology. For Mathematics, benchmark and benchmark indicators are referred to as standards and clusters. Learning environments and instructional practices in early childhood classrooms across settings will be immediately impacted by these expectations. Teachers will be empowered to align curriculum and assessment horizontally across domains as well as vertically to ensure continuity of learning, beginning in Prekindergarten. Programs for young children will use these expectations to plan professional development tailored to the needs of individual teachers, as well as, to engage parents in monitoring the progress of their children.

MATH

While walking to the bus stop, Treva counts her footsteps. "One, two, three, four – hey! That's how old I am!" Nodding, her Nana agrees, "You're right! Keep going. What's the next number?" Counting is a skill that many parents and caregivers recognize as being important for their children to have when they enter school, so it is not uncommon for them to encourage their preschoolers to practice. In the everyday context of their lives, however, children are also exposed – perhaps intentionally, perhaps not – to many, many other math concepts.

Math is about numeracy, but it is also about measurement, shapes, and patterns. When a new mark is added to the wall to note the latest growth spurt, children are picking up a sense of measurement, even though no numbers are involved. In fact, this type of math occurs every time a child happily exclaims, "I built the tallest tower!" or complains, "My bag is heavier than hers." The understanding that something is taller/shorter, heavier/lighter, full/empty, and bigger/smaller is a pre-number math concept that paves the way for later understanding of inches, pounds, volume, and mass.

When children notice that their bags are heavier or their towers are taller, they inevitably notice other variables, such as shape. As a math concept for preschoolers, shape and spatial relationships include recognizing and manipulating geometric forms (squares, triangles, circles, rectangles, etc.). Parents and

caregivers may be surprised to learn that correctly using words such as *first*, *last*, *top*, *bottom*, *over*, and *under* can also indicate a child's awareness of spatial relationships.

There are many other math applications hiding within "non-math" activities. What, for example, does clapping have to do with math? The answer: when there is a pattern to the clapping, i.e., teachers sometimes attracts their busy classroom's attention with a "slow clap, slow clap, pause, fast clap, fast clap." Detecting patterns help children begin to understand how things work together, which is an important skill for later math development. Counting and measuring activities help children become more familiar with number concepts, equal values and an understanding of length, height and weight. Opportunities abound for promoting math learning in preschool classrooms.

SCIENCE

Teachers in K-12 classrooms have long struggled with taking the "sigh" out of science. Too often, secondary-school student's associate science with memorizing periodic tables, searching for mystery body parts in formaldehyde-soaked amphibians, and determining whether a rock is sedimentary, metamorphic, or igneous. While the content of this teaching is important, its decontextualized delivery does little to ignite students' interest in the physical properties of the world around them.

Young children, on the other hand, are fueled by an innate curiosity about what works, why it works, how it works, and what's in it that makes it work. Preschoolers are constantly asking, "Why does this rock sparkle?" "How can a frog jump so high?" "What's in water?" When they pose the time-honored, "why is the sky blue?" question, preschoolers are not expecting a detailed explanation of the electromagnetic spectrum but they are purposefully gathering information about, and trying to explain, their observations.

Science is exactly that: a system of acquiring knowledge. This system uses inquiry, observation and experimentation to describe or explain phenomena. For this age group, such activity involves manipulating objects, asking questions, making predictions, developing generalizations, and learning relevant vocabulary. Scientific experiences can occur both formally and informally, but should, as much as possible, allow for hands-on activity with objects and contexts that are meaningful to the child. Teachers may present a lesson on properties of water, but explaining why popsicles drip and ice cubes melt is likely to be more meaningful to children, to have a greater impact on their understanding, and more significantly, to increase their interest in the topic at hand. By exploring the science in the child's everyday world, science is understood not just as the work of chemists, biologists, and geologists, but as an integral and inspiring part of the real life of every child – a powerful message to be learned early and reinforced throughout life.

SOCIAL STUDIES

Today's shrinking globe presents wonderful opportunities for interaction with new people, cultures, and regions. Within these opportunities is a responsibility to appreciate the unique thoughts, beliefs, and actions of the people we meet. On a much smaller scale, pre-schoolers learn to do just that as they venture out of the familiarity of their homes into the community.

When they are very young, children begin to understand their role within their families. They learn the expectations and rules that govern this basic social structure. As they mature, their social circle enlarges to include extended family, friends, neighbors, classmates, teachers, and community helpers. Children soon realize that with new people come new rules, expectations, and ways of interacting.

It is important for children to learn how to navigate the increasing complexity of their social network. Communication and cooperation are tools of navigation that often present themselves naturally between and among individuals with similar perspectives. Reaching out to people with different backgrounds, experiences and beliefs, however, may be less comfortable, therefore requiring additional navigational tools: such as, respect and empathy.

Social studies is understanding one's role within the family and within the community, but also understanding others' roles. How do these roles interact? Older students explore the rights and responsibilities of community members in "Civics" or "Government" classes, but at the pre-school age, the focus is on sharing, taking turns, and practicing being followers and leaders.

Other areas of study traditionally associated with "social studies" are applicable to pre-school as well. History provides a sense of time, including the profound and minute changes that take place over the course of their day, week, or year. To pre-schoolers, this may mean comparing their fall self-portraits to their spring self-portraits. How are the portraits different? What occurred over the course of the school year to explain the difference? This exercise can promote children's grasp of the concept of "then" and "now," but also connect past events to present and future activities.

THE ARTS

Young children engage in pretend play to process their ideas about their world and the people in it. Research findings link dramatic play to children's cognitive, language, and social development, so it is important for caregivers to provide not only props and space, but also unstructured time, encouragement and positive feedback for dramatic play to occur. Fortunately, there are many forms of art through which children can express their thoughts, ideas, feelings, and wishes. Therapists have long used the arts to help children identify and resolve their emotions through media such as drawing, painting, and sculpting. The same is true for music and movement. Exposing children to music, in all its forms, has many benefits for cognitive, physical, social, and emotional development. Experts agree that actively participating in music – whether singing, playing an instrument, or dancing – helps children perform better in reading and math, play more cooperatively with others, control their bodies in space, and build their self-esteem. Even listening to music has its benefits, such as honing a child's ability to detect patterns, which is critical for emergent reading. And, listening to the most basic instrument – one's own voice – can help children distinguish between playground voices, inside voices, whispers, and silence, attributed to strengthening discrimination skills.

TECHNOLOGY

There was a time when preschoolers were well prepared for school if they had a new art smock and a box of crayons. Today, technology is changing the way in which children learn and develop literacy,

math, language, communication, social and problem solving skills. Children must ultimately be prepared to function as knowledgeable, productive, independent, creative thinkers in a technology-based society.

Technology is the systematic application of knowledge, materials, tools, and skills that extend human capabilities. It is a visible part of children's every day lives and it includes a broad range of tools (computers, telephones, MP3 players, cameras). While important, computers and instructional tools that use computers are only a few of the many technological advances we use today. Technologies developed through engineering include the systems that power our neighborhoods and schools and extend learning in our classrooms. Prekindergarten "play" has always included building with blocks, woodworking, playing with water, digging in sand, and molding clay. These activities still make up a part of the preschoolers day but involve a broader understanding of the concepts of engineering and technology. When a child constructs an object with wood and glue or can explain how a see-saw works, he or she is demonstrating an understanding of technology. Technology tools in the classroom (both traditional and digital technology) support a learner-centered and play-oriented early childhood curriculum.

Computers and other digital technology are powerful tools for supporting all learning in the early childhood classroom and can be integrated into classroom curricula, not merely as isolated curriculum components or centers. Children should be taught how to use technology and be provided opportunities to use it independently or cooperatively as in other learning centers. Computer and digital technology have provided many new tools to assist teachers as a means of supporting educational goals and outcomes.

APPENDIX

Background Information for the Creation of the New York State Prekindergarten Foundation for the Common Core

In seeking to further reduce the student achievement gap, the New York State Board of Regents set forth a charge to align standards, assessments, curriculum, and instruction not just across kindergarten through grade 12, but across the more comprehensive and inclusive span of prekindergarten (PreK) to 16. This call to action was particularly timely considering the growth of state-funded PreK programs. It is intended to improve the quality and consistency of early childhood instruction for all PreK children across all settings.

The New York State Education Department (NYSED) responded to this challenge by developing the *Prekindergarten Learning Standards* to strengthen instruction in PreK classrooms in all settings, as well as to help administrators and educators align PreK standards with the K-12 system. As a first step, NYSED invited representatives from the P-16 community to participate in a focused conversation about early learning standards. A workgroup comprised of teachers, program directors, representatives from teacher preparation programs, providers of professional development, national content experts, and NYSED staff all provided input into what parents, family members, and citizens – as a collective body – want children to be like when they grow up. They discussed how key values must be reinforced in children so that they will reflect their heritage and be prepared for their future. These values could be shaped into basic principles by acknowledging a series of fundamental beliefs about children, childhood, and learning.

Prekindergarten programs can enhance school readiness, lay the foundation for later achievement, and improve graduation rates. However, the positive impact of prekindergarten programs is only felt if they are of high quality and their results can be demonstrated. Without a focus on high standards this will not happen. There is growing consensus among educators, researchers, and policy makers that quality early learning standards must include outcomes – what children should know and be able to do after participating in prekindergarten and preschool programs. These outcomes, or benchmarks, as they are referred to in this *New York State Prekindergarten Learning Standards* document, cover a full range of knowledge, skills, habits, and attitudes that children need to master before they enter kindergarten. It was expected that these prekindergarten standards would strengthen instruction and educational experiences across all settings where New York State's four-year-olds are receiving their instruction.

Adopted and approved by the Board of Regents in January 2011, the original version of the *New York State Prekindergarten Standards* provided a framework that focused on the learning and development of the whole child and were aligned with the academic concepts outlined in the New York State P-12 Common Core Learning Standards, as well as with the existing New York State K-12 learning standards in Science, Social Studies and the Arts. Carefully developed early learning expectations linked to K-12 expectations can contribute to a more cohesive, unified approach to young children's education. In an effort to provide a clear, comprehensive, and consolidated resource for early childhood professionals, the New York State Prekindergarten Learning Standards have been revised to fully encompass the New York State P-12 Common Core Learning Standards in English Language Arts and Literacy, as well as for Mathematics at the prekindergarten level. The revision process has resulted in one document, the *New York State Prekindergarten Foundation for the Common Core.*