



Office of Early Learning
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Setting and Aligning Standards for Florida's
Voluntary Prekindergarten (VPK) Education Program

Panel of Experts' Meeting

PROCEEDINGS

December 17-18, 2007 • Orlando, Florida

Florida Department of Education

PROCEEDINGS OF PANEL OF EXPERTS

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1.0 INTRODUCTION

In 2004, the Florida Legislature enacted legislation to implement the Voluntary Prekindergarten (VPK) Education Program, in accordance with the [State Constitution](#). The [legislation](#) assigns responsibilities for the day-to-day management of the program to the Agency for Workforce Innovation (AWI); licensing and credentialing to the Department of Children and Families (DCF); and the creation of standards, curriculum, and accountability to the Department of Education (DOE). All three agencies are working together to provide leadership and support to the local early learning coalitions, school districts, and public and private providers to ensure the successful implementation of effective prekindergarten education programs for Florida's four-year-old children.

The constitutional amendment establishing the requirement for VPK defines the program and delineates its essential characteristics—specifically, that it be voluntary, high quality and free. Section 1(b), Article IX of the State Constitution states:

Section 1. Public education.—

(b) Every four-year old child in Florida shall be provided by the State a high quality pre-kindergarten learning opportunity in the form of an early childhood development and education program which shall be voluntary, high quality, free, and delivered according to professionally accepted standards. An early childhood development and education program means an organized program designed to address and enhance each child's ability to make age appropriate progress in an appropriate range of settings in the development of language and cognitive capabilities and emotional, social, regulatory and moral capacities through education in basic skills and such other skills as the Legislature may determine to be appropriate.

The implementing legislation provided for a voluntary prekindergarten education program to be available in Fall, 2005 for all children who are four-years-old by September 1. The program may be delivered by private, faith-based, or public schools which meet eligibility requirements. It includes both a school-year and a summer option, with different requirements for each in terms of class size, instructor to student ratios, total instructional hours, and qualifications of personnel. (See Part V, "Voluntary Prekindergarten Education Program," Chapter 1002, Florida Statutes.)

The goal of the VPK program is to better prepare Florida's young children for successful entry into kindergarten by focusing the DOE's efforts on early literacy. The key requirements of the legislation for the DOE fall in the areas of child performance standards for four-year-old children, curricula standards for VPK programs, and emergent literacy course standards for VPK instructors:

On March 15, 2005, the DOE adopted performance standards for students in the VPK program. These built on *Florida School Readiness Performance Standards 3-5-year-old Children* 2002, with increased emphasis on emergent literacy skills.

VPK providers may select or design their curriculum to implement the VPK program. However, the curriculum must be developmentally appropriate, designed to prepare a student for early literacy, enhance the age-appropriate progress of students in attaining

the state-adopted performance standards, and prepare students to be ready for kindergarten based on the statewide kindergarten screening. Providers may select or design their VPK curriculum, unless on probation for continued failure to meet kindergarten readiness rates. The DOE must review and approve curricula for use by providers who are placed on probation, and maintain a list of such curricula.

The DOE adopted minimum standards for training in emergent literacy for VPK instructors, effective April 11, 2005. The training is comprised of 5 clock hours and provides instruction in strategies and techniques to address the age-appropriate progress of prekindergarten students in developing emergent literacy skills, including oral communication, knowledge of print and letters, phonemic and phonological awareness, and vocabulary and comprehension development. It must also provide resources to allow students with disabilities and other special needs to derive maximum benefit from the VPK Program.

Public or private providers delivering the school-year VPK program must meet requirements which include having, for each prekindergarten class, at least one instructor who holds a child development associate (CDA) credential or state-approved equivalent, and successfully completes an approved emergent literacy training course. (This is the minimum qualification; other educational credentials, including specified degrees, may be substituted.)

The Department of Education, Office of Early Learning, committed to the State Board of Education that it would review the VPK Education Standards every three years. To ensure that the proposed review of the 2005 VPK Education Standards was based on the most current research and evidence-based, and effective practice in the fields of early childhood education, mathematics and science, DOE established a Panel of Experts and arranged for the Panel to meet on December 17-18, 2007. The Panel of Experts' meeting focused on:

- the review and possible revision of the current 2005 VPK Education Standards in the domain of Cognitive Development and General Knowledge, with emphasis on the sub domain of Mathematical Thinking.

2.0 PANEL OF EXPERTS

Through its Office of Early Learning, in collaboration with the Florida Center for Reading Research, DOE established a Panel of Experts to facilitate revisions of the 2005 Florida Voluntary Prekindergarten (VPK) Education Standards. The Panel of Experts included individuals with expertise in the area of early childhood with research emphasis on mathematics or science, individuals with expertise in the area of early childhood with other research emphases, and early learning practitioners as follows:

The members of the Panel of Experts are:

Marcia Barnes, Ph.D.,¹ Professor, Department of Psychology, University of Guelph. (Invited)

Doug Clements, Ph.D.,¹ Professor, Department of Learning and Instruction, University at Buffalo, State University of New York. (Invited)

Cheryl Fountain, Ph.D.,³ Executive Director, Florida Institute of Education, University of North Florida.

Herbert Ginsburg, Ph.D.,¹ Jacob H. Schiff Foundation Professor of Psychology and Education, Teachers College, Columbia University.

Ellen Granger, Ph.D.,¹ Director, Office of Science Teaching Activities, Florida State University. (Invited)

Alice Klein, Ph.D.,¹ Research Psychologist, Institute of Human Development, University of California, Berkeley.

Susan Landry, Ph.D.,² Developmental Psychologist and Michael Matthew Knight Professor, Department of Pediatrics, University of Texas Health Science Center at Houston (UTHSC-H); Chief, Division of Developmental Pediatrics; Director, Center for Improving the Readiness of Children for Learning and Education (CIRCLE), Department of Pediatrics. (Invited)

Dave Lawrence,³ President, Early Childhood Initiative Foundation and University Scholar for Early Childhood Development and Readiness, University of Florida. (Invited)

Thomas F. Logan, Ph.D.,³ Executive Director, Early Learning Coalition of Florida's Gateway.

Christopher Lonigan, Ph.D.,² Associate Director, Florida Center for Reading Research, and Professor of Psychology, Florida State University.

Scott McConnell, Ph.D.,² Professor, Department of Educational Psychology, University of Minnesota. (Invited)

Barbara Saunders,³ Executive Director, Early Learning Coalition of Southwest Florida. (Invited)

Catherine Scott-Little, Ph.D.,² Assistant Professor, Department of Human Development and Family Studies, University of North Carolina-Greensboro. (Invited)

Catherine Sophian, Ph.D.,¹ Professor, Department of Psychology, University of Hawaii at Manoa.

Prentice Starkey, Ph.D.,¹ Associate Professor, Graduate School of Education, University of California, Berkeley.

Julie Washington, Ph.D.,² Professor, Department of Audiology and Speech Language Pathology, Wayne State University. (Invited)

Amy Wetherby, Ph.D.,² L.L. Schendel Professor, Department of Communication Disorders, Florida State University (Invited)

¹ Individuals who have expertise in the area of early childhood with a research emphasis on mathematics or science.

² Individuals who have expertise in the area of early childhood with other research emphases.

³ Individuals who are early childhood practitioners.

3.0 PROCESS FOR PANEL PROCEEDINGS

The Panel of Experts was convened on December 17-18, 2007 in Orlando, Florida.

The members of the Panel of Experts who were in attendance included:

Cheryl Fountain, Ph.D.
Herbert Ginsburg, Ph.D.
Alice Klein, Ph.D.
Thomas Logan, Ph.D.

Christopher Lonigan, Ph.D.
Catherine Sophian, Ph.D.
Prentice Starkey, Ph.D.

The meeting was facilitated by Shan Goff, Executive Director, Office of Early Learning, Florida Department of Education, with assistance from Beth Phillips, Ph.D., Assistant Professor, Department of Educational Psychology and Learning Systems, and Florida Center for Reading Research, Florida State University.

Other participants included:

Agency for Workforce Innovation:

Noelle Bee, Voluntary Prekindergarten (VPK) Coordinator, Office of Early Learning
Marce Verzaro- O'Brien, Ph.D., Director, TTAS/OEL Quality Initiative

Department of Education:

Erika Hall, Program Specialist, Office of Early Learning
Tara Huls, Ph.D., Program Specialist, Office of Early Learning
Mary Jane Tappen, Executive Director, Florida's Office of Math and Science

Florida Center for Reading Research, Florida State University:

Karli Barowski, Research Assistant

North East Florida Educational Consortium:

Jo Hudson, Reading Specialist

VPK Regional Facilitators:

Kerry Allen, South Region
Heather Sargent, Southeast Region

Members of the public in attendance:

Randy Roth, Representative, Kaplan Early Learning Company (12/17)
Caren Abbott, Early Childhood Resource Teacher, Orange County Public Schools

The agenda for December 17 began with introductions and an overview of the purpose of the meeting followed by a PowerPoint presentation and discussion of information regarding the following:

- Voluntary Prekindergarten (VPK) Education Program's Background and Requirements
- Statistics
- History of the Voluntary Prekindergarten (VPK) Education Program Standards (2005)
- 2006-07 and 2007-08 Florida Kindergarten Readiness Screener (FLKRS) Results.

The agenda for December 17 continued with the discussion of background information,

followed by a PowerPoint presentation on Florida's New World-class Math and Science Standards and a discussion of the expected outcomes regarding the review of the VPK Education Standards in the Cognitive Development and General Knowledge domain.

The agenda for December 18 began with a review of the prior day's accomplishments and focused on the discussion of recommendations for revision in the Cognitive Development and General Knowledge domain.

The discussion and recommendations of the Panel of Experts are summarized in the following section.

4.0 COGNITIVE AND GENERAL KNOWLEDGE STANDARDS

Review by the Panel of Experts

The task for the Panel of Experts was to assist in reviewing the current VPK Education Standards in the domain of Cognitive Development and General Knowledge and to make recommendations for revision regarding the sub domains of Mathematical Thinking and Scientific Thinking.

It was emphasized that the purpose of the Panel of Experts was to identify any possible gaps between the current VPK Education Standards and the kindergarten math and science standards. Then the panel considered the question, “What do we know from research?” (at what age can children do a task; what data is available), to guide their review of the Cognitive Development and General Knowledge domain regarding the sub domains of Mathematical Thinking and Scientific Thinking.

During their review of Mathematical Thinking, the panel discussed the following issues:

- Should all of the proposed standards have a benchmark?
- Benchmark should be defined as what we want the teacher to do with the students.
- Crosswalk – conceptual overlaps
- The current definition of mathematics in the VPK Standards is reasoning. However, the definition should also include representation, quantity, and world knowledge.
- What are the specific mathematical concepts that need to be included in the domain of Cognitive and General Knowledge under Mathematical Thinking?
- There are other concepts to start with besides of the concept of number that actually lead up to the concept of number.
- Mathematical process
 - Deductive logic
 - Problem solving strategies
 - Using mathematical language
- Approach: Take a standard like counting and step it out several sub-goals (Check norms) – a more practical approach
- Suggested sequences:
 - Counting, comparison of quantities, space, measurement and geometry
 - Number – ideas about more or less, counting words, how many things there are, then what happens when you operate on sets.
- Making distinctions between differences in “more”
- Specifics should be included to further clarify what the standards mean.

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- How to describe the goals to get the kind of teaching that we want to see.
 - Intentional teaching strategies and suggestions for training on the new standards.
 - Take out classification - relocate to general cognitive – define meaning of and move to Science

During their review of Scientific Thinking, the panel discussed the following issues:

- Suggestions for experts to consult in the field of science.
- Crosswalk science to other domains (e.g. Emergent Literacy- motivation to write, record information)
- Should inquiry/scientific mathematical process be together or separate?
- Referencing the psychological world and keeping it in the Social and Emotional domain.
- Scientific Thinking: Inquiry / Scientific & Mathematical Process
 - Careful observation and description events and processes
 - Analysis and conjecture
 - Plan for investigation
 - Conduct and observe and record
 - Evaluate findings of results
 - Prediction and hypothesis generation and testing (crosswalk to data analysis)
- Systematic inquiry process that we want the child to know and be able to do:
 - What do I see?
 - What do I think?
 - What do I wonder?
 - What did I find out?
- Ontogenesis – the development of an individual to maturity.
- Cross reference to data analysis (scientific process)
- Three Worlds
 - ❖ Physical world
 - How things work
 - Force, motion, inertia, gravity
 - ❖ Biological world
 - How living things work (e.g. how the body works: nutrition)
 - How living things change
 - Growth and development
 - ❖ Psychological world – keep in Social and Emotional domain

Consensus of Panel of Experts

The Panel of Experts' discussion resulted in consensus recommendations in the following areas:

- **Concept areas** that should be separated/combined or added/deleted in the sub domains of Mathematical thinking and Scientific Inquiry
- **Standards and benchmarks** that should be added within the sub domains of Mathematical thinking and Scientific Inquiry, and
- **Science Experts** should be consulted to make more depth revisions to the sub domain of Scientific Thinking.

The recommendations offered by the Panel of Experts were

1. Organize the Mathematical Thinking sub domain into the following concept areas:
 - Numbers
 - Number Operations
 - Measurement
 - Geometry
 - Spatial Relations
 - Patterns and Seriation.
2. Include the following standards and benchmarks in the area of Numbers:
 - Concept of sets
 - Enumeration
 - ConstructionBenchmark: Sets up to 15
 - Comparison of quantities - quantity, compare equal, more, or less between two sets; regardless of the physical attributes
 - Children begin to develop a conceptual/mental number sense – the idea that something is a lot more than something else; relative value;
 - Concept of unit
 - Assign and relate numerical representations among numerals, sets, and number words
 - Counting; knowing sequence of number names; cardinality
Benchmark: 20 – 31(allow the introduction of decade instruction of counting – recognizing the pattern)
 - Ordinality; terms and positions
Benchmark: understanding concept of relative position with concrete elements (children, objects) and naming: first, second, third, fourth, fifth (e.g. line children up 1st through 5th; then reverse and 5th becomes 1st).

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- Working with one to one correspondence; equality of two sets
3. Include the following standards and benchmarks in the area of Number Operations:
- How you combine numbers
 - Addition and subtraction using concrete set of objects – developmental sequence (any data to support?)
Benchmark: Using a variety of set sizes up to ten
Able to demonstrate the strategy used
 - Use mental representation to solve at least smaller number problems (number facts up to 4 or 5)
 - Use external manipulatives to solve larger problems (e.g. fingers or blocks)
 - Remembering some number facts
 - Ability to check the results with counting
 - Division begins to develop – partitioning and equal sharing
 - Solve addition and subtraction problems with sets of objects or embedded in story problems
 - Using single sets - change problems with objects and without objects present
 - Using two sets – combine/compare problems with objects and without objects present
 - Additive decomposition and composition of concrete sets ($4 = 3+1/2+2$; etc.)
commutativity and inversion
Benchmark: Two or three inversion; commutativity; four or five composition
4. Include the following standards in the area of Measurement:
- Comparison of continuous quantities along various dimensions like length, weight, height, and teach the terms associated with these dimensions
 - Developmental sequence in measurement
 - Aligning two objects along a physical dimension such length, weight or capacity
 - Intermediary – compare via non-standard reference
 - Enumeration via iteration (repeating) of a non-standard unit
 - Inverse relation between the size of the unit and number of units
 - Representation and analysis of data (e.g. graphing, charting, pictographs)
 - Collect
 - Sorting
 - Representing (e.g. charting)
 - Analysis (e.g. comparisons of counts)
 - Graphical representation of mathematical relations (graphing relationships between objects, objects (e.g. measuring anything with different size units; paper clips vs. popsicle sticks or triangles vs. squares) & graphing results


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- Analyzing and predicting the results of the data collection (e.g. predicting it will take more paper clips than popsicle sticks to depict measurement)
5. Include the following standards and benchmarks in the area of Geometry:
- Shape - Need exposure to shapes with more than four sides; and use accurate terminology
 - Identify, name, categorize, construct and analyze two dimensional shapes
Benchmark: Circle, triangle, square, rectangle, ovals, rhombus – two sets of parallel lines; analyze: the number of sides, the number of angles
 - Identify, name, categorize, construct and analyze three dimensional shapes
Benchmark: Sphere, cube, tetrahedron; analyze: counts number of faces, the number of sides and angles
 - Comparing properties of different shapes (e.g. number of sides, number of angles)
 - Shapes are equivalent in different orientations (e.g. slide, flip, rotate)
 - Shapes are proportionally similar
Benchmark: Make sure to get examples and non-examples
 - Composing and decomposing shapes (e.g. one square becomes two triangles)
Benchmark: (e.g. square becomes two triangles or four squares or rectangles; two squares become rectangles; hexagons become rhombus, trapezoids or triangles)
 - Analyze and construct simple symmetries in two dimensions
Benchmark: Exploring concepts of examples and non-examples (e.g. paper folding activities)
6. Include the following standards in the area of Spatial Relations (position, location, orientation):
- Position knowledge – using activities and spatial position terms to identify and describe relative positions (e.g. above/below, next to/beside, on top of, left/right, inside/outside)
 - Understanding and describing relative position from different perspectives
 - Understanding of orientation terms (e.g. horizontal, diagonal, vertical)
 - Use of mental spatial representation (cognitive maps) to move through space and find places in space
 - Use of directions to move through space and find places in space, (e.g. obstacle courses, Simon Says, Mother May I, hop scotch, giving simple directions)
 - Use of external spatial representations (external maps) to move through space and find places in space

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7. Include the following standards in the area of Patterns and Seriation:
- Recognizing patterns vs. non-patterns (e.g. abab vs. rainbow)
 - Recognize pattern units, (e.g. a/b, dog/cat, a/b/c, dog/cat/cow)
 - Recognize the rule that governs pattern unit
 - (e.g. Finding the missing element in a pattern (abab_b))
 - Duplicating an identical pattern with identical elements
 - Duplicating equivalent patterns with different elements (abab vs. cdcd)
 - Seriation – alternative wording (per Dr. Ginsburg) 1. putting objects in increasing order of size where the increasing unit is constant or 2. ordering objects in regular units of size. For example give children a set of different size sticks that vary in size by a regular amount and ask the children to put them in order from smallest to largest.
 - Extending patterns
8. Organize the Scientific Thinking sub domain into the following concept areas:
- Inquiry: Scientific and Mathematical Processes
 - Ontogenesis
 - Physical World
 - Biological World

APPENDIX A: *2005 Florida Voluntary Prekindergarten Education Standards*
APPENDIX B: *Proposed 2008 Florida Voluntary Prekindergarten Education Standards*

APPENDIX A

Florida Department of Education



Office of
Early Learning



Voluntary Prekindergarten Education Standards

I. Physical Health

A. Physical Health

- A.1. Shows characteristics of good health to facilitate learning
- A.2. Demonstrates visual ability to facilitate learning
- A.3. Exhibits auditory ability to facilitate learning
- A.4. Performs oral hygiene routines
- A.5. Shows familiarity with the role of a primary health care provider

B. Knowledge of Wellness

- B.1. Shows that basic physical needs are met
- B.2. Follows basic health and safety rules
- B.3. Participates in physical fitness activities
- B.4. Makes wise food choices
- B.5. Performs some self-care tasks independently

II. Approaches to Learning

A. Eagerness and Curiosity

- A.1. Shows eagerness and curiosity as a learner

B. Persistence

- B.1. Attends to tasks and seeks help when encountering a problem

C. Creativity and Inventiveness

- C.1. Approaches tasks with flexibility and inventiveness

D. Planning and Reflection

- D.1. Shows some planning and reflection

III. Social and Emotional Development

A. Self-concept

- A.1. Demonstrates self-concept
- A.2. Shows some self-direction

B. Self-control

- B.1. Follows simple classroom rules and routines
- B.2. Uses classroom materials carefully
- B.3. Manages transitions

C. Relationships with Adults

- C.1. Interacts easily with familiar adults
- C.2. Seeks adult assistance appropriately

III. Social and Emotional Development (cont.)

D. Relationships with Peers

- D.1. Interacts easily with one or more children
- D.2. Develops special friendships
- D.3. Participates in the group life of the class
- D.4. Shows empathy and caring for others

E. Social Problem Solving

- E.1. Seeks adult help when needed to resolve conflicts

IV. Language and Communication

A. Listening

- A.1. Gains meaning by listening

Benchmark: Child shows understanding by asking and answering relevant questions, adding comments relevant to the topic, and reacting appropriately to what is said

- A.2. Follows two- and three-step directions

Benchmark: Child has mastery of two-step directions and usually follows three-step directions

B. Speaking

- B.1. Speaks clearly enough to be understood without contextual clues

Benchmark: Child's speech is understood by both a familiar and an unfamiliar adult.

C. Vocabulary

- C.1. Shows an understanding of words and their meanings

Benchmark a: Child has age appropriate vocabulary in several categories and demonstrates a wide variety of words within each category (e.g., world knowledge, names of body parts, feelings, colors, shapes, jobs, tools, plants, animals and their habitats, and foods; words that describe-adjectives and adverbs; and action words-verbs)

Benchmark b: Child has mastery of instructional language of the classroom and objects in the classroom (e.g. same and different, in front of and behind, next to, opposite, below)

Benchmark c: Child understands or knows the meaning of many thousands of words, many more than he or she uses

- C.2. Uses an expanded vocabulary to describe many objects, actions, and events

Benchmark a: Child uses a large speaking vocabulary, adding new words weekly

Benchmark b: Child uses category labels (e.g. fruit, vegetable, animal, transportation, tools)

D. Sentences and Structure

- D.1. Uses age-appropriate grammar in conversations and increasingly complex phrases and sentences

Benchmark a: Child typically uses complete sentences of four or more words, usually with subject, verb, and object order

Benchmark b: Child uses regular and irregular plurals, regular past tense, personal and possessive pronouns, and subject-verb agreement

- D.2. Connects phrases and sentences to build ideas

Benchmark a: Child uses sentences with more than one phrase

Benchmark b: Child combines more than one idea using complex sentences

Benchmark c: Child combines sentences that give lots of detail, stick to the topic, and clearly communicate intended meaning

IV. Language and Communication (cont.)

E. Conversation

E.1. Uses language to express needs and feelings, share experiences, predict outcomes and resolve problems

Benchmark: Child demonstrates varied uses of language e.g., requesting, commenting, using manner words, problem-solving)

E.2. Initiates, ask questions, and responds to adults and peers in a variety of settings

Benchmark a: Child follows another's conversational lead, appropriately initiates or terminates conversations, or appropriately introduces new content

Benchmark b: Child provides appropriate information for the setting (e.g., introduces himself or herself; requests assistance such as asking for help; answers questions such as providing name and address to a police officer or other appropriate adult)

E.3. Uses appropriate language and style for context

Benchmark a: Child demonstrates knowledge of verbal conversational rules (e.g., appropriately takes turns, does not interrupt, uses appropriate verbal expressions, and uses appropriate intonation)

Benchmark b: Child demonstrates knowledge of nonverbal conversational rules (e.g., appropriate eye contact, appropriate facial expressions, appropriate distance in conversation)

Benchmark c: Child matches language to social contexts (e.g., uses volume appropriate to context, addresses adults more formally than he or she addresses other children)

V. Emergent Literacy

A. Emergent Reading

A.1. Shows motivation for reading

Benchmark a: Child enjoys reading and reading-related activities (e.g., selects reading and reading-related activities when given a choice, pretends to read to others)

Benchmark b: Child uses books and other written materials appropriately (e.g., pretends to read, looks at books in an orderly fashion, turns one page at a time, goes from front to back)

Benchmark c: Child asks to be read to or asks the meaning of written text

A.2. Shows age-appropriate phonological awareness

Benchmark a: Child combines words to make a compound word (e.g. "foot" + "ball" = "football") and deletes a word from a compound word (e.g., "starfish" – "star" – "fish")

Benchmark b: Child combines syllables into words (e.g. "sis" + "ter" = "sister")

Benchmark c: Child can delete a syllable from a word (e.g., "trumpet" – "trum" = "pet" or "candy" – "dy" = "can")

Benchmark d: Child combines onset and rime to form a familiar one-syllable word with pictorial support (e.g. when shown several pictures, and adult says "c" + "at", child can select the picture of the cat)

A.3. Shows alphabetic knowledge

Benchmark a: Child recognizes almost all letters by name (e.g., when shown a group of letters, can accurately identify the letter that is named)

Benchmark b: Child names most letters (e.g., when shown a letter, can accurately say its name)

Benchmark c: Child names some letter sounds (e.g., when shown a letter, can accurately say the sound the letter makes)

Benchmark d: Child recognizes some letter sounds (e.g., when shown a group of letters, can accurately identify the letter of the sound given)

V. Emergent Literacy (cont.)

A. Emergent Reading (cont.)

A.4. Shows understanding of text read aloud

Benchmark a: Child retells or reenacts story after it is read aloud

Benchmark b: Child asks and answers appropriate questions about the story (e.g., “What just happened?” “What might happen next?” “What would happen if...?” “What was so silly about...?”)

B. Emergent Writing

B.1. Shows motivation to engage in written expression

Benchmark: Child intentionally uses scribbles/writing to convey meaning (e.g., signing artwork, captioning, labeling, creating lists, making notes)

B.2. Uses letter-like shapes, symbols, and letters to convey meaning

Benchmark a: Child independently uses letters or symbols to make words or parts of words

Benchmark b: Child writes own name (first name, last name, or frequent nickname), not necessarily with full correct spelling or well-formed letters

B.3. Demonstrates age-appropriate ability to write letters

Benchmark: Child independently writes some letters on request

B.4. Shows knowledge of structure of written composition

Benchmark: When writing or dictating, child uses appropriate writing conventions (e.g., a letter starts with “Dear” or the idea that a story has a beginning, middle, and end)

VI. Cognitive Development and General Knowledge

A. Mathematical Thinking

A.a. Mathematical Processes

A.a.1. Begins to use simple strategies to solve mathematical problems

A.b. Patterns, Relationships, and Functions

A.b.1. Sorts objects into subgroups that vary by one or two attributes

A.b.2. Recognizes simple patterns and duplicates them

A.b.3. Collects and analyzes information (data analysis)

A.c. Number and Operations

A.c.1. Shows beginning understanding of number and quantity

A.d. Geometry and Spatial Relations

A.d.1. Begins to recognize and describe the attributes of shapes

A.d.2. Shows understanding of and uses several positional words

A.e. Measurement

A.e.1. Orders, compares, and describes objects according to a single attribute

A.e.2. Participates in measuring activities

B. Scientific Thinking

B.a. Inquiry

B.a.1. Asks questions and uses senses to observe and explore materials and natural phenomena

B.a.2. Uses simple tools and equipment for investigation

B.a.3. Makes comparisons among objects

C. Social Studies

C.a. People, Past and Present

C.a.1. Identifies similarities and differences in personal and family characteristics

C.b. Human Interdependence

C.b.1 Begins to understand family needs, roles and relationships

VI. Cognitive Development and General Knowledge (cont.)

C. Social Studies (cont.)

C.b.2. Describes some people's jobs and what is required to perform them

C.b.3. Begins to be aware of technology and how it affects life

C.c. Citizenship and Government

C.c.1 Demonstrates awareness of rules

C.c.2. Shows awareness of what it means to be a leader

C.d. People and Where They Live

C.d.1. Describes the location of things in the environment

C.d.2. Shows awareness of the environment

D. The Arts

D.a. Expression and Representation

D.a.1. Uses a variety of art materials for tactile experience and exploration

D.a.2. Participates in group music experiences

D.a.3. Participates in creative movement, dance, and drama

D.b. Understanding and Appreciation

D.b.1. Responds to artistic creations or events

VII. Motor Development

A. Gross Motor Development

A.1. Moves with balance and control

A.2. Coordinates movements to perform simple tasks

B. Fine Motor Development

B.1. Uses strength and control to perform simple tasks

B.2. Uses eye-hand coordination to perform tasks

B.3. Shows beginning control of writing, drawing, and art tools

APPENDIX B

2008 Proposed Voluntary Prekindergarten Education Standards

Proposed additions are underlined. Proposed deletions have a ~~strike-through~~.

I. Physical Health

A. Physical Health

- A.1. Shows characteristics of good health to facilitate learning
- A.2. Demonstrates visual ability to facilitate learning
- A.3. Exhibits auditory ability to facilitate learning
- A.4. Performs oral hygiene routines
- A.5. Shows familiarity with the role of a primary health care provider

B. Knowledge of Wellness

- B.1. Shows that basic physical needs are met
- B.2. Follows basic health and safety rules
- B.3. Participates in physical fitness activities
- B.4. Makes wise food choices
- B.5. Performs some self-care tasks independently

II. Approaches to Learning

A. Eagerness and Curiosity

- A.1. Shows eagerness and curiosity as a learner

B. Persistence

- B.1. Attends to tasks and seeks help when encountering a problem

C. Creativity and Inventiveness

- C.1. Approaches tasks with flexibility and inventiveness

D. Planning and Reflection

- D.1. Shows some planning and reflection

III. Social and Emotional Development

A. Self-concept

- A.1. Demonstrates self-concept
- A.2. Shows some self-direction

B. Self-control

- B.1. Follows simple classroom rules and routines
- B.2. Uses classroom materials carefully
- B.3. Manages transitions

C. Relationships with Adults

- C.1. Interacts easily with familiar adults
- C.2. Seeks adult assistance appropriately

D. Relationships with Peers

- D.1. Interacts easily with one or more children
- D.2. Develops special friendships
- D.3. Participates in the group life of the class
- D.4. Shows empathy and caring for others

E. Social Problem Solving

- E.1. Seeks adult help when needed to resolve conflicts

IV. Language and Communication

A. Listening

- A.1. Gains meaning by listening
Benchmark: Child shows understanding by asking and answering relevant questions, adding comments relevant to the topic, and reacting appropriately to what is said
- A.2. Follows two- and three-step directions
Benchmark: Child has mastery of two-step directions and usually follows three-step directions

B. Speaking

- B.1. Speaks clearly enough to be understood without contextual clues
Benchmark: Child's speech is understood by both a familiar and an unfamiliar adult.

C. Vocabulary

- C.1. Shows an understanding of words and their meanings
Benchmark a: Child has age appropriate vocabulary in several categories and demonstrates a wide variety of words within each category (e.g., world knowledge, names of body parts, feelings, colors, shapes, jobs, tools, plants, animals and their habitats, and foods; words that describe-adjectives and adverbs; and action words-verbs)
Benchmark b: Child has mastery of instructional language of the classroom and objects in the classroom (e.g. same and different, in front of and behind, next to, opposite, below)
Benchmark c: Child understands or knows the meaning of many thousands of words, many more than he or she uses
- C.2. Uses an expanded vocabulary to describe many objects, actions, and events
Benchmark a: Child uses a large speaking vocabulary, adding new words weekly
Benchmark b: Child uses category labels (e.g. fruit, vegetable, animal, transportation, tools)

D. Sentences and Structure

- D.1. Uses age-appropriate grammar in conversations and increasingly complex phrases and sentences
Benchmark a: Child typically uses complete sentences of four or more words, usually with subject, verb, and object order
Benchmark b: Child uses regular and irregular plurals, regular past tense, personal and possessive pronouns, and subject-verb agreement
- D.2. Connects phrases and sentences to build ideas
Benchmark a: Child uses sentences with more than one phrase
Benchmark b: Child combines more than one idea using complex sentences
Benchmark c: Child combines sentences that give lots of detail, stick to the topic, and clearly communicate intended meaning

E. Conversation

- E.1. Uses language to express needs and feelings, share experiences, predict outcomes and resolve problems
Benchmark: Child demonstrates varied uses of language e.g., requesting, commenting, using manner words, problem-solving)
- E.2. Initiates, ask questions, and responds to adults and peers in a variety of settings
Benchmark a: Child follows another's conversational lead, appropriately initiates or terminates conversations, or appropriately introduces new content
Benchmark b: Child provides appropriate information for the setting (e.g., introduces himself or herself; requests assistance such as asking for help;

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- answers questions such as providing name and address to a police officer or other appropriate adult)
- E.3. Uses appropriate language and style for context
Benchmark a: Child demonstrates knowledge of verbal conversational rules (e.g., appropriately takes turns, does not interrupt, uses appropriate verbal expressions, and uses appropriate intonation)
Benchmark b: Child demonstrates knowledge of nonverbal conversational rules (e.g., appropriate eye contact, appropriate facial expressions, appropriate distance in conversation)
Benchmark c: Child matches language to social contexts (e.g., uses volume appropriate to context, addresses adults more formally than he or she addresses other children)

V. Emergent Literacy

A. Emergent Reading

- A.1. Shows motivation for reading
Benchmark a: Child enjoys reading and reading-related activities (e.g., selects reading and reading-related activities when given a choice, pretends to read to others)
Benchmark b: Child uses books and other written materials appropriately (e.g., pretends to read, looks at books in an orderly fashion, turns one page at a time, goes from front to back)
Benchmark c: Child asks to be read to or asks the meaning of written text
- A.2. Shows age-appropriate phonological awareness
Benchmark a: Child combines words to make a compound word (e.g. “foot” + “ball” = “football”) and deletes a word from a compound word (e.g., “starfish” – “star” – “fish”)
Benchmark b: Child combines syllables into words (e.g. “sis” + “ter” = “sister”)
Benchmark c: Child can delete a syllable from a word (e.g., “trumpet” – “trum” = “pet” or “candy” – “dy” = “can”)
Benchmark d: Child combines onset and rime to form a familiar one-syllable word with pictorial support (e.g. when shown several pictures, and adult says “c” + “at”, child can select the picture of the cat)
- A.3. Shows alphabetic knowledge
Benchmark a: Child recognizes almost all letters by name (e.g., when shown a group of letters, can accurately identify the letter that is named)
Benchmark b: Child names most letters (e.g., when shown a letter, can accurately say its name)
Benchmark c: Child names some letter sounds (e.g., when shown a letter, can accurately say the sound the letter makes)
Benchmark d: Child recognizes some letter sounds (e.g., when shown a group of letters, can accurately identify the letter of the sound given)
- A.4. Shows understanding of text read aloud
Benchmark a: Child retells or reenacts story after it is read aloud
Benchmark b: Child asks and answers appropriate questions about the story (e.g., “What just happened?” “What might happen next?” “What would happen if...?” “What was so silly about...?”)

B. Emergent Writing

- B.1. Shows motivation to engage in written expression
Benchmark: Child intentionally uses scribbles/writing to convey meaning (e.g., signing artwork, captioning, labeling, creating lists, making notes)
- B.2. Uses letter-like shapes, symbols, and letters to convey meaning
Benchmark a: Child independently uses letters or symbols to make words or parts of words
Benchmark b: Child writes own name (first name, last name, or frequent nickname), not necessarily with full correct spelling or well-formed letters
- B.3. Demonstrates age-appropriate ability to write letters
Benchmark: Child independently writes some letters on request
- B.4. Shows knowledge of structure of written composition
Benchmark: When writing or dictating, child uses appropriate writing conventions (e.g., a letter starts with “Dear” or the idea that a story has a beginning, middle, and end)

VI. Cognitive Development and General Knowledge

A. Mathematical Thinking

A.a. *Mathematical Processes* **Number**

~~A.a.1. *Begins to use simple strategies to solve mathematical problems*~~

A.a.1. Shows understanding of how to enumerate and construct sets

Benchmark a: Child counts sets up to 15.

Benchmark b: Child constructs sets up to 15.

A.a.2. Shows understanding by participating in the comparison of quantities

Benchmark a: Child compares two sets to determine if they are equal.

Benchmark b: Child compares two sets to determine if one set has more.

Benchmark c: Child compares two sets to determine if one set has less.

A.a.3. Begins to develop an understanding of number sense

Benchmark: Child determines one quantity of objects is a lot more than another quantity of objects.

A.a.4. Assigns and relates numerical representations among numerals, sets, and number words

Benchmark: Child assigns a number to each item or set being counted.

A.a.5. Counts and knows the sequence of number names

Benchmark a: Child counts and recognizes numbers up to 20.

Benchmark b: Child counts up to 31 by understanding pattern of adding by one.

A.a.6. Shows understanding of and uses appropriate terms to describe ordinal positions

Benchmark a: Child demonstrates the concept of ordinal position with concrete elements (e.g., children or objects).

Benchmark b: Child names ordinal positions (e.g., first, second, third, fourth, fifth).

A.a.7. Demonstrates understanding of one to one correspondence

Benchmark a: Child demonstrates one to one correspondence when counting.

Benchmark b: Child demonstrates one to one correspondence to determine if two sets are equal.

A.e.b. **Number and Operations**

~~A.c.1. *Shows beginning understanding of number and quantity*~~

A.b.1. Shows understanding of how to combine numbers

Benchmark a: Child indicates there are more when they add objects together.

Benchmark b: Child indicates there are less when they subtract objects.

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- A.b.2. Shows understanding of addition and subtraction using a concrete set of objects
Benchmark a: Child adds and subtracts up to ten using a variety of set sizes.
Benchmark b: Child uses mental representation to solve at least smaller number problems (number facts up to 4 or 5).
Benchmark c: Child uses external manipulatives to solve larger problems (e.g. fingers, blocks).
Benchmark d: Child remembers some number facts.
Benchmark e: Child has the ability to check the results with counting.
- A.b.3. Solves addition and subtraction problems with sets of objects or embedded in story problems
Benchmark a: Child solves addition problems using single sets with objects.
Benchmark b: Child solves subtraction problems using single sets with objects.
Benchmark c: Child solves addition problems using two sets with objects.
Benchmark d: Child solves subtraction problems using two sets with objects.
Benchmark e: Child solves addition and subtraction problems presented in story format
- A.b.4. Creates the same sum by combining different sets of objects together
- A.b.5. Begins to develop an understanding of division by dividing a group into parts
- A.b.c. **Patterns and Seriation**, Relationships, and Functions*
- ~~A.b.1. Sorts objects into subgroups that vary by one or two attributes~~
- ~~A.b.2. Recognizes simple patterns and duplicates them~~
- ~~A.b.3. Collects and analyzes information (data analysis)~~
- A.c.1. Recognizes patterns and non-patterns (e.g. a/b-a/b vs. rainbow)
- A.c.2. Recognizes pattern units (e.g. a/b, dog/cat, a/b/c, dog, cat, cow)
- A.c.3. Recognizes and verbalizes the rule that governs the pattern unit (e.g. Child can tell the teacher which element is missing from a pattern, abab b; and verbalizes the rule by saying something like “after an a there is a b” or “Two ‘B’s don’t go together, it has to go ABAB”)
- A.c.4. Completes the pattern unit by identifying which element is missing (e.g. Finding the missing element in a pattern (abab b))
- A.c.5. Duplicates patterns with at least 2 elements
Benchmark a: Child duplicates an identical pattern with identical elements.
Benchmark b: Child duplicates equivalent patterns with different elements (abab pattern duplicated w/ cdcd).
- A.c.6. Duplicates patterns with different elements than the original pattern
- A.c.7. Extends patterns (Example needed of specifically the skill is here—is it a/b, a/b/c, a/b/c/d, or a/b/, aabb, aaabbb, or does it matter?)
- A.c.8. Orders, compares, and describes objects according to a single attribute
Benchmark a: Child places objects in increasing order of size where the increasing unit is constant (ex: unit blocks)
Benchmark b: Child verbalizes why objects were placed in order (Describes process of how and why)
- A.d. **Geometry and Spatial Relations** (Spatial Relations becomes a separate sub-category)
- ~~A.d.1. Begins to recognize and describe the attributes of shapes~~
- ~~A.d.2. Shows understanding of and uses several positional words (moved to A.e.1.)~~
- A.d.1. Identifies shapes using accurate terminology
- A.d.2. Understands various two-dimensional shapes, including circle, triangle, square, rectangle, oval, rhombus

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- Benchmark a: Child names each of the two-dimensional shapes (circle, triangle, square, rectangle, oval, rhombus).
- Benchmark b: Child categorizes (sorts) each of the two-dimensional shapes.
- Benchmark c: Child constructs each of the two-dimensional shapes.
- Benchmark d: Child analyzes the number of sides of two-dimensional shapes (need information here about what we mean by analyze, in description & examples).
- Benchmark e: Child analyzes the number of angles of two-dimensional shapes.
- A.d.3. Understands various three-dimensional shapes, including sphere, cube, tetrahedron
- Benchmark a: Child names each of the three-dimensional shapes.
- Benchmark b: Child categorizes (sorts) each of the three-dimensional shapes.
- Benchmark c: Child constructs each of the three-dimensional shapes.
- Benchmark d: Child analyzes three-dimensional shapes by counting the number of faces of three-dimensional shapes.
- Benchmark e: Child analyzes the number of sides and angles of three-dimensional shapes.
- A.d.4. Compares properties of different shapes (e.g. number of sides, number of angles, number of faces (three-dimensional))
- A.d.5. Shows understanding that shapes are equivalent (remain the same) in different orientations
- Benchmark a: Child slides shapes.
- Benchmark b: Child flips shapes.
- Benchmark c: Child rotates shapes.
- A.d.6. Shows knowledge that shapes are proportionally similar
- Benchmark a: Child composes shapes (e.g. square becomes two triangles or four squares or rectangles; two squares become rectangles; hexagons become rhombus, trapezoids or triangles) (GIVE EXAMPLES AND NON-EXAMPLES).
- Benchmark b: Child decomposes shapes (GIVE EXAMPLES AND NON-EXAMPLES).
- A.d.7. Analyzes and constructs simple symmetries in two-dimensions
- Benchmark: Child explores examples of symmetry and non-symmetry through paper folding activities.
- A.e. **Spatial Relations**
- A.e.1. Shows understanding of and uses several positional words (e.g. above, below, next to, beside, on top of, left, right, inside, outside)
- Benchmark a: Child shows understanding of positional words (receptive knowledge).
- Benchmark b: Child uses the terms (expressive knowledge): above, below, next to, beside, on top of, left, right, inside and outside.
- A.e.2. Describes relative position from different perspectives (e.g. "I am on top of the climber and you are below me.")
- A.e.3. Understands and can tell the difference between orientation terms such as horizontal, diagonal, and vertical
- A.e.4. Uses mental spatial representation (cognitive maps) to move through space and find places in space
- A.e.5. Uses directions to move through space and find places in space (e.g. obstacle courses, Simon Says, Mother May I?, hop scotch, giving simple directions)
- A.e.6. Uses external spatial representations (external maps) to move through space and find places in space

A.e.f. Measurement

~~A.e.1. Orders, compares, and describes objects according to a single attribute~~

A.f.1. Compares continuous quantities along various dimensions

Benchmark a: Child measures using length.

Benchmark b: Child measures using weight.

Benchmark c: Child measures using height.

Benchmark d: Child uses measurement vocabulary associated with the dimensions above.

~~A.e.2. Participates in measuring activities~~

A.f.2. Shows understanding of a developmental sequence in measurement

Benchmark a: Child aligns two objects along a physical dimension such length, weight or capacity.

Benchmark b: Child compares via non-standard reference.

Benchmark c: Child enumerates via iteration (repeating) of a non-standard unit.

Benchmark d: Child uses the inverse relation between the size of the unit and number of units.

A.f.3. Represents and analyzes data

Benchmark a: Child assists with collecting and sorting materials to be graphed.

Benchmark b: Child works with teacher and small groups to represent mathematical relations in graphs, charts, and pictographs.

Benchmark c: Child analyzes, with teacher and small group, the relationship between items/objects represented by charts, graphs, and pictographs.

Benchmark d: Child predicts the results of a data collection, after much practice and multiple experiences over time.

B. Scientific Thinking

B.a. Inquiry

B.a.1. Asks questions and uses senses to observe and explore materials and natural phenomena

B.a.2. Uses simple tools and equipment for investigation

B.a.3. Makes comparisons among objects

C. Social Studies

C.a. People, Past and Present

C.a.1. Identifies similarities and differences in personal and family characteristics

C.b. Human Interdependence

C.b.1. Begins to understand family needs, roles and relationships

C.b.2. Describes some people's jobs and what is required to perform them

C.b.3. Begins to be aware of technology and how it affects life

C.c. Citizenship and Government

C.c.1. Demonstrates awareness of rules

C.c.2. Shows awareness of what it means to be a leader

C.d. People and Where They Live

C.d.1. Describes the location of things in the environment

C.d.2. Shows awareness of the environment

D. The Arts

D.a. Expression and Representation

D.a.1. Uses a variety of art materials for tactile experience and exploration

D.a.2. Participates in group music experiences

D.a.3. Participates in creative movement, dance, and drama

D.b. Understanding and Appreciation

D.b.1. Responds to artistic creations or events

VII. Motor Development

A. Gross Motor Development

- A.1. Moves with balance and control
- A.2. Coordinates movements to perform simple tasks

B. Fine Motor Development

- B.1. Uses strength and control to perform simple tasks
- B.2. Uses eye-hand coordination to perform tasks
- B.3. Shows beginning control of writing, drawing, and art tools