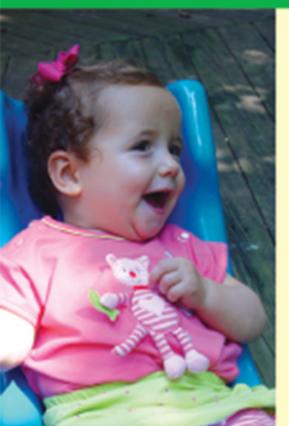# The Carolina Curriculum

for **Infants & Toddlers**

with Special Needs

THIRD EDITION

Nancy M. Johnson-Martin

Susan A. Attermeier

Bonnie J. Hacker

The Carolina Curriculum for Infants and Toddlers with Special Needs

Third Edition

By

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The case studies in this book are composites based on the authors' experiences. In all instances, names and identifying details have been changed to protect confidentiality.

The following Carolina Curriculum products can be purchased separately:

The Carolina Curriculum for Infants and Toddlers with Special Needs, Third Edition, Assessment Log and Developmental Progress Chart (available in English in print, on CD-ROM, or in PDF format on the web, and available in Spanish in PDF format on the web)

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Acknowledgments

This volume would not have been possible without the efforts of those who played a major role in the development of the two earlier versions of this curriculum. Specifically, we recognize Kenneth Jens, Ph.D., who coauthored the first two editions; Karen O'Donnell, Ph.D., and Peggy Ogelsby, Ph.D., who contributed to the chapter on guiding learning in the first edition; Judy Burke, who coordinated the initial field testing of the curriculum in the Infant Treatment Program at the University of North Carolina at Chapel Hill, Division for Disorders of Development and Learning; Sara Carter, CCC-SP, who provided major assistance in the development of the language portions of the second edition; and Barbara Davis Goldman, Ph.D., who contributed much to our thinking about language and cognitive and social skills in young children. We are also indebted to Harrie Chamberlin, Director of the Division for Disorders of Development and Learning, who encouraged us and supported the development of the Infant Treatment Program, and to James Gallagher, Ph.D., who was the director of the Frank Porter Graham Child Development Center and the Carolina Institute for the Early Education of the Handicapped, the umbrella under which the first edition of the curriculum was developed.

We acknowledge and thank those professionals who took time from their busy schedules to review the second edition of the curriculum and make suggestions for improving this revision.

Finally, we thank Bob Johnson for his time and expertise in capturing on film the personalities of our cover children; our families and friends for their support of our endeavors; Heather Shrestha for her encouragement and help in getting us started on this revision; and Mackenzie Lawrence for her wisdom, diligence, patience, and persistence in shepherding us from our first draft to the finished product.

*To the children, parents,
and dedicated child care workers who,
for the past 30 years, have come into our lives,
teaching us much of what we know about
human development, courage, determination, adaptability,
and the joy of accomplishment. Without them,
this curriculum would not have been created.*

O N E

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Introduction

There have been many changes in the field of early intervention since the first edition of *The Carolina Curriculum for Handicapped Infants and Infants at Risk* (Johnson-Martin, Jens, & Attermeier) was published in 1986. Following the enactment of the Education of the Handicapped Act Amendments of 1986 (PL 99-457), there was a dramatic expansion of early intervention services in the United States of America. We have progressed from having widely scattered services focused exclusively on the child to having programs in every state that focus on the child as part of a family unit and from having only a few therapists trained to work with young children with special needs to having a variety of personnel specifically educated and trained to work with this population and their families. There are now special educators, speech therapists, occupational therapists, physical therapists, psychologists, nurses, social workers, and nutritionists who are specialists in early intervention. Moreover, these professionals have learned to work together, not only sharing information and expertise but also allowing the boundaries between their roles to blur as appropriate. There has been a shift from professionals providing services primarily in center-based programs to providing services in homes, child care centers, and preschools. Professionals now form partnerships with parents, child care providers, and teachers to develop and implement intervention activities within the daily routines of the children they serve.

At the time the first *Carolina Curriculum* was developed, the field urgently needed materials for children functioning in the birth to 24-month range and for children with significant disabilities who could not be expected to develop evenly across all developmental domains. Thus, that curriculum focused on the birth to 24-month developmental period and tried to accommodate uneven developmental patterns by dividing the skills included in the five basic domains of development (personal-social, cognition, communication, fine motor, and gross motor) into 24

sequences of skills, arranged in an order that promoted building a new skill on the foundation of previously learned skills.

The acceptance of *The Carolina Curriculum for Handicapped Infants and Infants at Risk* encouraged the authors to develop a companion volume, *The Carolina Curriculum for Preschoolers With Special Needs* (CCPSN; Johnson-Martin, Attermeier, & Hacker, 1990), directed toward children in the 24- to 60-month developmental range. An attempt to integrate the infant and preschool curricula was made when the infant curriculum was revised in 1991 (*The Carolina Curriculum for Infants and Toddlers with Special Needs, Second Edition [CCITSN]*; Johnson-Martin, Jens, Attermeier, & Hacker). However, interventionists found it difficult to use either curriculum efficiently with children whose skills were scattered between the two volumes.

This revision of the CCITSN and its companion volume, the second edition of the CCPSN, are designed to provide a guide for working with children who have special needs from birth to 60 months. The infant and toddler curriculum now includes items that cover developmental skills from birth to 36 months, whereas the preschool curriculum includes items to cover developmental skills from 24 to 60 months. The sequence and the item names are identical in both volumes for the 24- to 36-month range so that interventionists can move smoothly from one curriculum to the other.

WHAT IS THE CCITSN APPROACH?

This edition, like previous editions of the CCITSN, links assessment to intervention through hierarchies of developmental tasks that are both relevant to typical routines for young children and pertinent to long-term adaptation—an approach described as "authentic" by Bagnato, Neisworth, and Munson (1997). That is, the intervention is integrated in a meaningful way into the child's life. Because each item on the assessment tool is linked directly to a curriculum item that describes procedures for teaching the assessed skill, readers have a framework for moving smoothly from assessment to intervention. This edition includes the following characteristics:

1. The curriculum is based on typical sequences of development but does not assume that a child will develop at the same rate across domains or even within one domain (e.g., a child may exhibit typical cognitive development along with very delayed motor development, a child may have age-appropriate grammatical structures but have significantly delayed vocabulary). Thus, the curriculum is designed for you to use both with the child who is developing slowly but in a typical pattern and with the child whose pattern of development is markedly atypical due to one or more impairments.

2. The curriculum approaches atypical development in two ways. First, the items in each developmental domain are subdivided into logical teaching sequences (i.e., a sequence in which item order is primarily determined by how one skill builds on another, not only by the mean age levels at which typical children learn the skills). Second, general modifications of the items in each develop-

mental domain are suggested so that you can accommodate a child's particular sensory or motor limitations. Thus, a child with severely delayed motor abilities but potentially average cognitive skills is not held up in progressing through the cognitive domain because he or she cannot do items that require typical motor skills.

3. The curriculum is based on the recognition that many infants and toddlers with serious impairments will never develop typically in spite of intervention efforts. Thus, in treating these children, you must consider teaching atypical but highly adaptive skills that may temporarily or permanently replace typical skills. For example, should a child be unable to talk, it is appropriate for you to teach pointing or another indicator response that will allow him or her to make choices, communicate wishes, and so forth.

4. Although the curriculum is developmental, with items drawn from standard developmental assessment tools, clinical experience, and the observations of Jean Piaget, behavioral theory and methodology underlie item construction. There is also a strong emphasis on developing adaptive functional skills, even if these are not necessarily typical (e.g., moving by scooting on one's buttocks or using a scooter board when crawling would be typical but is not functional).

WHAT IS INCLUDED IN THE CCITSN?

The CCITSN has been designed to provide a systematic approach for developing intervention plans for children with special needs who are functioning within the birth to 36-month developmental range. In this curriculum, you will find

*   A criterion-referenced assessment for determining the child's mastery of important social, cognitive, language, motor, and adaptive skills
*   Suggestions for selecting educational objectives from the assessment
*   Guidelines for developing activities for the individualized family service plan (IFSP) that incorporate the educational objectives

WHAT HAS CHANGED IN THIS REVISION?

The changes in this revision reflect the need to reorganize the sequences to provide a smooth transition to the CCPSN, the recognition of the greater sophistication of many of those who use the curriculum, and a desire to include information not addressed in the previous editions.

Expanded Age Range

As noted previously, this edition of the CCITSN is intended for use with children functioning in the birth to 36-month range; previous editions covered development in the birth to 24-month range.

Reorganization of Sequences

In addition to including sequences for the developmental level from 24 to 36 months, other sequences in the infant and toddler curriculum have been reorganized to smoothly flow into the preschool curriculum. Most notably, in the cognitive area, the items previously included in several Object Permanence sequences are now included in two sequences: 1) Attention & Memory: Visual and 2) Attention & Memory: Auditory. This change was made not only to provide better linkage to the preschool curriculum but also to accommodate current thinking about the nature of object permanence tasks, now often described as "memory and motor tasks" (Agular & Baillargeon, 1999, p. 137). This new description does not diminish the importance of these sequences but assigns them a somewhat different role in cognitive development.

Table 1.1 provides a list of the sequences and the developmental domains under which they are organized in this curriculum. Note that three sequences—Concepts/Vocabulary: Receptive; Concepts/Vocabulary: Expressive; and Attention & Memory: Auditory—are listed as Cognition/Communication. The skills assessed in these sequences are included on almost all tests of cognitive ability and almost all tests of language ability. Thus, they clearly belong in both domains and should be included in both when estimating a summary level of development for those domains.

Items also have been moved to different age levels on the Assessment Log based on the most recent revisions of commonly used tests of development, including the Bayley Scales of Infant Development, Second Edition (Bayley, 1993); the Peabody Developmental Motor Scales, Second Edition (Folio & Fewell, 2000); and the Preschool Language Scale, Fourth Edition (Zimmerman, Steiner, & Pond, 2002).

Greater Reliance on the Expertise of the Curriculum User

When the first edition of the curriculum was developed, it was reasonable to expect that most curriculum users would not only be fairly inexperienced in providing early intervention but also would not have a strong background in the development of young children. Given the rapid growth in professional development and the growing number of experienced interventionists, it seems appropriate to provide somewhat less elementary information and encourage you to make use of your experience and wisdom when using the curriculum. However, we recognize that there will continue to be some inexperienced users and that some interventionists find it effective to provide curriculum items to parents. Thus, the assessment and curriculum items continue to be written simply, and examples are provided as appropriate. It is our intent that people with minimal experience and education in child development can understand and follow the instructions for assessing the skill each item represents and for engaging in activities to promote the development of that skill.

Table 1.1.   Developmental domains and the sequences of the CCITSN

Personal-Social		Communication	
1.	Self-Regulation & Responsibility	13.	Verbal Comprehension
2.	Interpersonal Skills	14.	Conversation Skills
3.	Self-Concept	15.	Grammatical Structure
4-I.	Self-Help: Eating	16.	Imitation: Vocal
4-II.	Self-Help: Dressing		
4-III.	Self-Help: Grooming		
4-IV.	Self-Help: Toileting		
Cognition		**Fine Motor**	
5.	Attention & Memory: Visual/Spatial	17.	Imitation: Motor
6-I.	Visual Perception: Blocks & Puzzles	18.	Grasp & Manipulation
6-II.	Visual Perception: Matching & Sorting	19.	Bilateral Skills
7.	Functional Use of Objects & Symbolic Play	20.	Tool Use
8.	Problem Solving/Reasoning	21.	Visual-Motor Skills
9.	Number Concepts		
Cognition/Communication		**Gross Motor**	
10.	Concepts/Vocabulary: Receptive	22-I.	Upright: Posture & Locomotion
11.	Concepts/Vocabulary: Expressive	22-II.	Upright: Balance
12.	Attention & Memory: Auditory	22-III.	Upright: Ball Play
		22-IV.	Upright: Outdoor Play
		23.	Prone (on Stomach)
		24.	Supine (on Back)

Note: Sequences 10, 11, and 12 overlap the cognition and communication domains and have been separated in this table to show this.

Reduced Emphasis on Specific Adaptations

In the first two editions of the infant and toddler curriculum, specific adaptations for children with visual, hearing, and/or motor impairments were included with every item. This produced considerable redundancy. Due to the growing number of experienced early intervention specialists, we concluded that it would be sufficient to make general suggestions for modifications at the beginning of each sequence, relying on curriculum users to devise specific modifications to meet the needs of the individual children with whom they work.

Omission of Chapter on Motor Development

Given that pediatric physical and occupational therapists can provide specific information about motor development for serving the needs of individual children, we felt a chapter on motor development was no longer necessary. Interventionists who have not had an opportunity to obtain a background in the motor development of young children are encouraged to seek that information from one of the popular books on development, such as *Touchpoints: Your Child's Emotional and Behavioral Development: Birth to 3* (Brazelton, 1992) or *Your Baby and Child: From Birth to Age Five* (Leach, 1997), or from the previous edition of *The Carolina Curriculum for Infants and Toddlers with Special Needs* (Johnson-Martin et al., 1991). However, for information about the needs of a specific child, interventionists without a

background in motor development of young children should seek consultation from a physical or occupational therapist.

Increased Emphasis on Functional Activities

When the authors sought critiques from users of the second edition of the infant and toddler curriculum, many suggested increasing the emphasis on functional activities. In part, this concern may be due to a lack of clarity about how a particular skill related to a broader category of skills. For example, one interventionist felt that she spent far too much time teaching a child to remove cloths from objects (the focus of many items in the Object Permanence sequence). The purpose of those items was not to teach a child cloth pulling but to help the child learn to focus attention on an object and remember the object when it could no longer be seen (object permanence). The various ways of hiding the objects challenged the child's attention and memory. These purposes apparently had not been made clear.

In this third edition of the curriculum, the section in each item formerly titled *Use in Daily Routines* is now titled *Daily Routines & Functional Activities* to emphasize the importance of the skill being practiced in a variety of typical, day-to-day situations and to indicate how the skill can be practiced in a way that promotes greater effectiveness in the environment. Greater effectiveness may mean developing greater independence in play, increasing curiosity, using a skill for different functions, and so forth.

Nothing we write, however, is a substitute for you using your own education and experience and taking a long-term perspective. *The purpose of early intervention is to help children master the skills they will need to be prepared for both learning and social adjustment in kindergarten and beyond.* The functional activities or daily routines suggested for some items may be inappropriate for certain children or may be unacceptable in certain ethnic cultures. Thus, you need to consider how the skills you teach infants and toddlers relate to the goals families have for their children and the demands they will meet in school and in their communities. In addition, specific impairments may prevent a child from moving through one or more of the sequences included in the curriculum. When this happens, you need to think about how the sequence relates to parental goals and long-term academic, self-help, and social skills. It may be necessary to try to devise alternative ways for the child to achieve some competence in those areas (e.g., mastering language through the use of a communication board rather than speech). No general curriculum is a substitute for activities and goals informed by a child's unique characteristics.

Emphasis on Emergent Literacy

To encourage interventionists to think of the long-term goal of preparing children for school, this edition of the curriculum attempts to highlight the importance of emergent literacy skills. Since the 1980s, there has been a growing recognition that literacy does not begin with learning to read and write (Notari-Syverson, O'Connor, & Vadasy, 1998). Rather, it begins in the infant, toddler, and preschool years through

- *Print/book awareness:* Reading to children before they can read themselves is highly related to their later ability to read. Parents and families play a primary role by reading books to children, letting children see them reading, and pointing out text in the environment. Awareness of print includes early scribbling, drawing, letter/word formation, and the understanding that written words express ideas.

- *Metalinguistic awareness:* Metalinguistic awareness refers to the ability to reflect on, manipulate, and talk about linguistic forms. At the age level covered in this curriculum, this generally involves an interest in novel sounds and new words and the recognition that a new word shares characteristics with known words (e.g., isolating initial sounds in words, forming rhymes). Children learn these skills through rhyming, singing, and picking out sounds in words.

- *Oral language:* Oral skills related to reading include using words and sentences to describe events, tell a story, carry on a conversation, and express feelings (Notari-Syverson et al., 1998)

Items related to emergent literacy are scattered throughout the curriculum. They include attention to sounds, memory for sequences of sounds, interest in pictures and books, understanding that words stand for specific objects and pictures, speaking words, matching shapes, scribbling, and drawing shapes. Emergent literacy is one of the long-term goals that should be kept foremost in mind when developing intervention programs for children with special needs, whether the program is to be implemented at home or in a preschool.

A checklist of emergent literacy skills is included in the appendix at the end of this chapter. It covers skills learned from infancy through the preschool years (the ages covered by the CCITSN and the CCPSN). Most of these skills are included in one or another of the curriculum sequences. The value of the checklist is not only to help you assess a child's progress in emergent literacy but also to demonstrate the relationship of literacy to specific curriculum items focusing on visual, motor, cognitive, language, or social skills.

References for Parents and Teachers
Regarding Common Conditions Affecting Development

Many children who are served in early intervention programs have unspecified "developmental delays." The lack of a more specific diagnosis is due to both the genuine difficulty of making correct diagnoses in young children whose development is variable and a reluctance of professionals to label a young child. As authors, we also have concerns about labeling young children. Yet, a diagnosis is sometimes helpful to parents and the child in providing access to services that are earmarked for specific conditions. Furthermore, the diagnosis may have an impact on family planning and other important issues.

We encourage those working in early intervention to familiarize themselves with the characteristics of common conditions affecting early development. As you

work with a child described as having a developmental delay, it may become apparent that the child does not just have delays but has characteristics that suggest a more specific condition or may simply be very puzzling. If this happens, you may wish to encourage the family to seek further evaluation or professional consultation to better understand the nature of the child's problems, especially if a specific diagnosis would provide access to additional services or support for the family. To help in this process, Appendix A at the end of the book provides a list of common conditions affecting development. Characteristics of each of these conditions, their effects on development, specific tips for interventionists or classroom teachers, and a list of resources are included on the Paul H. Brookes Publishing Co. web site (http://www.brookespublishing.com/ccupdates).

FOR WHOM IS THE CCITSN INTENDED?

This edition of the CCITSN is designed to provide curricular intervention strategies for use with children with impairments who are functioning in the birth to 36-month developmental range. The earlier editions have been used successfully by a variety of interventionists like yourself: educators, psychologists, child care workers, public health nurses, physical and occupational therapists, and speech-language pathologists. These interventionists have worked with children who have a wide range of impairments, from mild to severe. To encourage continued broad usage, a major effort has been made to avoid professional jargon in the wording of the materials. There also has been an effort to alert users to a child's characteristics or responses that require attention from professionals with particular skills (e.g., a physical, occupational, or speech-language therapist).

The CCITSN is appropriate for use in center- and home-based intervention programs. It is anticipated that parents and other caregivers, with professional consultation and guidance, will use the curriculum items in their daily interactions with children who have special needs.

HOW WERE ITEMS CHOSEN FOR THE CCITSN?

The basic content for all three editions of the infant and toddler curriculum was selected in the same manner that it has been selected for most other early intervention curricula. That is, the developmental skills listed on a variety of norm-referenced tests of development were reviewed, and pertinent skills were incorporated into the curriculum (e.g., Bayley, 1993; Bzoch, League, & Brown, 1991; Folio & Fewell, 2000; Rosetti, 1990; Sparrow, Balla, & Cicchetti, 1984; Zimmerman et al., 2002). To these basic items were added items selected from the Ordinal Scales of Psychological Development (Uzgiris & Hunt, 1975), one of the better-known tests of cognitive development based on the theories of Jean Piaget, skills the authors judged to be alternatives for children whose specific disabilities prevent the devel-

opment of typical skills, skills from The Communicative Intention Inventory (Coggins & Carpenter, 1981) to broaden the focus of the communication section, and a few other skills that were considered to be important by the authors for social development and motivation. Specialists in speech-language pathology, occupational and physical therapy, nursing, psychology, education, and nutrition reviewed the lists of skills and contributed to the final selection process.

WHAT RESEARCH SUPPORTS THE CCITSN?

The first edition of the infant curriculum was developed as a part of a federal grant and was field tested in 22 centers in 11 states serving 150 children, including a number of children with severe physical and/or sensory disabilities.

Data Collected

Usefulness
Reviewers who had no experience with the curriculum completed a rating scale covering the comprehensiveness, understandability, usefulness for preparing an individualized education program (IEP), applicability to children with a broad range of disabling conditions, and ease of monitoring progress (perceived usability). Those participating in the field testing after 6–8 months of using the curriculum (actual usability) completed a similar scale.

Reliability of Use
Local field-test sites were visited bimonthly, and data were collected on how the curriculum was being implemented.

Child Progress
A five-step process examined the effectiveness of the curriculum for promoting developmental change: an initial assessment, a 3-month period of intervention focusing on half of the appropriate sequences, a second assessment, another 3-month period of intervention focusing on the neglected sequences, and a final assessment. This allowed a comparison of a child's progress in those sequences that were the focus of intervention with his or her progress in those sequences that were not the focus of intervention.

Outcomes

The data collected demonstrated that the curriculum users found *The Carolina Curriculum for Handicapped Infants and Infants at Risk* (Johnson-Martin et al., 1986) to be useful, that they used it as intended, and that it promoted developmental progress. Subsequent editions have not had the luxury of further field testing, but the authors have sought and incorporated feedback from interventionists who use the curriculum and scholars in child development and early intervention.

SUMMARY

The first two editions of the CCITSN have been used in a variety of settings to promote developmental progress in young children with special needs. They linked a developmental assessment procedure with curricular activities and provided suggestions for modifying activities to meet the needs of children with specific and severe disabilities. This revision is an attempt to update the curriculum by responding to feedback from users—building on the strengths of the previous editions as well as addressing concerns.

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C H A P T E R O N E A P P E N D I X

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Checklist for Emergent Literacy Skills

Print/book awareness

____ Handles and plays with books

____ Looks at pages

____ Turns pages

____ Examines pages visually

____ Puts hands on pictures

____ Indicates a particular picture when asked, "Show me . . ."

____ Has favorite pictures or pages

____ Comments on story

____ Orients book correctly (i.e., right side up, opening from right side)

____ Has favorite books, asks to have them read

____ Talks about a story while looking at pictures

____ Points to text while talking

____ Knows that text moves from left to right

____ Reads environmental print and logos

____ Recognizes simple words in text

____ Answers questions about the story

____ Relates story to own life experience

____ Knows names and sounds of letters

____ Makes marks on paper

____ Scribbles

____ Copies lines

____ Copies shapes

____ Copies letters

____ Copies words

____ Pretends to write

____ Uses invented spelling to write short messages

Metalinguistic awareness

____ Uses environmental sounds in play

____ Repeats single sounds when asked to

____ Fills in next line in repeated line story

____ Participates in nursery rhymes

____ Recalls one word from a sentence

____ Understands and produces rhymes

____ Recognizes beginning sounds of a word

____ Blends syllables into words

____ Divides words into syllables

Oral language

____ Uses words

____ Uses sentences

____ Describes an event with a beginning, middle, and end

____ Repeats stories that have been read

____ Has sustained conversations

____ Uses categories to describe objects (e.g., animals, food)

____ Talks about past experiences during play

____ Predicts what might happen

____ Differentiates between real and pretend

____ Describes feelings and motivations

Source: Notari-Syverson, A., O'Connor, R.E., & Vadasy, P.F. (1998). *Ladders to literacy: A preschool activity book.* Baltimore: Paul H. Brookes Publishing Co.